Original Article :

Patients' safety perception among undergraduate medical students

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Abstract

Background & Aims:

Patient safety is a fundamental principle of health care. Lack of concern towards patients' safety can lead to various medical errors and increase the time of hospitalization. The aim of this study was to assess the patient's safety perception among undergraduate medical students.

Methods:

A Cross sectional self-administered questionnaire survey was conducted among random 48 students (male and female) in College of Medicine, Majmaah University in February to May 2020. Self-reported questionnaire was used for data collection. Data will be collected using a questionnaire 'APSQIII' on 7-point Likert scale.

Results:

This study was conducted in College of Medicine, Majmaah University from the month of February to May 2020, among 48 participants there were 36 (75%) male and 12 (25%) female. Among total participants maximum were 20 (41.7%) in 4th level followed by 5th level 15 (31.3%), 6th level 11 (22.9%), and 3rd level 2 (4.2%). On comparison of attitude and knowledge scores between participants of different levels of study, if was found that the higher grades (5th & 6th) had better knowledge scores compared to early phases of medical college (3rd & 4th) and was found to be statistically significant with p value (0.028).

Conclusion:

According to the findings, medical students' opinions of patient safety can be used as a tool and training guide in medical school. Institutions should pay more attention to concerns like medical error causation and reporting. Shift doctors/nurses must be based on safety measures and also working hours. This survey found that knowing about patient safety issues before qualifying will help all respondents become more effective doctors.

Key Words:

Patient safety, Awareness, Medical students, Health care, Prevention

Introduction:

Patient safety is a cornerstone of healthcare delivery. Patient safety can be defined as the prevention of errors and negative impacts on patients linked with health treatment[1]. As there is significant developments in the medical care of the patients, it not just bought a light to the medical field, also considered as a major harm to the industry of health[2]. For instance, 44000 to 99000 deaths each year was estimated by US Institute of Medicine (IOM), resulting preventable medical errors[3]. Additionally international concern for adverse events as been shown by many other studies[4-5]. Lack of concern towards patients' safety can lead to various medical errors and increase the time of hospitalization, has been proven by several studies conducted in various countries[5-6]. Hence, the utmost importance and concern is to promote the patient safety. However, different initiatives targeted only the group of health professionals which includes doctors, managers etc., whereas less attention has been given to the next generation of medical professionals i.e., medical students. It is important for medical students to have a thorough knowledge and understanding on patient safety which will clearly built in a positive attitude for better care and safety development throughout their service[7]. Medical students need to know how important it is to understand the system affects the quality and safety of healthcare towards the patient, and there is a need to prepare themselves to practice safe care. The World Health Organization (WHO) in order to meet the future challenges and help them develop safe care for patients has created an advanced Patient Safety Curriculum Guide for the medical students[8]. Lately, in Saudi Arabia, an extra tropic of patient safety has been added in their curriculum, so that the particular topic or content has been adapted by each of them, so as to improve and implement the right practice and attitude towards patient care. The study aimed to investigate the knowledge and attitudes regarding patient safety principles among undergraduate medical students because there was a lack of relevant local published data[9]. Students at four medical schools were assessed for their perceptions and cultures of patient safety, with varied goals such as addressing students, transforming patient safety, and meeting educational needs[10]. The goal of this study was to see if there was a difference in patient safety awareness levels based on gender and prior experience with medical errors among undergraduate medical students at Majmaah College of Medicine.

Methods:

A Cross sectional self-administered questionnaire survey was conducted among random 48 students (male and female) in College of Medicine, Majmaah University from February to May 2020. This study was approved by institutional ethical committee.

The questionnaire was well structured to measure self-rating of attitudes, knowledge and behavior in relation to patient safety. The questionnaire includes 3 sections i.e., sex ratio was included in first section, secondly the level of knowledge and factors Influencing general knowledge on patient safety as well as their perception with importance of culture issue, error management, problem solving were major point to include patient safety in curriculum.

Inclusion Criteria:

Participants who studied Undergraduate Medical Students in Majmaah College of Medicine.

Exclusion Criteria:

Participant who did not gave the consent.

Data collection:

A consistent and 2 trained research assistant's availability was ensured to help the principal investigator in data collection. Self-reported questionnaire addressed different domains like patient's safety, teamwork, error from medical students and case management to address the behavioral intent about patients' safety were used for data collection. The data was gathered using a 7-point Likert scale questionnaire called the APSQIII. The following domains were investigated: Patient safety attitudes, patient safety training received, confidence in reporting errors, error inevitability, professional incompetence as an error cause, disclosure responsibility, team functioning, patient involvement to reduce error, importance of patient safety training, and situational judgment. A higher score meant that the person had a more positive reaction to the subject at hand. This survey was developed to gauge medical students' opinions on safety culture[11].

