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Original Article

Refusing to report the medication errors observed in Ahvaz Jundishapur University of Medical Sciences during 2014–2015

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ABSTRACT

Introduction: One of the most important threated for patient health in medical centers is medication errors.
Objective: The purpose of this study was evaluation of effects of healthcare reform on refusing the medication errors report by nurses of educational hospital affiliated to Ahvaz Jundishapur University of medical sciences during 2014–2015.
Materials and methods: This cross-sectional study was conducted at Razi, Golestan and Emam teaching hospital of Ahvaz (a tertiary-care hospital) in the southwest of Iran. The present study was a cross-sectional study. Data about the demographic characteristics and reasons not reporting medication errors from three main educational hospital of Ahvaz were collected.
Results: After processing data, the results showed 61% of medication errors report by them. Based on our result, the highest reason for refusing the medication errors observed because of fear from reporting consequences. The results of the present study showed that the most important reasons for refusing the medication errors report by nurses were related to factors related to the fear of the consequences of reporting 3.72 ± 1.532, factors related to the process of reporting were 3.50 ± 0.753 and the managerial factors 3.12 ± 1.286, respectively.
Conclusion: Regarding the etiology of medication errors, *Escherichia coli* were the most frequent pathogen. The finding of this study showed that the encouraging hospital managers to give a positive response to them, encouraging nurses to reporting errors without any stress and paying attention to local standards can be reduce number of medication errors.

1. Introduction

In recent years, one of the most important problem of medical centers that threats the patient health and safety is medication errors.[1,2] These errors commonly occur during administering an intravenous drug, drawing blood, failure to use an appropriate equipment, the care procedures of patients during surgery and performing other procedures.[3–9] Any avoidable incidences which are occur during the process from medication request to patient monitoring is definition of medication error.[1,10–14] The most important effect of medication errors are economic consequences, mortality, increase adverse hospital costs and increase hospitalization time.[13,15,16] Nowadays one of the important factors in care systems is patient safety.[5,17] Also, the maximum rate of medication errors reported in initiated by the institute of medicine.[15,18] Among on HCWs, Nurses have the most important role to reduce the risk of incorrect medication errors and increase the patient safety.[17,19,20] According to the several studies, 1–2% of admitted patients and prescribing error is the most common type of medication error in these settings and each year this agents were responsible for at least $3.5 billion annually.[18,21] Reporting medication errors lead to

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saving patients' wellbeing and safety, also is counted as a valuable information source for preventing further mistakes in future.[6,7,21] Drug errors are the most important cases in prevalence medical errors. The results of different studies have shown that increase the report of medication errors can be help to manage these errors and reduction of injuries.[22,23] Mohammad Nejad et al., in 2013 calculated the rate of refusing of medication errors report from nurses at emergency ward, Tehran, Iran.[24] In similar works Kouhestani et al. studied the refusal in reporting medication errors from the viewpoints of nursing students in Arak University of Medical Sciences.[25] An investigation in Mashhad, Iran in 2012 showed the nurses' viewpoints about causes of medicinal errors.[26] In 2012, in Tabriz and Maragheh hospital Hosseinzadeh et al. estimated the reasons of nurses' medication errors and perspectives of them about barriers of error reporting.[27] In this study, we evaluated the knowledge of authorities about refusing the medication errors report and the impact on in the management and control of medication errors after healthcare reform. The purpose of this study was assessment of effects of healthcare reform on refusing the medication errors report by nurses during 2014–2015.

2. Materials and Methods

2.1. Methods

This cross-sectional study was conducted to after the healthcare reform at educational hospital affiliated to Ahvaz Jundishapur University of medical sciences of Ahvaz in three hospital of Ahvaz city: Razi, Golestan and Emam educational hospital during a 1-year period (from 2014 to 2015) with 1225 beds approximately, in the southwest of Iran. All nurses in different wards of the hospital were invited to participate in the study. The target population comprised 330 nurses who worked at day/night in different wards. Medication errors in different wards of the hospital were studied. The instrument was a researcher-made questionnaire included demographic data (characteristics such as age, sex and experience) and questions which were related to the causes and factors of refusing the medication errors report included 19 questions in 3 domains: fear of the consequences of reporting (with 11 items), managerial factors (with 5items) and factors which were related to the process of reporting (with 3 items). Data collection designed according to the questionnaire of the operating system and administration errors.[28] The questionnaire was assembled based on previous studied to ascertain medication errors encountered by nurses.[29–34] In this study, the supervisor according to reported cases of medication errors, observation and after consultation with Metron, recorded the cases. Random sampling was performed by nurses who were working in hospital after the healthcare reform plan. The nurses' age, sex, ward of working and reasons for not reporting medication errors were analyzed by SPSS 16.0.

2.2. Description of study area

Ahvaz is a city with an area of 185 square kilometers that is the capital of Khuzestan Province (Southwest of Iran and Northern of Persian Gulf) in Iran and is located at 31°20′ N and 48°40′ E.[35–42] Razi, Golestan and Emam educational hospital are a tertiary-care hospital with 220, 425 and 600 beds, located in the south west of Ahvaz.[42–44] The location of the study area is shown in Fig. 1.

