Hospital survey on patient safety culture in Sarawak General Hospital: A cross sectional study

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ABSTRACT

Introduction: Patient safety is defined as 'the prevention of harm caused by errors of commission and omission'. Patient safety culture is one of the important determining factor in safety and quality in healthcare. The purpose of this study is to assess the views and perceptions of health care professionals about patient safety culture in Sarawak General Hospital (SGH).

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Methods: A cross-sectional study, using the 'Hospital Survey on Patient Safety Culture (HSOPSC)' questionnaire was carried out in 2018 in SGH. Random sampling was used to select a wide range of staff in SGH. A self-administered questionnaire was distributed to 500 hospital staff consisting of doctors, nurses, pharmacist and other clinical and non-clinical staff, conducted from March to April 2018. A total of 407 respondents successfully completed the questionnaire. Therefore, the final response rate for the survey was 81.4%. This study used SPSS 22.0 for Windows and Hospital Data Entry and Analysis Tool that works with Microsoft Excel developed by United States Agency for Healthcare Research and Quality (AHRQ) to perform statistical analysis on the survey data.

Results: Majority of the respondents graded the overall patient safety as acceptable (63.1%) while only 3.4% graded as excellent. The overall patient safety score was 50.1% and most of the scores related to dimensions were lower than the benchmark scores (64.8%). Generally, the mean positive response rate for all the dimensions were lower than composite data of AHRQ, except for "Organizational Learning – Continuous Improvement", which is also the highest positive response rate (80%), higher than AHRQ data (73%). The result showed that SGH has a good opportunity to improve over time as it gains experience and accumulates knowledge. On the other hand, the lowest percentage of positive responses was "Non-punitive response to error" (18%), meaning that most of the staff perceived that they will be punished for medical error.

Conclusions: The level of patient safety culture in SGH is acceptable and most of the scores related to dimensions were lower than benchmark score. SGH as a learning organisation should also address the issues of staffing, improving handoff and transition and develop a non-punitive culture in response to error.

INTRODUCTION
Patient safety is defined as 'the prevention of harm caused by errors of commission and omission'.[1] Examples of patient safety incidents are medication error, patient fall, wrong surgery or adverse outcome of clinical procedures. Patient Safety is a critical component to the quality of healthcare. Those patient safety incidents could be costly both for the patients and for the healthcare system. As the hospital striving to improve quality care, there is a growing recognition of the importance to establish a culture of patient safety.

Malaysia Patient Safety Goals were introduced by Ministry of Health Malaysia in 2013, since then a lot of initiatives has been implemented to improve patient safety across all hospitals in Malaysia. Sarawak General Hospital (SGH) organises Patient Safety Campaign annually since 2016 to create awareness and educate healthcare professionals on various aspects of patient safety. However, there is a paucity of research on patient safety culture conducted in Malaysia. Developing a patient safety culture was one of the recommendations made by the Institute of Medicine[2] to assist hospitals in improving patient safety. Patient safety culture is defined as the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour, which determine the commitment to, and the style and proficiency of, an organisation's health and safety management.[3] The Hospital Survey of Patient Safety Culture (HSOPSC) questionnaire was developed by the United States Agency for Healthcare Research and Quality (AHRQ), and it has been widely used to measure institutional and national level patient safety culture and to measure the effectiveness of strategies planned to improve patient safety.[4] HSOPSC has been tested on large sample, and has good supporting documentation, sound psychometric properties and comprehensive coverage of safety culture.[5,11,17] In addition to HSOPSC, AHRQ also provided a database of 680 hospitals in United States participating in the HSOPSC survey. The database consists of data from 447,584 respondents who completed the survey, including nurses, physicians, technicians, pharmacists and administrator in 2016.

The main objective of this research was to use the HSOPSC measurement tool to evaluate patient safety culture in the SGH and compare these results with existing benchmark scores using the Hospital Data Entry and Analysis Tool that works with Microsoft Excel developed by AHRQ.