Eight questions were reverse coded. Survey was anonymous. Higher scores indicated more affirmative responses to the concerned factors. The students were informed about the study and received instruction on how to fill out the questionnaire completely and truthfully. Medical students were told to respond to the statement using a seven-point grade scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Data analysis:

Data was retrieved on an excel file and analyzed using IBM SPSS Statistics Ver-

sion 24. Mean & S.D was estimated for quantitative variables. Frequencies and percentages were be utilized for qualitative variables. Student t test was applied to observe associations between qualitative variables. A p-value of <0.05 will be considered statistically significant.

Results:

In total, 48 participants participated in this Cross-sectional self-administered questionnaire. Survey was conducted in College of Medicine, Majmaah University from the month of February to May 2020, among 48 participants there were 36 (75%) male and 12 (25%) female (Figure 1).

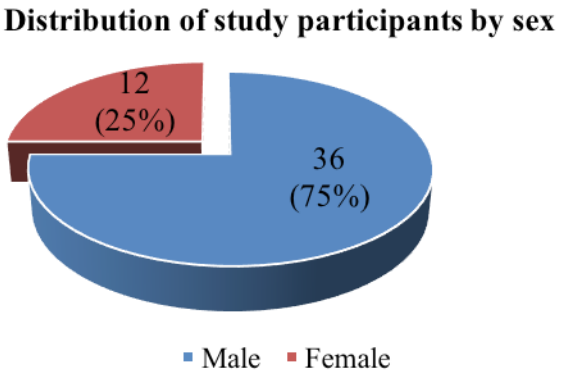


Figure 1: Distribution of study participants by gender

Among total participants maximum were 20 (41.7%) in 4th level followed by 5th level 15 (31.3%), 6th level 11 (22.9%) and 3rd level 2 (4.2%) shown in table 1.

The minimum and maximum mean score of medical student attitude level across different factors were 2.8±2.0 and 6.3±1.3 respectively from the seven Likert scale. None of the participants strongly disagreed, and 12 (25.0%) were strongly agreed reported to understand the causes of medical errors in training period with mean score of 5.3±1.3. Most medical errors result from careless nurses were observed with means score 3.0±2.0. Majority, 15 (31.3%) participants were strongly disagreed, whereas 2 (4.2%) agreed and 5 (10.4%) of the participants strongly agreed. 5.6±1.8 mean score was reported for the question on shorter shifts for doctors will reduce medical errors 3 (6.3%) were strongly disagreed followed by 1 (2.1%) disagreed, and 24 (50.0%) strongly agreed. Maximum participants were positive to Human error is inevitable with mean score of 4.7±1.8. (Figure 2a)

Table 1: Distribution of study participants by level of study:

Level	Frequency	Percent
3rd	2	4.2
4th	20	41.7
5th	15	31.3
6th	11	22.9
Total	48	100

With regards to attitude of the students on medical errors resulting from carelessness of doctors, 5 (10.4%), 7 (14.6%), 4 (8.3%), 16 (33.3%), 6 (12.5%), 1 (2.1%) and 9 (18.8%) were reported strongly disagreed, disagreed, partially disagreed, neutral, partially agreed, agreed, and strongly agreed respectively (Figure 2b). Medical errors are a sign of incompetence were observed