2.3. Statistical analysis

Medication errors in different wards of the hospital data were collected from the Statistics and Information three hospital of Ahvaz city: Razi, Golestan and Emam educational hospital from 2014 until 2015. The coded data were entered in SPSS software version 16. Data analyses were performed, using SPSS-16. The data were analyzed by applying descriptive and statistical tests include independent *t*-test, and chi-square.

3. Results

This study was conducted on more than 330 nurses who were working in Razi, Golestan and Emam educational hospital of affiliated to Ahvaz Jundishapur University of medical sciences, Iran after the healthcare reform plan during 2014–2015. The rate of participant's n this study was 85%. According finding this study, the average age of participants was 28.7 ± 3.54 years. Also, result showed that the most of nurses were in ranging 21–46 years. Women with 83.06% were the most of gender between participants (Table 1). The results Table 1 showed that 97.85% of them were bachelor (n = 274). Based on the results Table 1, 33.57% had lower than 1–5 years job experience and 66.43% had 5 years and more.

Table 2 also lists the frequency, mean, mean ± SD and P values for ranking the factors related to the refusing to report the medication errors based on the importance after the healthcare reform plan during 2014–2015. The most common reasons for refusing the medication errors report in exercise group have shown statistically significant improvement managerial factors, factors related to the process of reporting and fear of the consequences of reporting ($p < 0.05$; Table 2). The most common reasons for refusing the medication errors report are the fear of the impact of reporting on the personnel's annual evaluation (3.94 ± 1.682), fear of expressing a negative attitude towards the nurse(s) making errors by the patient and his/her family (3.92 ± 1.438), fear of being blamed by nursing heads (3.87 ± 1.365) and Fear of informing colleagues working in other wards and other facilities about one's medication error (3.85 ± 1.563), respectively.

Fig. 2 shows relationship between the categories of factors effects on refusing of medication errors versus the percent of agreement during 2014–2015. Keep in mind that the fear of the consequences of reporting factors was the most important reason for not reporting the medication errors.

4. Discussion

In this study, we assessment of effects of refusing the medication errors report at a Razi, Golestan and Emam educational hospital, Iran after the healthcare reform plan during 20142015. In recent years, refusing the medication errors have been considered a one of them serious threat to the health of patients that hospitalized in medical centers. Based on results of this research, the fear of the consequences of reporting, factors related to the process of reporting and managerial factors were the most important reasons for refusing the medication errors report in nurses during 2014 until 2015, respectively.

Fear of the impact of reporting of errors on the personnel's annual evaluation (3.94 ± 1.682) was the highest mean score in refusing among nurses who were working in Razi, Golestan and Emam educational hospital after the healthcare reform plan. In a study performed by Mohammad Nejad et al. in Tehran's hospital, the fear of its negative effect on financial advantages and the lack of importance of reporting from nurses' perspective were the most common reasons for refusing of the medication errors.[24]

Also, based on results of Arak study, fear from reporting consequences had the highest score.[25] In another study conducted at four hospitals in Mashhad, Iran, nurses had been estimated that only 45% of all the medicinal errors were reported; also they cited a lack of knowledge about unit policies, routines (59.8%) and negligence to report (59.8%) as the most important reasons for the failure to report the errors.[26] This can be explained by the fact that nurses with different methods of the medication errors report. According to result study Hesari et al., in 2015, the main reasons for not reporting medication errors was fear of legal issues (3.79 ± 1.07).[45] This observation is in agreement with the findings of our study.

