

Patient safety from the perspective of trainees: a cross sectional study from Iran

Ali Akbar Rohani(MD)¹, Zahra Bameri(MD)², Habibeh Ahmadipour(MD)^{3*}

¹Department of Community and Family Medicine, School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

²School of Medicine, Kerman University of Medical Sciences, Kerman, Iran.

³Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman.

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p> <hr/> <p><i>Article History:</i> Received: 11-Apr-2019 Accepted: 15-Dec-2019</p> <hr/> <p><i>Key words:</i> Medical error, Patient safety, Internship, Residency</p>	<p>Introduction: Due to the importance of patient safety, it is necessary that health care providers have sufficient knowledge and positive attitude toward this issue. Therefore, current study aimed to evaluate the patient safety viewpoint among trainees in internship and residency programs in Kerman University of Medical Sciences (KUMS).</p> <p>Materials and Methods: A cross-sectional study carried out on 275 trainees in internship and residency in KUMS, 2018. The data collection tool was the Persian version of World Health Organization, Patient Safety questionnaire which evaluates medical students' knowledge (7 items) and attitude (35 items) toward patient safety. The minimum and maximum score was 7 and 35 for knowledge and 30 and 150 for attitude section. Data analyzed by SPSS 19 using T-test, ANOVA, and multiple linear regressions.</p> <p>Results: The mean score of participants' knowledge was 19.63 which were significantly lower than the considered average. The mean score of participants' attitude was 97.33 which was considered higher than the average. Residents had higher knowledge and attitude scores compared to interns. A significant relationship was found between the knowledge score and age and the time spent in the current educational level.</p> <p>Conclusion: Our study showed that knowledge and attitude of interns and residents was almost moderate toward patient safety. The residents had a higher attitude and knowledge than interns. This is probably due to more work experience and training courses provided at the beginning of the residency program. Therefore, it is imperative that patient safety topics be considered in medical curriculum planning.</p>
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Introduction

Unsafe medical care is a global challenge and causes significant morbidity and mortality around the world. Although, most of the evidence about unsafe medical care is from the developed nations, it seems, in the developing countries the same or even worse conditions exist (1). The related literatures shown significant numbers of patients are harmed due to unsafe health

care which results in additional medical costs, increased length of stay and, permanent injury or even death (2).

It is estimated that approximately 42.7 million adverse events (AEs) happened in the world annually which lead to 23 million disability adjusted life years (DALYs) lost per year. Most of the AEs are occurred in low and middle income countries (3).

*Correspondence Author: Social Determinants of Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran. E-mail address: ahmadipour@kmu.ac.ir

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Few studies in Iran evaluated the AEs due to unsafe medical care and most of them are focused on inpatient cares. The Incidence of AEs, in our country, has been reported 7.3 % in the study done by Akbari and colleagues in 2012(4).

One of the most important suggested strategies to prevent AEs is the presence of skilled health care providers who recognize patient safety as their priority (5). Patient safety defined as the existence of a strong health care system and skilled health care providers to prevent AEs and to protect the patient from injury or harm while receives health/medical care(6).

Given the importance of this issue, the health systems need to be sure that there is enough awareness and positive attitude toward patient safety among health care personnel, especially among trainees in internship and residency programs as the majority of diagnosis and treatment processes done by these trainees in the educational hospitals (7). According to our literature review, there are several tools for evaluating patient safety culture, such as the Safety Attitudes Questionnaire (SAQ), Hospital Survey on Patient Safety Culture (HSOPSC), Culture of Safety Survey (CSS), Safety Climate Survey (SCS), and Patient Safety Cultures in Health Care Organizations (PSCHO). Each of these tools measures different aspects of the patient safety and some of them have been evaluated for their psychometric properties in Iran (8-11).

In recent years, a questionnaire developed by the World Health Organization (WHO) to evaluate medical students' knowledge on patient safety and medical error issues and their viewpoint toward the management of patient safety in the healthcare system (12). According to our reviews, until now, the questionnaire has not been used in our country and the psychometric properties of the Persian version of the questionnaire not been evaluated.

Therefore, current study had two aims. The first was to assess the psychometric attributes of the Persian version of the instrument and the second was to use the tool for investigating the patient safety viewpoint among trainees in internship and residency programs at Kerman University of Medical Sciences (KUMS), 2018.

Materials and Methods

A descriptive – analytic cross-sectional study carried out on two hundred and seventy five trainees at Kerman University of Medical Sciences (KUMS), Kerman, Iran. All trainees who were in the internship and residency programs at KUMS between May and August 2018 selected by a census. The inclusion criteria were studying in the internship and residency programs during the study period and having informed consent for participation. The questionnaires with more than 10% unanswered questions were excluded.

A two-section, self-administered questionnaire was used to collect the data. The first part included demographic data, such as age, gender, and educational level (internship or residency). The second part was the Persian version of the WHO Patient Safety questionnaire. The questionnaire evaluates medical students' knowledge and attitude toward patient safety and medical errors. There are seven questions in the knowledge section which are graded according to a five-point Likert scale from 1 (low) to 5 (high). In the second section, the attitude of the trainees evaluated by 30 questions in different dimensions, including safety of the health care system, Personal Influence over Safety, Personal Attitudes to Patient Safety, and Safety at the Workplace with six, seven, four, nine questions, respectively. According to our expert panel four questions added to the second part. The response to each question was about five-point Likert scale which 1 assigned to strongly disagree and 5 to strongly agree. Therefore, the minimum and maximum score was 7 and 35 for knowledge and 30 and 150 for attitude section, respectively (12).