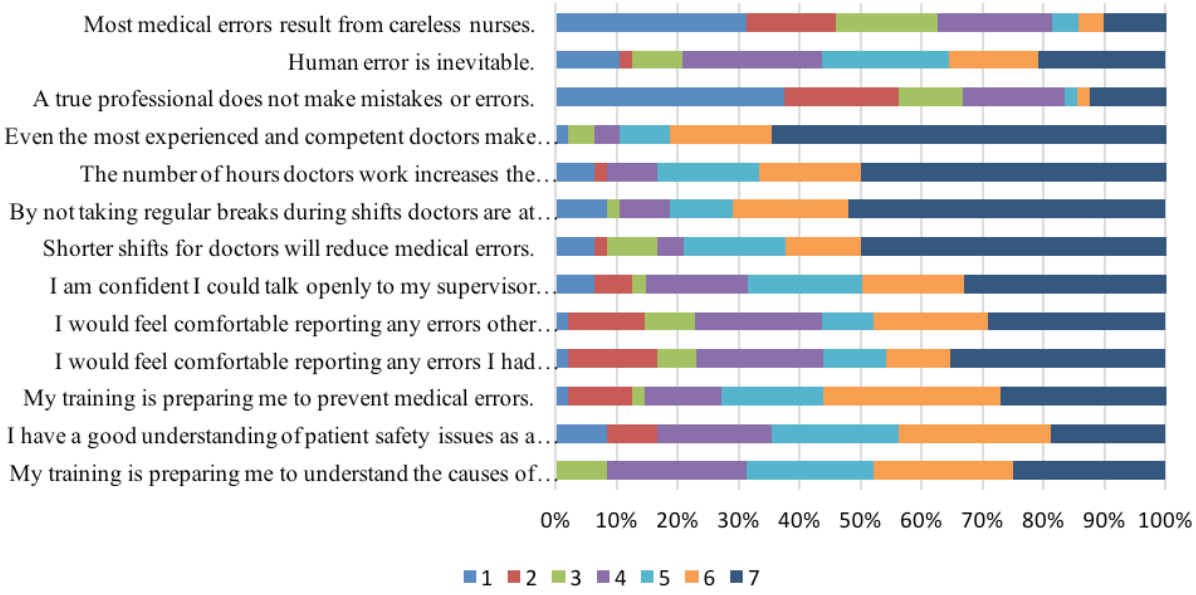


Figure 2a: Attitude levels of study participants across different factors

maximum participants were disagreed with mean score of 3.6±1.8. Maximum participants with mean score 5.9±1.7 were positive or agreed to All medical errors should be reported. Mean score 6.0±1.2 with none of the participants partially disagreed, disagreed and strongly disagreed to all respondent learning about patient safety issues before I qualify will enable me to become a more effective doctor. Most people agreed, strongly agreed, and agreed to some of the things they said. Teaching teamwork skills will cut down on the number of medical errors reported with a mean score of 5.8±1.8 (Figure 2b).

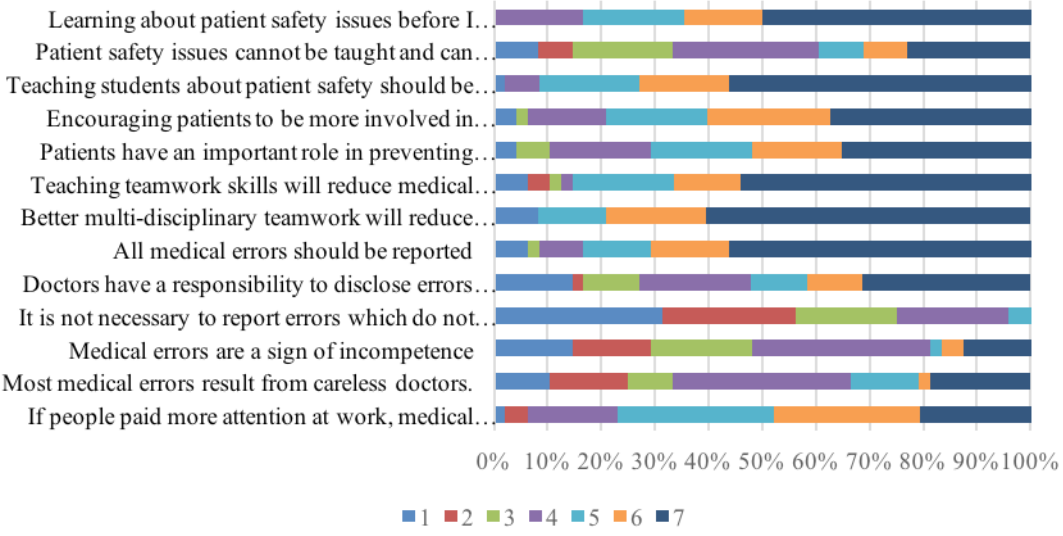


Figure 2b: Attitude levels of study participants across different factors

The majority of students agreed that fostering interdisciplinary cooperation would help to reduce medical errors. Most of the respondent informed that patients have an important role in preventing medical errors with mean score 5.4±1.6 (Figure 2b). Figure 3 Represents Knowledge levels of study participants across different factors perception, among undergraduate medical students.

