Scientific Research Publishing

Open Journal of Nursing, 2021, 11, 1015-1030
https://www.scirp.org/journal/ojn
ISSN Online: 2162-5344
ISSN Print: 2162-5336

# Patient Safety Culture Post Covid-19 Pandemic: In Perspective of Millennials Human Capital Issues

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**How to cite this paper:** Singh, P. (2021) Patient Safety Culture Post Covid-19 Pandemic: In Perspective of Millennials Human Capital Issues. *Open Journal of Nursing*, **11**, 1015-1030.
https://doi.org/10.4236/ojn.2021.1111081

**Received:** October 11, 2021
**Accepted:** November 27, 2021
**Published:** November 30, 2021



## Abstract

**Background**: Patient safety is the core task of any healthcare business. As medical harm caused by hospitalisation is still on the rise and patient safety culture is a struggle. We aim to determine the nature of patient safety culture in a private hospital and explore some unique human resource problems in Malaysia. **Methods**: In our case study, we use the Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire to measure the 12 dimensions of patient safety culture. The survey received 281 respondents (76% response rate) from all the millennial frontline healthcare providers, including doctors, nurses and allied healthcare providers. The result of the survey was used as the basis to further explore the problems in this hospital. In-depth interviews, observation and document reviews were conducted in relation to human resource problems. This study used IBM SPSS 26 for Windows for statistical analysis and Atlas ti.8 for qualitative analysis of open comments. We used Interpretive Phenomenological Interpretation for analysis of data after triangulation. **Results**: The overall average positive response rate for the 12 patient safety culture dimensions of the HSOPSC survey was 64%. The result showed that the staff feels positively toward patient safety culture in this hospital. The dimension that received good performance is "Manager expectation", "Management support for patient safety" and "Organisational learning". The dimension with the poor performance was "Staffing", "Frequency of error reporting", "Teamwork across units", and "Handoff and transitions". The open comments indicated inadequate staffing and nursing retention issues. Interviews, observation and document reviews related to staffing reveal high turnover rates among millennial nurses, high overtime and on-call rates, chaotic units with procedures, doctors' round, admission and discharges mainly in medical and surgical units causing distraction. Poor shared governance is the

biggest challenges that need immediate attention post Covid-19 pandemic. **Conclusions**: The HSOPSC measurement gave valuable insights on patient safety culture in a private hospital in Malaysia. The overall perception of patient safety culture was satisfactory. The poor positive response rate for "Staffing" dimension and the open comments suggests a need for an urgent need for retention and human resource management strategies to prevent brain drain due to high turnover rates, especially among millennial nurses. The key factors causing dissatisfaction and brain drain among nurses are the lack of shared governance.

## Keywords

Patient Safety Culture, Human Capital, Human Resource, Staffing, Millennial Nurses

## 1. Introduction

The core existence of healthcare business is to preserve patient safety. Generally, medical harm during hospitalisation in a private hospital is very costly in terms of medical litigation and the hospital's reputation. There is a lack of comprehensive annual statistics on medical negligence claims in Malaysia since such data are not collected systematically in this country. There are indications of an upward trend [1]. In Malaysia, according to the Ministry of Health's patient safety statistics covering both private and government hospitals from 2016 to 2018, cases of medical harm affecting patient safety increased by 100%. These cases were wrong-site surgery, retention of foreign objects, blood transfusion errors, medication errors, and patient falls. In the first World Patient Safety Day and Patient Safety Seminar in 2019, former Health Minister Datuk Seri Dr Dzulkefly Ahmad acknowledged the seriousness of the issue surrounding patient safety. In his speech, Dr Dzulkefly said that over 134 million harmful care cases happen annually in hospitals in low- and middle-income countries; 84% of these cases could have been avoided. In the emergency department of Hospital Universiti Sains Malaysia (HUSM) in Kelantan, the prevalence of medication error was as high as 30.5% [2]. Factors that significantly contributed to medication errors among nurses at a Malaysian general hospital were heavy workload and complicated orders (95.8%), percentage of new staff members (81.2%), and negligence of personal concerns for workers (66%). As healthcare businesses are striving to improve quality of care and patient safety, there is a growing urge to transform patient safety by strengthening patient safety culture and human capital issues.