MATERIALS AND METHODS

HSOPSC Questionnaire
HSOPSC was pilot tested, revised and then released by AHRQ in November 2004.6 It was designed to measure 12 dimensions of patient safety culture. The HSOPSC questionnaire contains 42 items which mainly use the 5-point Likert scale ("Strongly disagree" to "Strongly agree") or frequency ("Never" to "Always"). This instrument measures the following dimensions:
(A) Seven unit-level aspects of safety culture
1) Supervisor/manager expectations and actions promoting safety (4 items)
2) Organisational learning – continuous improvement (3 items)
3) Teamwork within unit (4 items)
4) Communication openness (3 items)
5) Feedback and communication about error (3 items)
6) Non-punitive response to error (3 items)
7) Staffing (4 items)
(B) Three hospital-level aspects of safety culture
8) Hospital management support for patient safety (3 items)
9) Teamwork across hospital units (4 items)
10) Hospital handoffs and transitions (4 items)
(C) Two outcome variables
11) Overall perceptions of safety (4 items)
12) Frequency of event reporting (3 items)

The questionnaire was delivered in English, as English is the main language of communication in Sarawak General Hospital.

Study design, sample and data collection
This was a cross-sectional study conducted over a 2-month period (March – April 2018) in SGH which is situated in Kuching, East Malaysia. This is a tertiary hospital with 995 beds and 4568 staff.7 The sample size was estimated to be 500 (95% confidence level, 5% margin of error and estimated response rate of 80%), and simple random sampling was used to select the participants from wide range of staff in Sarawak General Hospital. This paper based, self-administered questionnaire together with the written informed consent was distributed to participants across different departments. Any hospital staff regardless of duration of work in hospital were included in the study. The participation was anonymous, voluntary and confidential. The respondents were informed about the purpose of the study.

Ethical approval was obtained from Medical Research and Ethics Committee, Ministry of Health, Malaysia.

Data analysis
The collected data were entered and analysed using Hospital Data Entry and Analysis Tool that works with Microsoft Excel® developed by AHRQ. Permission to obtain and use this tool was given by Westat, a company which provides technical assistance to AHRQ Survey on Patient Safety Culture. Descriptive statistics were used to summarize the demographic data and scores of patient safety culture dimensions, items, and safety outcomes (patient safety grade and number of events reported). The HSOPSC included both positively and negatively worded items. Percent positive is the percentage of positive responses (i.e. Strongly agree and Agree) to positively worded items or negative responses (i.e Strongly disagree and Disagree) to negatively worded items. Composite-level scores were computed by summation of the items within the composite scales and dividing by the number of items with non-missing values.

RESULTS

Respondents demographic
A total of 500 questionnaires were distributed of which 407 respondents had successfully completed the questionnaire. Therefore, the final response rate for the survey was 81.4%. Majority of the respondents were from the Departments of Medicine (14.7%), Surgery (13%), Emergency (11%) and Obstetrics and Gynaecology (10.8%). Most of the respondents are Staff Nurses (42.5%), Medical Officers (17.2%) and House Officers (12.5%).

Patient safety culture dimensions
In this study, the percentage of positive responses for the 12 patient safety culture dimensions ranged from 18% to 80% and the mean positive responses for all the dimensions were 50.1%, lower than the AHRQ data (64.8%). Generally, the mean positive response rate for all the dimensions were lower than composite data of AHRQ, except for "Organisational Learning – Continuous Improvement", which was also the highest positive response rate (80%), higher than AHRQ data (73%). The result showed that SGH has good opportunity to improve over time as it gains experience and accumulates knowledge. On the other hand, the lowest percentage of positive responses was "Non-punitive response to error" (18%), meaning that most of the staff perceived that they will be punished for medical error. Only 23% of the respondents agree that staffing was adequate for patient care and 24% of the respondents worked more than 60 hours per week. Six respondents commented that high workload and understaffing posed threat to patient safety.

Comparison of safety culture dimensions
Only one of the 12 dimensions has a higher score than the benchmark score from 680 hospitals in the United States; that is, "Organisational learning – continuous improvement". This is comparable to a study conducted in Ethiopia.[8]

Safety culture outcome measures
Two outcomes variables (patient safety grade and events reported in the past 12 months) were measured in this study. Majority of the respondents (63.1%) rated the level of patient safety grade as "acceptable". There were significant differences in the responses to patient safety grade between this study and the AHRQ data. On the other hand, 47.9% of the respondents reported that at least one event over the past 12 months, and the percentage distribution is comparable to AHRQ data. The findings of this study is similar to another study conducted in state of Johor in West Malaysia.[16]

Reliability
Reliability analysis showed satisfactory internal consistency, i.e. Cronbach's alpha ranged from 0.081 to 0.827 for the dimensions (Table II). The "frequency of events reported" had the highest value while the "staffing" dimension had the lowest value. These findings are comparable to another three studies conducted in Ethiopia (0.16-0.75), Turkey (0.43-0.84) and Malaysia (0.49-0.72).[8,15,16]

Patient safety culture items
The positive response rate for each of the items ranged from 9% to 89%. The highest positive response rate of the items was "We are actively doing things to improve patient safety" (89%), while the lowest positive response rate of the item was "Staff worry that mistakes they make are kept in their personnel file" (9%). There were 19 items (of 41 safety culture items) with less than 50% of the average positive score.