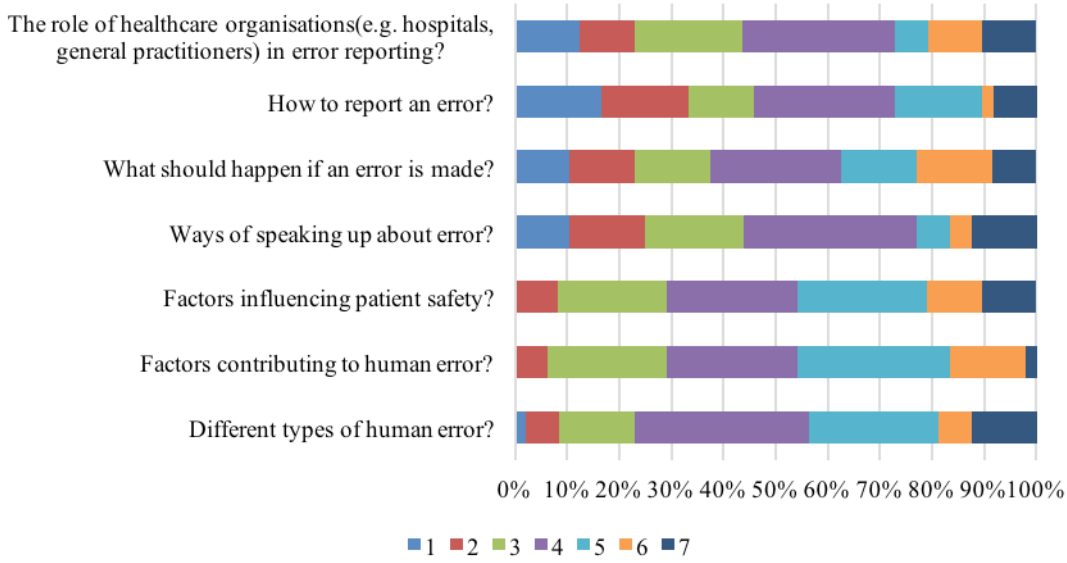


Figure 3: Knowledge levels of study participants across different factors

Different type of human error was observed with mean score 4.4±1.4. None of the participant were strongly disagreed, 3 (6.3%) disagreed, 11 (22.9%) partially disagreed, 12 (25.0%) neutral, 14 (29.2) partially agreed 7 (14.6%) agreed and 1 (2.1%) strongly agreed equally were reported to factors contributing to human error in patients' safety. None of the respondent were strongly disagreed, 4 (8.3%) and 10 (20.8%) respondents were disagreed and partially disagreed, 12 (25.0%) were neutral, 12 (25.0%) were partially agreed, 5 (10.4%) agreed and 5 (10.4%) strongly agreed were reported factors influencing patient safety. Mean score 3.5±1.8 were observed how to report an error. 4.0±1.8 mean score to happen if an error is made were reported. 3.8±1.8 were observed the role of healthcare organizations in error reporting. The comparison of attitude and knowledge scores among male and female participants reported, t-value (-0.062), p-value (0.951) and t-value (1.205), p-value (0.234) respectively (Table 2).

The comparison of attitude and knowledge score of different levels of study, among the participants reported, t-value (-1.301), p-value (0.200) and t-value (2.265), p-value (0.028) respectively (Table 3).

Table 2: Comparison of attitude and Knowledge scores between males and females

Average Scores	Sex	N	Mean	Std. Deviation	t-value	P-value
Attitude	Male	36	4.99	0.94	-0.062	0.951
	Female	12	5	0.34		
	Total	48	4.99	0.82		
Knowledge	Male	36	4.15	1.35	1.205	0.234
	Female	12	3.62	1.21		
	Total	48	4.01	1.32		

Table 3: Comparison of attitude and Knowledge scores between participants of different level of study

Average Scores	Level of Study	N	Mean	Std. Deviation	t-value	P-value
Attitude	3rd & 4th	22	4.82	0.7	-1.301	0.2
	5th & 6th	26	5.13	0.9		
	Total	48	4.99	0.82		
Knowledge	3rd & 4th	22	3.56	1.15	-2.265	0.028
	5th & 6th	26	4.4	1.36		
	Total	48	4.01	1.32		

Discussion:

Quality education and training are critical to achieving this goal[12]. Medical students' preparation at medical school, as well as their understandings of patient safety, have a strong influence on their attitudes toward patient safety and their behaviors in this area[13]. As a result, assessing their opinions of crucial aspects of patient safety, as done in this study, provides a chance to improve their practice and future medical education. Which can also be used by superiors at the medical college for self-assessment and real-time evaluation in order to promote patient safety.