Patient safety in the healthcare business was under the spotlight following the Institute of Medicine revelation "*To Err Is Human*: *Building a Safer Health System*" [3]. The notion of patient safety culture emerged from highly complex and hazardous industries, such as aviation and nuclear power. Safety culture is defined as a result of attitudes, perception, beliefs and values on patient safety, of

the employees within an organisation [4] [5]. The paradigm shift in patient safety has shifted its focus from individual blame to system failure issues [6]. As there is limited data on the struggles faced by the private hospital at a local level (Malaysia) and the statistics collected on patient safety are directly on medical errors caused by active failure. No official statistic is available on latent failures such as communication, teamwork and staffing.

The most commonly used measurement tool is AHRQ's Hospital Survey on Patient Safety Culture (HSOPSC), followed by the Safety Attitudes Questionnaire (SAQ), both created in the United States of America (US) [7]. The HSOPSC of AHRQ is a structured questionnaire with open comments for assessment of patient safety culture of healthcare facilities [8]. The items in HSOPSC focused on evaluating the system failures within a healthcare facility. The good psychometric properties, such as exploratory factor analysis, item analysis, inter-correlation and confirmatory factor analysis is found in HSOPSC, thus, are widely used and tested with large samples and citations [9] [10] [11].

Human capital is defined as the combination of knowledge skill and attitude embedded within an employee to perform a task or labour so as to contribute to the economic value [12]. Staffing adequacy refers to having an adequate staff to handle the workload and work hours to provide the best patient care [13]. Staff turnover is crucial in healthcare. Increased turnover rate is detrimental to the recruitment process, efficiency of training and productivity [14]. High turnover costs add challenges to management and organisational effectiveness as the hiring, training as the loss of productivity is costly. The loss of >5% of the total revenue is expected in healthcare turnovers [14]. The retention of nurses is among the most critical challenges for healthcare organisations globally [15]. Financial damages are incurred through the hiring process of new employees, while non-monetary expenses are associated with the loss of knowledge and skills and the forfeiture of social capital [16]. In Malaysia, career prospect, social injustice and compensation are key causes of the intention of millennial working adults to migrate to other countries [17]. With issues of Covid-19 pandemic now, many households are facing job loss and financial crisis. The healthcare businesses have to find new market niche to differentiate themselves and attract prospective employees. The problem is only aggravated by the shift toward a millennial healthcare workforce, whose current priorities are very dissimilar from their predecessors. Unlike baby boomers and Gen Xers who primarily sought competitive compensation, millennials value benefits and advancement opportunities far more than their predecessors. Employers looking to hire the next batch of medical professionals need to make changes now to appeal to their young candidates.

The main objective of this research is to determine patient safety culture in a private hospital in Malaysia utilising HSOPSC as a basis to further explore problems within the hospital. Issues with "Staffing" dimension were identified first and were used to further explore the human capital issues existing with this hospital.

## 2. Methods

### HSOPSC Questionnaire

The HSOPSC tool was intended to measure 12 dimensions with 42 items that use Likert scale with five points response scale ("Strongly disagree", "Disagree", "Neither disagree or agree", "Agree" and "Strongly agree") or frequency scale ("Never", "Rarely", "Sometimes", "Most of the times", "Always" or "Does not apply or don't know"). The overall patient safety culture is measured using ("Poor", "Fair", "Good", "Very good", "Excellent"). The measurement consists of three parts:

Part One: Seven-unit level of patient safety culture.

1) Supervisor/manager expectations and actions promoting safety (four items)
2) Organisational learning or continuous improvement (three items)
3) Teamwork within units (four items)
4) Communication openness (three items)
5) Feedback and communication about error (three items)
6) Non-punitive response to error (three items)
7) Staffing (four items)

Part Two: Three hospital-level patient safety culture

8) Hospital management support for patient safety (three items)
9) Teamwork across hospital units (four items)
10) Hospital handoffs and transitions (four items)

Part Three: Two patient safety outcome variables

11) Overall perception of safety (four items)
12) Frequency of event reporting (three items)

The HSOPSC questions were not translated as the hospital staff received their undergraduate and postgraduate education in the English language. The Cronbach's $\alpha$ for the data in this research ranged from 0.52 to 0.84. To make the results easier to interpret, the AHRQ recommends an "average positive" scoring system for calculating subscale scores. Responses to each question were scored as follows: 1 represented a positive culture in favour of patient safety, and 0, an unfavourable culture. A mean score was computed for each subscale; higher scores indicated a more favourable patient safety culture. Although a total score based on the Likert scale may have contained more respondent information because it reflects a 5-point response to each item, its meaning is not clear and, thus, was not recommended by the AHRQ. Scores were colour coded; green indicated "good"; orange, "needs improvement"; and red, "weak". The response rate of 70% and above-indicated areas of strength/good for the hospital; between 70% and 50%, areas requiring improvement; and below 50%, areas of weakness. The results showed the frequency of positive (strongly agree/agree) and negative (strongly disagree/disagree) answers of participants on each of the survey items.