Forward and backward method used to translate the questionnaire into Persian and then adapted culturally. The internal consistency of the questionnaire was 0.78 using Cronbach's Alfa coefficient. The test-retest reliability of the instrument was evaluated using a pilot study in which 30 medical students completed the questionnaire twice in two- week intervals. They entered the sample size later. The intra class correlation coefficient (ICC) was determined 0.80. Face and content validity

of the tool was confirmed by an expert panel. Data analyzed by SPSS version 19 (SPSS Inc., Chicago, IL, USA) using one sample and independent T-test, one way analysis of variance (ANOVA), Pearson and multiple linear regressions. The significant level was set at 0.05.

The study approved by the Ethics Committee at KUMS (Ethics approval code: IR. KMU. REC.94.34). the trainees were participated in the study anonymously and voluntarily. They were assured the data would be employed only for the study purposes. Eight to ten minutes were required for the trainees to complete the questionnaire.

Results

Of 275 participants, 161 (58.5%) were female, 144 (52.4%) single, and 118 (42.9%) resident with the mean age of 28.14± 4.42 years. The mean score of the trainees' knowledge and attitude were 19.63 ± 4.6 and 97.33 ±7.5, respectively. Table one shows the participants' attitude scores according to its subscales (safety of the health care system, Personal Influence over Safety, Personal Attitudes to Patient Safety, Safety in the workplace).According to one sample t-

test, the knowledge score was significantly lower than the considered average (21) (P=0.001) while, the attitude score was significantly higher than the considered average (90). (P=0.001) The mean score of knowledge (P = 0.001) and attitude (P=0.02) were significantly lower in the interns compared to the residents. Among the subscales of attitude, the score of the safety at workplaces was significantly higher in the residents. (P = 0.002), other subscales had no significant difference, according to the educational level of the trainees (P>0.05).

With respect to demographic data, only female participants had more positive attitudes compared to the males (P= 0.04). There was no significant difference in the other study variables. There was a significant relationship between the knowledge score and age and the time spent in the current educational level.

In linear regression, only educational level significantly predicted participants' knowledge, accordingly, the interns had an average of 2 times less knowledge than the residents. (Unstandardized Coefficients= (-) 0.21, P=0.02, CI 95 %=(-) 3.58- (-) 0.36) None of the variables could significantly predict the attitude of the participants.

Table 1: The statistical measures of the participants' attitude scores according to its subscales.

	Safety of the health care system	Personal Influence over Safety	Personal Attitudes to Patient Safety	Safety in the Workplace	Total
Mean	18.99	21.95	16.34	40.88	97.33
Std. Deviation	2.56	3.15	2.47	5.01	7.59
Median	19.00	22.00	16.00	40.88	97.33
Minimum	10.00	13.00	6.00	29.00	74.00
Maximum	30.00	33.00	20.00	57.00	129.00

Discussion

Our study revealed the knowledge of interns and residents toward patient safety was lower than the average in our university. In a study by Nabilou and colleagues in Urumia in 2011, they found that about 50% of interns, nursing and midwifery students rated their knowledge about patient safety well (13). Blasiak and colleagues showed that medical students' knowledge about patient safety is low. This study suggested that educational intervention plays an important role in increasing their awareness

toward patient safety (14). Another study in Hong Kong in 2010 showed that there is a significant gap in the awareness about patient safety issues in fourth-year medical students and recommended that adding these topics to the students' curriculum is essential (15).

A review in 2011 showed, even in the developed countries, patient safety training courses, whether as an elective one or as integrated with other courses, has not been seriously considered in medical curriculum (16). In a study conducted in China, students who were trained about the patients safety

had high awareness regarding this issue (17). A study by Gaupp in 2016 showed that the education of patient safety issues through electronic methods improves medical students' attitude (18). Dankbaar and colleagues revealed a video lectures (as a game) and text-based lectures (as an electronic module) on patient safety increases the knowledge of medical students in this regards (19).

Given the low level of medical students' knowledge about patient safety issues in our study and similar research, it is necessary that effective interventions be considered in the educational planning for the trainees especially for medical students before and during internship. If the educational interventions be provided properly, at the right time, and according to the evidence, in addition to raise awareness and creating a positive viewpoint, can eventually lead to a decrease in medical errors and AEs.

Although the participants' attitude toward patient safety was almost positive, statistically, but it can be concluded that the attitude was closer to the moderate. A study found that the majority (90%) of health workers in Urmia University of Medical Sciences had a moderate attitude towards patient safety (20).

Current study showed that our residents had a higher score in attitude and awareness than interns toward patient safety, which seems to be real given the more work experience among the residents. More experience in clinical settings makes residents to pay greater attention to patient safety issues (7).

Our study revealed that there was no significant difference in the patient safety knowledge according to gender and marital status which is consistence with Urmia and Pakistan studies while we found females had more positive viewpoint toward patient safety (20-21).

Limitation

Current study was a cross-sectional research and was limited to Kerman university of Medical Sciences; therefore, the finding must be generalized with caution. Another limitation was that the data was collected as self-reporting, which does not necessarily yield precise evidence. But it was probably

the first study that assessed Patient safety from the viewpoint of trainees in internship and residency program according to WHO questionnaire.

Conclusion

Our study revealed the knowledge and attitude toward patient safety was moderate among interns and residents at Kerman University of Medical Sciences. Residents had higher awareness and more positive attitude than interns, probably due to more work experience and training provided at the beginning of the residency program. Therefore, it is imperative that patient safety topics be taken into consideration in the curriculum development and revision. It is better to use the modern educational methods to make the topics more engaging and effective.

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