DISCUSSION
This is the first study to assess the patient safety culture in SGH. Assessing and promoting safety culture is recognised as a prerequisite step towards improving patient safety.[9] HSOPSC as a patient safety culture assessment tool provides SGH a better understanding of current status of patient safety culture and issues related to patient safety. Overall, the mean positive response rate for the 12 patient safety culture dimensions of the HSOPSC survey was 50.1%, lower than the AHRQ data (64.8%).[12] This study scored higher results when compared with findings from Ethiopia (46.7%)[10] but is lower than Netherlands (52.2%),[4] Palestine (54%)[10] and Taiwan (64%).[11]

It is interesting to observe that "Organizational learning – continuous improvement" is the only dimension that score higher (80%) than the AHRQ data (73%). Since the introduction of Malaysia Patient Safety Goals and guidelines on incident reporting and learning system to all public hospitals throughout Malaysia in 2013, mandatory and voluntary incident reporting for patient safety incidents were made for investigation and root cause analyses.[13] In SGH, dedicated staff from each departments were trained as risk managers and encouraged to report patient safety incidents, conduct root cause analyses and carry out remedial measures in order to improve patient safety. Mistakes and errors encountered provide learning opportunity which leads to positive changes.

Staffing is a common patient safety concern in different countries[8,11,12] and the percentage of positive response for this item (23%) is significantly lower than AHRQ data (54%). The hospital staff feel that allocation of staff is inadequate to meet the rising workload and to ensure patient safety. 87% of the respondents work more than 40 hours per week. Prolonged working hours lead to staff fatigue and increase in the likelihood of medical error and adverse patient safety events.[14] In 2017, the Health Policy and Planning Unit, Ministry of Health Malaysia conducted a Workload Indicator for Staffing Need (WISN) workshop in the hospital to assess the human resource need in comparison to the current workload.

Another area of concern is "non-punitive response to error", which has the lowest percentage of positive response among the twelve dimensions of patient safety culture in this study. Majority of the hospital staff feel that their mistakes are held against them and the mistakes are kept in their personnel file. Although a significant number of respondents perceived that medical error is followed by punitive actions, yet about half of them reported at least one event in the past 12 months. It is imperative that the hospital needs to create an environment that support just culture and reporting error without fear of punishment in order to improve patient safety.

"Handoffs and transition of care" represents another area of weakness in this study. This might be due to the complexity nature of a tertiary hospital with growing number of sub-specialties coupled with rising workload. Further research is needed by the hospitals to explore the factors influencing the communication between hospital staff as well as identification of risk factors contributing to communication failure and medical error.

Other important areas for patient safety in SGH include management support and learning from mistakes. Both are potential areas of improvement with senior leadership encouraging feedback and communication about error, thereby improving the frequency of incident reporting. Incident reporting has a key role in enhancing patient safety by learning from mistakes and the enhanced changes in the system to reduce the likelihood of injury to future patients.

LIMITATIONS
Although English the medium of learning in Malaysia in many medical schools and health colleges, the language of communication among certain staff are Malay, Mandarin and other native languages, which may impact on the understanding of the questionnaire.

CONCLUSION
This study provides SGH a better understanding of staff perception and culture towards patient safety. In general, the level of patient safety culture in is acceptable and most of the scores related to dimensions were lower than benchmark score. Several dimensions were identified as area of weakness and providing an opportunity for improvements. SGH as a learning organisation should also address the issues of staffing to meet the rising workload. Communication between healthcare providers is another major challenges faced by a tertiary hospital with complex health system. Staff training is required to improve handoff communication and transition. Senior management and middle managers must be committed in developing a non-punitive culture in response to error, thus encouraging reporting and learning from error to prevent recurrence. This survey should be repeated to monitor the progress of patient safety culture after implementation of interventions to the areas of weakness.

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