Census sampling was used to survey all the frontline staff in this hospital. In-depth interview, observation and document review was done after the survey result, which meant to highlight the weakness area on patient safety. The in-depth

interview had doctors (n = 4), clinical managers (n = 5) and nurses (n = 21) chosen by purposeful sampling. The observation was done on staff working in clinical units at six different locations. Relevant document review pertaining to human resource or staffing was reviewed.

We used IBM SPSS version 26 for the quantitative analysis and Atlas ti.8 for windows for the qualitative analysis. The Interpretive Phenomenological Analysis (IPA) approach was employed to interpret the qualitative data after performing data triangulation. IPA was considered suitable because the findings of the survey generated only descriptive information about patient safety culture, which provided an overview of the situation rather than detailed understanding of such a complex and sensitive subject in the Malaysian private hospital and millennial context. IPA was used as it focuses on the interpretation more than the description of a phenomenon. This approach was also considered to help explore the reasons that lead to poor safety culture using the HSOPC questionnaire; it gives the researcher access to participants' world and lived experience [18].

Ethics approval for the study was obtained together with permission to conduct the research. Participant information packs and consent forms were e-mailed to the hospital representatives before conducting the study, with extra copies available at every session. Participants were invited to discuss any concerns before written consent was obtained. They also had the option to request feedback following the completion of the study in the form of a summary document.

## 3. Results

A total of 231 respondents completed the survey (response rate of 73.1%), which is considered good [19] [20]. **Table 1** shows the respondents by category according to their departments. The respondents with census sampling were nurses (160 samples), doctors (10 samples), allied health staff (15 samples) and administrators (46 samples). The average age of the respondents was 31 years old. The score of each item, together with the percentage of the average positive score for each dimension, is shown in **Table 2**. The details of findings for each score shown in **Table 2** are discussed in detail below under each subheading.

**Table 1.** Results of census sampling for the survey.

| Group | Department/Unit | Number of staff members | Number of returned questionnaires |
|---|---|---|---|
| Nursing | Medical | 35 | 33 |
| | Surgical | 31 | 25 |
| | Obstetric & Gynae | 26 | 21 |
| | Paediatrics | 21 | 13 |
| | Emergency | 21 | 15 |

**Continued**

| | | | |
|---|---|---|---|
| | Intensive care | 19 | 10 |
| | Operation theatre | 31 | 19 |
| | Outpatient clinics | 22 | 19 |
| Doctors | Medical | 20 | 10 |
| Allied Health | Physiotherapy & Rehabilitation | 13 | 5 |
| | Pharmacy | 11 | 5 |
| | Radiology | 10 | 5 |
| Administration | Frontline office | 35 | 31 |
| | Clinical manager | 21 | 15 |
| **Total** | | **316** | **231** |