While negative attitude was reported by the students, neutral attitudes were found in the domains of professional ineptitude as a reason for error and confidence in reporting errors. The most of students in the current study agreed with the following statements: 'my training is preparing me to understand the causes of medical errors'. None of the participants strongly disagreed, disagreed and 4 (8.3%) were partially disagreed 11 (22.9%) were neutral and remaining 10 (20.8%) were partially agreed, 11 (22.9%) were agreed and 12 (25.0%) were strongly agreed with mean score of 5.3±1.3 and 'I have a good understanding of patient safety issues because of my undergraduate medical training' 4 (8.3%) strongly disagreed, 4 (8.3%) disagreed, none of were respondent were partially disagreed, 9 (18.8%) neutral, 10 (20.8%) partially agreed, 12 (25.0%)

agreed and 9 (18.8%) strongly agreed. This finding shows that medical students have higher expectations for patient safety education, which is consistent with Madigosky et al[14] study. The respondent's attitudes toward patient safety education were positive. In his study, Leung specified in his study that majority of the participant's attitude towards patient safety education was positive, respondents encouraged the necessity towards the need and requirement of time, training skills and educational objectives[15].

The noticeable findings of the study were: Insufficient information on patient safety, (83.33%) respondent informed that it was due to doctor's shift changing, (91.66%), which was caused by due to working hours and also true professional make error I.e. (62.5%). Medical errors unavoidably, as human factor plays a vital role which leads to failure in providing proper care to patient, was stated by most of the respondents participated in the study. This illustrates a fundamental misunderstanding regarding the nature and types of human error. The findings on the causes of errors and the quality of care were consistent with the findings of Leung et al[15], Yoshikawa et al[16], and Abdi et al[17], with the exception of the finding on the inevitability of errors. The results were similar to Yoshikawa's findings in the domain of error management. Which explains that nurses and midwifery have a better understanding the patient safety when compared with the medical student's perceptions, as they lack educational information on the particular topic of safety care, which instead is explained by the facility of nursing and midwifery as a subject. Yoshikawa discovered no significant differences in patient safety ratings across nursing/midwifery and medical students16. According to Kohestani, nursing students make 75 % of errors.[18] The error report found in the present study by doctors, nurses, students, and human inadvisable were 66%, 37% and 79%, respectively. When compared with the level of knowledge among the nursing students and medical students, nurses had a good knowledge and dedication towards the patient safety than the medical students. Leung's study appeared to have the same division in patient safety[15]. The results of this study are remains consistent with those of Abdi related to direct and detailed questions[17]. In this study, 70% different types of human error were caused. Nursing and midwifery students, as well as half of respondents in Khalili's poll, were aware of connected state authorities that frame and supervise patient safety actions throughout the country[19]. In this study also, knowledge level of nursing/midwifery students Patient Safety in Medical Education.

In Kerfoot study showed discipline of the student, varied the knowledge of patient safety20. Positive sentiments about patient safety education were expressed by the respondents. According to Leung's research, the majority of respondents stressed the importance of patient safety education, required training skills, and time allocation in relevant courses[14]. Bowman has stated that students' motivation to learn about patient safety is essential[21]. Patey noticed a lack of appropriate awareness about patient safety among the pupils[22]. Abdi also has reported decreased knowledge and negative attitude of the students towards patient safety in pre-intervention phase[17]. About one quarter of them told that the expertise doctors do not make any mistakes, whereas about one third of the students did not accept the inevitability of errors and about, which directly reflects a clear misunderstanding of humans by nature.[14] Not knowing the consequences and effects on making errors leads failure to report the errors caused which will further lead to lack of awareness. The pitfalls of the system and the processes of treatment and care can be reduced by employing an effective strategy following the occurrence of an error. One-third of respondents were neutral and had a lack of proper safe care induction, indicating the medicine culture and reflecting their confusion. Errors in management, as well as statutory formal patient safety training. In present study of knowledge for contributing human error is 70%, Influencing about patient safety is also 70%, way of speaking about error is 54% and role of health care organization in error reporting i.e., 56%. This study found that learning about patient safety issues before qualifying would help to become a more effective doctor. These findings are in line with those of Nabilou et al, who compared the perceptions, knowledge, and attitudes of medical and nursing students in respect to patient safety and found that nursing students scored much higher on perception than medical students[23]. Patient safety, on the other side, will only improve if organizational and professional cultures recognize the inevitability of error and the need of reporting and learning, according to Edgman-Levitan and Lorig[24,25].

Limitations of this study was that participants were more likely to be interested in patient safety and quality improvement. Small sample size and convenience sampling was another limitation of this study. We believe that frequent surveys of medical students using robust sample approaches will provide a clearer picture of the evolving state of patient safety perception.

Conclusion:

Finally, our research looked into medical

students' perspectives of patient safety in Saudi Arabia. The outcomes of the study imply that medical students' perceptions of patient safety might be used as a tool and teaching guide in medical school. Institutions should pay more attention to concerns like medical error causation and reporting. Shift doctors and nurses must be selected based on both safety and working hours. Doctors' and nurses' care has an impact on safety measures, and this study found that learning about patient safety issues before qualifying can help them become more effective doctors.

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