MEDICAL EDUCATION (ORIGINAL ARTICLES)

PERCEPTIONS OF MEDICAL STUDENTS IN PREVENTING MEDICAL ERRORS AND PATIENT SAFETY

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ABSTRACT

Objective: To evaluate under graduate medical students' perceptions on medical errors and patient safety.

Study Design: Descriptive cross sectional study.

Place and Duration of Study: Army Medical College from Dec 2014 to Jan 2015.

Material and Methods: The 4x simulation role play patient safety sessions of 15 minutes each took place in the lecture hall conducted on fourth-year medical students selected during a whole-class academic sessions in Dec 2014 and Jan 2015. Participants in these sessions were given clinical scenario after taking the informed written consent. After the role play, students were given the same questionnaire. Responses to each item were added using a like rt scale.

Results: Most of the students agreed after the role play sessions that they had a good understanding of common medical errors.

Conclusion: Medical students in Army Medical College had knowledge of medical errors as being a barrier between what is thought better and what is being available.

Keywords: Healthcare, Medical errors, Patient safety, Role play.

INTRODUCTION

During the recent years patient safety has become the base of good patient care. Patient safety awareness can harm us as well as heal us[1]. There is now awareness of the problem of medical harm and a determination to handle it[2]. Patient safety has been on the priority of many countries but the teaching and training of medical students in patient safety was first formally recognised in year 2000 after the publication of report 'To Err is Human' which revealed that only in USA more than 44,000 patients die each year due to issues related to patient safety[3,4]. Reports have been published on the requirements of patient safety awareness[5]. Undergraduate medical students have knowledge about the absence of patient safety education[6]. In 2007 the Association for Medical Education in Europe recommended that patient safety education should be part of the whole undergraduate medical and dental curriculum[7]. Knowledge of patient safety included definition and understanding of medical error, types of adverse effects in health care, error classification, contributing factors to medical errors and mechanisms for learning from medical errors[8]. Role-play is an important method used to develop communication skills in different courses and with learners of different backgrounds[9]. There are different advanced methodologies of using role-play, involving interactions between two individuals or among larger groups.

MATERIAL AND METHODS

Using non probability sampling 129 students of mixed genders were selected. We used role-playing in an effort to introduce knowledge of patient safety. The mock four patient safety session of 15 minutes each took place in the lecture hall conducted on fourth-year medical students selected during a whole-class academic sessions in Dec 2014 and Jan 2015. Participants in the class were given brief clinical scenarios (table-1). Before these sessions, a questionnaire was distributed to the entire class to assess their responses to attitude items of the questionnaire on patient safety and medical errors. The questionnaire was adapted

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from that used in a study previously reported by Madigosky et al[10]. After the role play, students were given the same questionnaire to evaluate changes in their perception regarding the patient safety and medical errors after taking the informed written consent. The 12 items are developed to evaluate the students'

RESULTS

Presimulation questionnaires of the 129 medical students who returned the presimulation questionnaires were 129, 10 volunteered to participate in the role play sessions. A total of 10.9% strongly agreed and 59% disagreed that medical errors were rare. A

Table-1: Student responses to Section 1 (attitude items) of the pre simulation questionnaire on patient safety (n=129).

Item no	Attitude items	% age of Students				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Medical errors are rare	10.1	59.7	8.5	10.9	10.9
2.	Everyone can make mistakes	2.3	2.3	2.3	35.7	57.4
3.	Some errors are preventable	0.8	1.6	3.1	53.5	41.1
4.	The causes of medical error are complex	0.8	27.9	28.7	31.0	11.6
5.	It is necessary to correct the system to prevent medical errors	1.6	3.1	7.0	45.0	43.4
6.	If we obey the traditional customs of organization in everyday life, we can reduce medical errors.	2.3	7.0	20.9	49.6	20.2
7.	Serious systematic flaws exist in the case of medical errors.	1.6	8.5	28.7	42.6	18.6
8.	If we improve an individual's attention or capacity, we can prevent medical errors.	1.6	3.9	9.3	53.5	31.8
9.	Medical errors are caused by lack of individual capacity or attention.	2.3	10.1	19.4	48.1	20.2
10.	I can report my mistake to senior doctor when I commit a medical error.	5.4	7.8	17.8	45.7	23.3
11.	I can speak up about an error of my colleagues.	3.1	21.7	20.2	46.5	8.5
12.	I can speak up about an error of a senior doctor.	10.1	14	24.8	43.4	7.8

perceptions on the causes and handling of medical mishappenings. Response to each item was graded using a 5-point scale (1=strongly disagree/very poor, 2=disagree/poor, 3=neutral/fair, 4=agree/good, 5=strongly agree/very good).

Data analysis procedure

Data was analyzed in SPSS version 21. Descriptive statistics was applied for qualitative variables, frequency and percentages were used. Marginal homogeneity test was applied for pre and post comparison of student responses. A *p*-value <0.05 considered to be significant.

total of 50% of the participants agreed that everyone can make mistakes and some errors are preventable. Less than 11% strongly agreed. The causes of medical error are complex. Equal percentage of class had the same perceptions regarding the complex nature of the medical errors (43.0%). It is necessary to correct the system to prevent medical errors. (Table-1).