**Table 2.** Key summary responses to patient safety cultures items.

| | Item | Strongly Disagree/ Disagree | Neither | Strongly Agree/ Agree | % Positive Response |
|---|---|---|---|---|---|
| **Teamwork Within Units** | | | | | |
| A1 | People support one another in this unit | 37 (16%) | 36 (16%) | 158 (68%) | 68** |
| A3 | When a lot of work needs to be done quickly, we work together as a team to get the work done | 39 (17%) | 21 (9%) | 171 (74%) | 74*** |
| A4 | In this unit, people treat each other with respect | 36 (16%) | 37 (16%) | 158 (68%) | 68** |
| A11 | When one area in this unit gets really busy, others help out | 53 (23%) | 35 (15%) | 143 (62%) | 62** |
| | | | | Average percentage | 68** |
| **Supervisor/Manager Expectations & Actions Promoting Patient Safety** | | | | | |
| B1 | My supervisor/clinical manager says a good word when he/she sees a job done according to established patient safety procedures | 8 (3%) | 22 (10%) | 201 (87%) | 87*** |
| B2 | My supervisor/clinical manager seriously considers staff suggestions for improving patient safety | 7 (3%) | 36 (16%) | 188 (81%) | 81*** |
| B3 | Whenever pressure builds up, my supervisor/clinical manager wants us to work faster, even if it means taking shortcut [R] | 201 (87%) | 27 (12%) | 3 (1%) | 87*** |
| B4 | My supervisor/clinical manager overlooks patient safety problems that happen over and over [R] | 200 (87%) | 26 (11%) | 5 (2%) | 87*** |
| | | | | Average percentage | 86*** |
| **Organisational Learning—Continuous Improvement** | | | | | |
| A6 | We are actively doing things to improve patient safety | 13 (6%) | 31 (13%) | 187 (81%) | 81*** |
| A9 | Mistakes have led to positive changes here | 35 (15%) | 43 (19%) | 153 (66%) | 66** |
| A13 | After we make changes to improve patient safety, we evaluate their effectiveness | 17 (7%) | 37 (16%) | 177 (77%) | 77*** |
| | | | | Average percentage | 75*** |

Continued

| | | | | | |
|---|---|---|---|---|---|
| **Management Support for Patient Safety** | | | | | |
| F1 | Hospital management provides a work climate that promotes patient safety | 28 (12%) | 21 (9%) | 182 (79%) | 79*** |
| F8 | The actions of hospital management show that patient safety is a top priority | 14 (6%) | 27 (12%) | 190 (82%) | 82*** |
| F9 | Hospital management seems interested in patient safety only after an adverse event happens [R] | 144 (62%) | 28 (12%) | 59 (26%) | 62** |
| | | | | Average percentage | 75*** |
| **Overall Perceptions of Patient Safety** | | | | | |
| A10 | We have patient safety problems in this unit [R] | 90 (39%) | 43 (19%) | 98 (42%) | 39* |
| A15 | It is just by chance that more serious mistakes don't happen around here [R] | 165 (71%) | 34 (15%) | 32 (14%) | 71*** |
| A17 | Our procedures and systems are good at preventing errors from happening | 17 (7%) | 31 (13%) | 183 (79%) | 79*** |
| A18 | Patient safety is never sacrificed to get more work done | 8 (4%) | 16 (7%) | 207 (90%) | 90*** |
| | | | | Average percentage | 70** |
| **Teamwork Across Units** | | | | | |
| F4 | Hospital units do not coordinate well with each other [R] | 41 (18%) | 34 (15%) | 100 (43%) | 18* |
| F10 | There is good cooperation among hospital units that need to work together | 90 (39%) | 41 (17%) | 100 (43%) | 43* |
| F2 | It is often unpleasant to work with staff from other hospital units [R] | 95 (41%) | 54 (23%) | 82 (36%) | 41* |
| F6 | Hospital units work well together to provide the best care for patients | 75 (33%) | 40 (17 %) | 116 (50 %) | 50** |
| | | | | Average percentage | 38* |
| **Staffing** | | | | | |
| A2 | We have enough staff to handle the workload | 128 (55%) | 31 (13%) | 72 (31%) | 31* |
| A5 | Staff in this unit work longer hours than what is best for patient care [R] | 44 (4%) | 48 (21%) | 139 (60%) | 4* |
| A7 | We use more agency/temporary staff than what is best for patient care [R] | 210 (91%) | 20 (9%) | 21 (9%) | 91*** |
| A14 | We work in "crisis mode" trying to do too much, too quickly [R] | 88 (38%) | 30 (13%) | 113 (49%) | 38* |
| | | | | Average percentage | 41* |
| **Handoffs & Transitions** | | | | | |
| F3 | Things "fall between the cracks" when transferring patients from one unit to another [R] | 25 (11%) | 4 (16%) | 170 (74%) | 11* |
| F5 | Important patient care information is often lost during shift changes [R] | 25 (11%) | 30 (13%) | 176 (76%) | 11* |
| F7 | Problems often occur in the exchange of information across hospital units [R] | 15 (7%) | 27 (12%) | 189 (82%) | 7* |
| F11 | Shift changes are problematic for patients in this hospital [R] | 23 (10%) | 32 (14%) | 175 (76%) | 10* |
| | | | | Average percentage | 9* |

Continued

| | | | | | |
|---|---|---|---|---|---|
| **Non-punitive Response to Errors** | | | | | |
| A8 | Staff feel like their mistakes are held against them [R] | 106 (46%) | 28 (12%) | 106 (46%) | 46* |
| A12 | When an event is reported, it feels like the person is the subject of the report and not the problem [R] | 96 (42%) | 29 (13%) | 106 (46%) | 42* |
| A16 | Staff worry that mistakes they make are kept in their personnel file [R] | 95 (41%) | 39 (17%) | 97 (42%) | 41* |
| | | | | Average percentage | 43* |
| **Feedback and Communication About Error** | | | | | |
| | | Never/Rarely | Some-times | Most of the times/Always | % Positive response |
| C1 | We are given feedback about changes put into place based on event reports | 17 (7%) | 58 (25%) | 156 (68%) | 68** |
| C3 | We are informed about errors that happen in this unit | 12 (5%) | 40 (17%) | 179 (77%) | 77*** |
| C5 | In this unit, we discuss ways to prevent errors from happening again | 14 (6%) | 70 (30%) | 147 (64%) | 64** |
| | | | | Average percentage | 70** |
| **Communication Openness** | | | | | |
| C2 | Staff will freely speak up if they see something that may negatively affect patient care | 24 (10%) | 105 (46%) | 159 (69%) | 69** |
| C4 | Staff feel free to question the decisions or actions of those with more authority | 41 (18%) | 75 (33%) | 115 (50%) | 50* |
| C6 | Staff are afraid to ask questions when something does not seem right [R] | 166 (72%) | 50 (22%) | 15 (7%) | 72*** |
| | | | | Average percentage | 64** |
| **Frequency of Events Reported** | | | | | |
| D1 | When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported? | 86 (37%) | 59 (26%) | 86 (37%) | 37* |
| D2 | When a mistake is made, but has no potential to harm the patient, how often is this reported? | 86 (37%) | 78 (34%) | 67 (29%) | 29* |
| D3 | When a mistake is made that could harm the patient, but does not, how often is this reported? | 48 (21%) | 84 (36%) | 99 (43%) | 43* |
| | | | | Average percentage | 36* |
| | | | | **Total average percentage** | **64*** |

Good***; Need Improvement**; Weak*; Reverse coded question [R].

### 3.1. Hospital Level Patient Safety Culture

Since culture is a collective belief of a group in this hospital, it is vital that the report does not reflect individual characteristic. The patient safety culture survey result is shown in Figure 1 as an overall result, such as an average percentage of its survey item and the performance (good, need improvement or poor) of the dimension. The hospital-level aspects of patient safety culture cover the "Hospital management support for patient safety" dimension, which is a signal from the