A total of 48% agreed that if we obey the traditional customs of organization in everyday life, we can reduce medical errors. While 18% strongly agreed that serious systematic flaws exist in the case of medical errors 31% strongly

agreed that if we improve an individual's attention or capacity, we can prevent medical errors. A total of 53 %medical errors are caused by lack of individual capacity or attention.

A total of 45% agreed; "I can report my mistake to senior doctor when I commit a

There were 129 postsimulation questionnaires of the participants, 100% nonparticipants returned the post simulation questionnaires. A total of 81% strongly agreed and 0% disagreed that medical errors are rare . Sixty one percent of the participants agreed that

Table-2: Student responses to Section 1 (attitude items) of the post simulation questionnaire on patient safety (n=129).

Item no	Attitude items	% age of Students				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Medical errors are rare	0	0	7.8	10.1	82.2
2.	Everyone can make mistakes	0	0	1.6	37.2	61.2
3.	Some errors are preventable	0	0	3.1	53.5	43.4
4.	The causes of medical error are complex	0	0	29.5	31.8	38.8
5.	It is necessary to correct the system to prevent medical errors	0	0	5.4	45.7	48.8
6.	If we obey the traditional customs of organization in everyday life, we can reduce medical errors.	0	0	20.9	50.4	28.7
7.	Serious systematic flaws exist in the case of medical errors.	0	0	27.9	42.6	29.5
8.	If we improve an individual's attention or capacity, we can prevent medical medical errors.	0	0	10.9	51.9	37.2
9.	Medical errors are caused by lack of individual capacity or attention.	0	0	19.4	48.8	31.0
10.	I can report my mistake to senior doctor when I commit a medical error.	0	0	19.4	45.0	35.7
11.	I can speak up about an error of my colleagues.	0	0	21.7	45.7	32.6
12.	I can speak up about an error of a senior doctor.	0	0	24.8	42.6	32.6

Table-3: Pre and Post comparison of students responses on medical errors and patient safety (n=129).

Item No	Attitude Items	*p*-value
1	Medical errors are rare	<0.001
2	Everyone can make mistakes	.018
3	Some errors are preventable	.096
4	The cause of medical errors are complex	<0.001
5	It is necessary to correct the system to prevent medical errors	.010
6	If we obey the traditional customs of organization in everyday life, we can reduce medical errors	.001
7	Serious systematic flaws exist in the case of medical errors.	<0.001

medical error."

While 8% strongly agreed; "I can speak up about an error of my colleagues" and 43% strongly agreed; "I can speak up about an error of a senior doctor."

everyone can make mistakes and some errors are preventable while 43% strongly agreed that the causes of medical error are complex. Equal percentage of class had the same perceptions

regarding the complex nature of the medical errors (38.0%). (Table-2).

Forty nine percent agreed that if we obey the traditional customs of organization in everyday life, we can reduce medical errors.

While 42% agreed that serious systematic flaws exist in the case of medical errors and 51% agreed that if we improve an individual's attention or capacity, we can prevent medical errors.

A total of 48% agreed that medical errors are caused by lack of individual capacity or attention and 45% agreed; "I can report my mistake to senior doctor when I commit a medical error."

While 45% strongly agreed; "I can speak up about an error of my colleagues." And 42% strongly agreed I can speak up about an error of a senior doctor.

Most of the students (91%) agreed or strongly agreed that they had a good understanding of what was involved in the process of medical errors and that they had a good understanding of preventive measures of medical errors. Results from this sample (significance per question) indicate that before the sessions students reported "low" or "average" understanding of patient safety issues and knowledge of actions to take if they witness an error.. Student responses to Section 1 (attitude items) of the pre simulation and post simulation questionnaire on patient safety were compared and found statistically significant on individual components. As the *p* value in table 3 indicates, the scores on the two knowledge scales significantly improved.

DISCUSSION

The 12 items in the first section were on distribution of statements which may or may not be agreement with the current teachings on patient safety. The first four 'Attitude items' reflect the causes of medical errors . They were designed to assess the students' perceptions on the causes and management of medical errors. The majority of the students supported that medical errors cannot be avoided and that what is considered as best care may not always be provided. Students' written comments stand as

proof of the overall impact of the study in renovating and improving their understanding of the principles that confirm prevention of medical errors. It was not aimed at evaluating the students' factual knowledge regarding patient safety. The interest and consistency of the students towards patient safety was encouraging. To ensure meeting of all parameters of patient safety, a step by step plan is needed. Increase in reporting should be the first step to gather more information for analysis and recommendations for change. The students who returned questionnaires, a vast majority of students reported improvement in their understanding of the processes and knowledge of medical errors. All the participants agreed or strongly agreed that role-play[11] was an effective measure in aiding them to understand the mechanism of medical errors and the implications of currently practiced preventive measures. This indicates that the mock sessions proved helpful in a manner different than the lectures alone in reinforcing the student understanding of patient safety processes[12].

Students rarely spend a period longer than a month in any one clinical setting, and thus may always have a tendency to feel like an outsider[13]. The number of students who did not realize the need to correct the medical errors without harm also stated a lack of awareness of number of the events and their impact on healthcare.

A key aspect of any type of training is the level of degree of similarity that is required[15]. An example of a national effort that uses simulation to promote patient safety can be found in the Israel Centre for Medical Simulation (MSR)[16].

CONCLUSION

Medical students at Army medical college were aware of medical errors being an inevitable barrier between what is considered 'good care' and what is actually being practiced.

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CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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