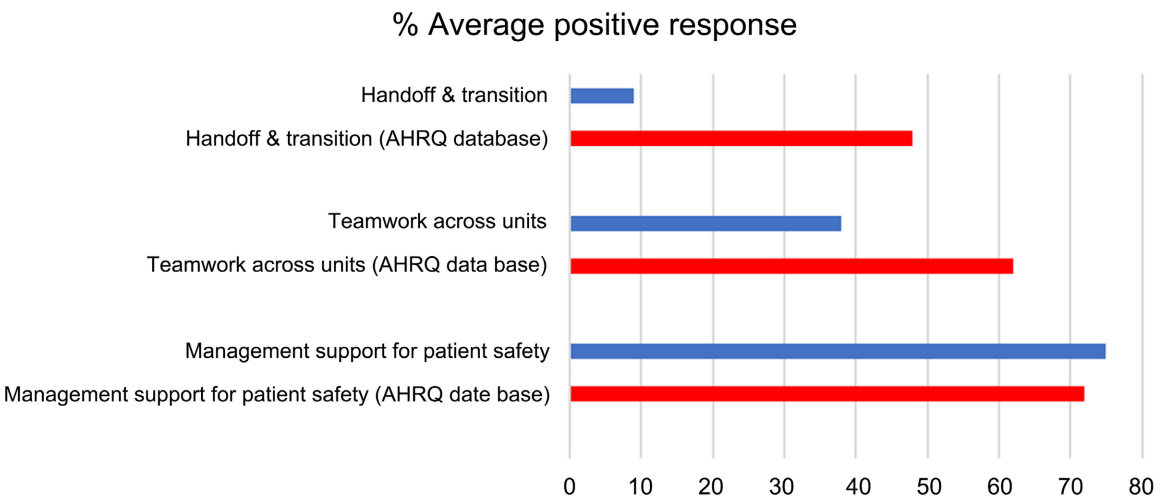


**Figure 1.** Hospital level patient safety culture compared to AHRQ database.

frontline staff if the managers or supervisors create a patient safety culture in this hospital. The performance was good with the positive response rate for this item is 75%, which is higher than the AHRQ data (72%). For the "Teamwork across hospital units" dimension, the performance was poor with positive response rate for this hospital is (38%) is significantly lower than that for the AHRQ data (62%). Staff in this private hospital in Malaysia seem to have poor cooperation and coordination across different units or departments. The result signifies that most departments have decentralised management and are running autonomously. Therefore, it is expected that vital information is often missed during handoff and transition of care as evidenced by the average percentage of positive responses for both surveys are poorest on this item 9%.

### 3.2. Unit-Level Characteristics of Patient Safety Culture

The unit-level characteristics of patient safety culture reflect the perception of respondents on patient safety culture within their department or unit. The average percentage of positive responses for "Teamwork within units" is 68% which need improvement and is much lower than that reported by the AHRQ (82%). The results signify that most of the respondents in this study feel less supportive and may suffer job burden their unit due to lack of cooperation from their team members. However, for the "Supervisor/manager expectations and actions promoting safety" dimension, the average percentage of positive responses for this hospital is 86%, which is good and is also higher than the AHRQ data (80%). This signifies those supervisors and managers at the unit level are putting high priority for patient safety; however, staff need better teamwork to achieve the result.

The "Organisational learning-continuous improvement" dimension of patient safety culture represents a learning culture in which mistakes lead to positive changes, and changes are evaluated for effectiveness. The percentage of positive responses for organisational learning in this hospital is quite impressive (75%),

slightly higher than in the AHRQ data (72%). The organisational learning and continuous improvement were mainly due to well established continuous staff development programs, implementation of electronic early warning scores to improve detection of deteriorating patient, robotic pharmacy, electronic medical record with computerised physician order entry, intentional hourly nursing rounds, smart infusion pumps as evidenced in the in-depth interview.

Nevertheless, for the "Feedback and communication about error" and "Communication openness" dimensions, the positive response rates for this private hospital and AHRQ database are not very different. The paradigm shift in the individual blame has been recommended to be replaced by looking at system failure. The "Nonpunitive response to error" dimension measures to what extent the hospital staff feels safe for their mistakes, and the records of mistakes are not in safekeeping for future punishment. For both this private hospital and the AHRQ data, this item's positive response rate is less than 50% and is one of the poorest amongst the other dimensions of patient safety culture in this survey.

The dimension is "Staffing" reflects if a staff unit has sufficient staff provision for carrying the work, and if the working hours are perceived as appropriate for providing the patient safety care. This dimension received the lowest percentage of positive response for patient safety culture in this survey, and it is having nearly 10% difference from the AHRQ database. The result of unit-level characteristics of patient safety culture is shown in Figure 2. The later investigation proved that staffing scored poorest due to high turnover rates especially among the millennial nursing staff.

### 3.3. Outcome-Level Aspects of Patient Safety Culture

The "Overall perception of patient safety culture" received good score 70% which is higher than AHRQ 66%; indicating right processes and systems for preventing mistakes and the level of absence of patient safety incidents. However, for "Frequency of event reporting" this hospital scored the lowest 36% indicating poor reporting of safety incidents. The AHRQ database has a much higher score of 67% percentage of positive response.

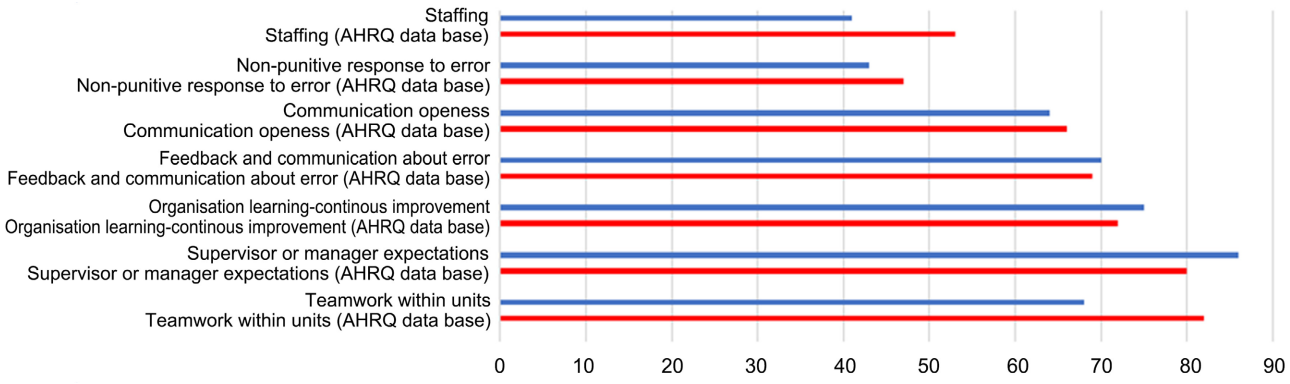


Figure 2. Unit-level characteristics of patient safety culture is shown in comparison to AHRQ database.

## 4. Interview, Observation and Document Review Result

Two main content areas were identified based on the verbatim transcriptions of the participants', practice observation and document review activities:

- Staffing challenges
- Patient care models

### 4.1. Staffing Challenges

Interviewees reveal the staffing problem to be the major issue in trying to accomplish a sustaining patient safety culture. Doctors verbalised working extended hours and weekend and evening clinics to cater for their patient's request.

*We have staffing problem mainly in among nurses—NUR 15*

*After about two years of working, and staff are leaving the organisation—MX2*

*We work over the regular working hours to finish up the clinics. I even have to run weekend clinics to cater for my patients.—DR 1*

Voluntary turnovers are related to salary issues and workload stress. The hospital cannot improve its culture if the turnover rate is of concern. Document review complimented the findings of workload revealing an overtime rate of around 300 hours per month in medical and surgical units among nurses. On average nursing staff in medical, surgical and emergency room works 60 hours per-week. Nurses in operating theatre and obstetric unit shows high on-call hours and overtime hours due to unplanned surgery and unplanned induction of labours.

*New staff leave because of the salary.—DR3*

*Nurses are stressed with the workload. Having to do a double shift in a hectic unit is simply torture. They go to a better organisation when they have the opportunity.—DR 1*

*What I can see is we are struggling because of understaffing and a lack of experienced staff in nursing. The new staff comes in without any experience, by the time they become familiar with the work and get used to patient safety standards and expectation, they leave. It is distressing for us to leave our patient in the hands of inexperienced nurses.—DR3*

Work life imbalance due to working extended hours, creates stress and job dissatisfaction and leads to poor job retention among nurses [21]. This finding could help explain the high voluntary turnover rates in this hospital. Other study revealed the association between long working hours with increase errors affecting patient safety due to long working hours [22]. Lack of experienced registered nurse can cause decrease in quality standard and amount of interaction between the patient and the staff [21]. Other studies reveal that units even with a reasonable level of staff turnover rates have lower scores for team learning [23].

Team learning influences patient safety culture in general. However, this hospital's struggle in training onboarding staff with quality and patient safety issues are not sustaining; because the staff leave as soon, they are deemed competent.

The new staff receives three months of intensive training and mentoring.

*Once trained and competent they leave the organisation. Then we are faced with a new batch who will take time to be trained. It is an ongoing chronic problem. We cannot reach our optimal target because of that.—MX2*

Staff turnover is affecting the sustainability of patient safety culture formation. (DR2, MX2, MX1, DR1, DR3, N15 mentioned about staff turnover, particularly on millennial nurses. Data from human resource department reveals high turnover for the staff of the millennial age group after two to three years of joining work in this hospital. Other researchers found the turnover of clinical staff is likely to endanger the performance of patient safety and quality as understaffing interrupts the continuous care of a patient [24]. Three other respondents mentioned the burden of overtime restraining attendance on training and workshops.

Inexperienced staff or inadequate staffing affects the hospital. Poorly qualified healthcare workers might create workflow inefficiencies or deliver poor quality patient care. Experienced workers must face the consequence of fixing their errors or working overtime. Resentment and stress might build up and lead to lower staff satisfaction. Replacement of human capital consisting of knowledge, skills and attitude takes time.

"*It takes time to replace experienced staff.*"—*NUR 15*

Meanwhile other study suggest that organisation that develops their human capital by making investment through time, money and commitment into employee training, can reduce voluntary turnover rates [25]. Others have proven human capital development by staff retention and adequacy can increase higher engagement in unit safety practices and culture [26].

### 4.2. Patient Care Model

A model of nursing care is vital in ensuring patient safety. Although tasked-based procedures are good when resources are less, good coverage of patient safety is not evident in such a model. While they may be able to accomplish the task, covering personalised care plans are impossible to achieve. MX 2 said that shifting from a task-based nursing model to a more individualised care called "cubicle nursing" may improve patient safety.

*Usually, we work in a team. Say…we have an admission. Everyone will do the admission work; one staff will be with the patient and take the vital signs and assessment; another will do the documentation. We normally ask the one who is good with a computer to do the documentation—NUR 11*

"*The staff does everything as a team, mostly task-based procedures. We are trying to create cubical nursing.*"—*MX 2*

Six sets of observation in the clinical units show units were chaotic, in the mornings particularly in general surgery and medical units with many specialists. The doctors' rounds are not arranged uninformedly. Procedures such as admission, discharges, operating schedule, multiple doctor's rounds at one time,

creates variances and divided attention of staff away from the patient. Other studies reveal similar findings, especially during medication rounds [27]. High occurrence of concern such as distractions means high chances of failure and lower chances of being reliable in preventing medical errors [28].

## 5. Discussion

The HSOPSC survey by AHRQ has been used to meet the increasing demand for patient safety culture assessment in the developed countries, especially in the US. In this study, we used HSOPSC to measure patient safety culture in a private hospital in Malaysia and compared the result with the AHRQ database that contains the average positive response rate. The overall mean positive response rate for the 12 patient safety culture dimensions of the HSOPSC survey results in this private hospital was 64%, almost similar to the AHRQ data (65%). The results indicate that hospital staffs in this private hospital have positive perception toward patient safety culture. The dimension that received the good performance or highest positive response rate was "Supervisor or manager expectations and actions promoting patient safety", which 85% is higher to the results reported in Sweden [29] and Iran [30]. On the other hand, the dimension that had the poor performance or lowest percentage of positive responses was "Staffing", "Nonpunitive response to error", and "Hospital Handoffs & transitions". Open comments in the survey indicated that most of the participants feel that staff allocation is not adequate to handle the patient safety-related workload. Further interview and observation surrounding staffing reveals high turnover rates, especially among millennial nurses, overtime and a high number of procedures causing distraction at work. Document review reveals after two to three years of joining work.

These findings indicate that more attention needs to be paid on voluntary turnovers rates among millennial nurses, dissatisfaction on staffing levels, overtime and general work life balance issues. Root cause analysis to what causes the chaotic situations in clinical area is needed. When hospitals have inadequate staffing or inexperienced workers, complication and infection rates rise, medication errors, and the patient's length of stay are also negatively affected. The skill and knowledge component within the human capital is negatively affected if a hospital is facing a turnover of staff after two to three years of service. Sustaining talented healthcare staffing enhances the quality of patient care, and also positively affects the perception of the more experienced staff about their working conditions, resulting in improved safety culture [31].

Similarly, the attitude or ability with the human capital component is affected if the staff's ability is reduced due to job demand. The ability of multitasking and coping with a variety of demands seems to overwhelm the millennial staff who were still trying to find their groove in this case study. These problems' dimensions were lesser in specialist units that were complicated, but well-defined moods of actions practised. The abundance of consultant specialist or doctors directing

in one unit seems to outnumber the nursing staff per shift in general units (medical and surgical) as seen the observation. Ultimately the different inputs such as treatment orders, procedures, instructions and complexity of treatments created a strain on the millennial nurses' ability. Small failures to manage often link together and expand [32]. Other members' reflexes are necessary to avoid staff getting overwhelmed to avoid poor "Teamwork within the units" situation. Overwhelmed staff contributes to the gap in patient safety practices.

Human capital transformation strategies are necessary to create retention of skills and talents from draining out. There needs to be the improvement in creating strong co-worker relationship from all multidisciplinary members across all units. Since culture is made up of values, beliefs and behaviours, strategies to embrace trust, respect, collaborate and work together as a team for healthier patient safety culture is needed. However, this study concludes that high staff turnover in this case study impedes the creation of patient safety culture.

The results of this study provide some evidence that health care organizations may be able to effectively lower turnover by making investments in the training and development of their human resources. This finding provides support to the commitment position that employer-provided training increases organizational commitment and reduces turnover.

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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