According Results of our study, 61% of medication errors report by

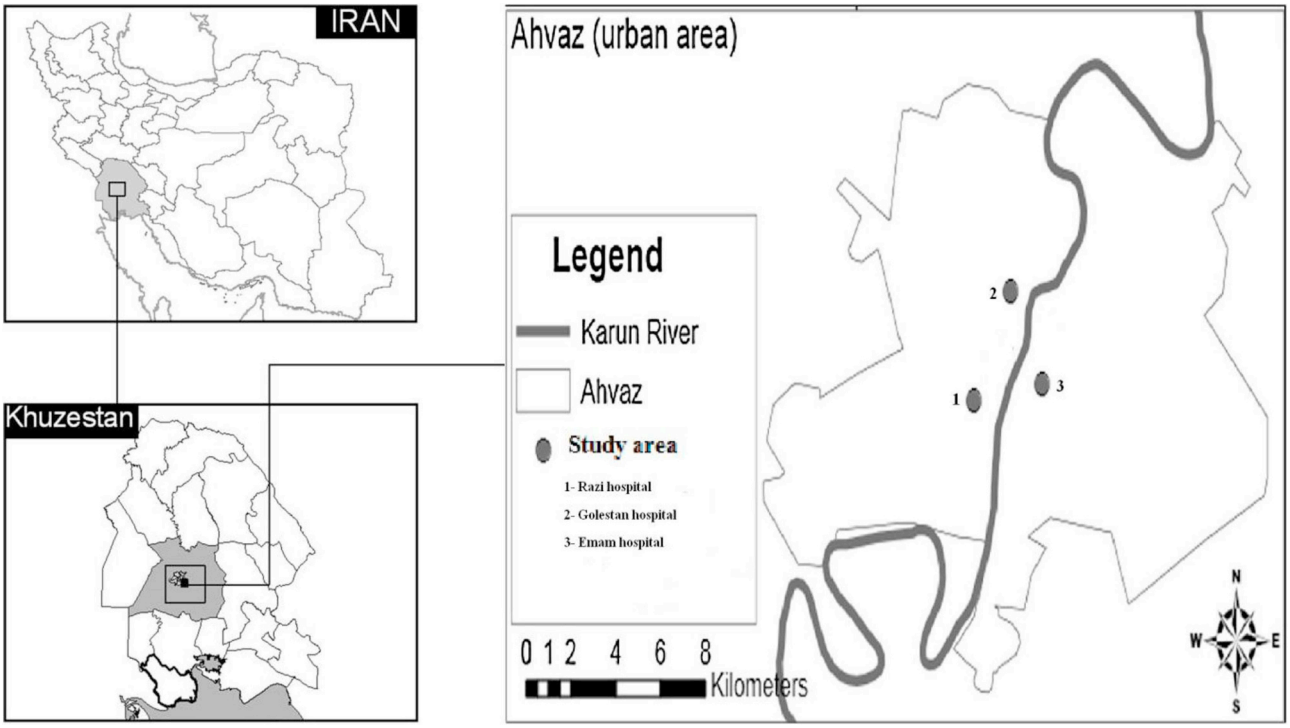

Fig. 1. Location of the study area educational hospital affiliated to Ahvaz Jundishapur University of medical sciences, in the south west of Ahvaz, Iran.

Table 1
Characteristics of the Nurses in Razi, Golestan and Emam educational hospital.

	Characteristics	Number (n)	Percent (%)
Age	Less than 25	58	20.71
	25–35	149	53.21
	35 years and more	73	26.08
Gender	Female	239	85.36
	Male	41	14.64
Years of work experience	1–5 years	94	33.57
	5 years and more	186	66.43
Education level	Master of sciences and more	6	2.15
	Bachelor's degree	274	97.85

nurses after the healthcare reform plan. Kouhestani et al., in 2009 was performed on Refusal in reporting medication errors from the viewpoints of nursing students in the University of Medical Sciences Arak, Iran. Based on result there, the rate of medication errors reported were 75% during the preceding year.[25] There are some possible reasons contributing to the low reported of medication errors in our study, including lack of a reporting system for registry and reported in during of treatment time.

In a similar work, Seidi et al. in their study at four hospitals in Mashhad, Iran, had been estimated that only 45% of all the medicinal errors were reported.[26] This can be explained by the fact that nurses with different methods of the medication errors report.

Finally, it should be mentioned that this study had some limitations such as small sample in only one hospital. It should be noted that, similar studies should be carried out on other public and private hospitals using large samples. Also, we can prevent or reduce the medication errors by medication protocol and education.

4.1. Limitations and strengths

This study was done during 2014–2015 because of limited time usage of data. Choosing only educational hospital affiliated to Ahvaz Jundishapur university of medical sciences of Ahvaz, Iran in this study because of the university of Ahvaz Jundishapur, has been one of the biggest university in Iran. Medication errors observed trends may not be representing a wider nurse's population because of this study had a small sample size. It should be noted that, future larger studies are required to verify the observed trends effects of healthcare reform on refusing the medication errors report by nurses of educational hospital.

5. Conclusion

This study was conducted to estimate the effects of refusing the medication errors report in Razi, Golestan and Emam teaching Hospital, Ahvaz, southwest of Iran, during 2014–2015. The results that our study showed were that an increase in the nurses knowledge can be reduce the number of medication errors. In conclusion, it should be mentioned that the number of medication errors among nurses, in this educational hospitals were low and the fear of the consequences of reporting had the greatest role in the refusal reporting of medication errors. Training nurses, a committee of the main root causes of medication errors in hospitals, retaining courses on pharmacological information, encouraging nurses to report medical errors, effective communication with nurses and design of drug information questions related to the personnel can be effective in reduce of the medication errors occurrence and improve the patient's safety.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been observed by the authors completely.

Table 2
Ranking the factors related to the refusing to report the medication errors based on the importance.

Factors	Variables	Scale (Agree) F (%)					Mean ± SD	Mean ± SD total	P Value
		Strongly	Agree	neutral	Disagree	Strongly disagree			
Managerial factors	Lack of receiving positive feedback from the nursing heads following to report on medication errors	14(5%)	62(22.14%)	34(12.15%)	97(34.64%)	73(26.07%)	3.62 ± 1.532	3.12 ± 1.286	0.0003
	False beliefs in nursing heads and managers	20(7.14%)	65(23.2%)	38(13.57%)	107(38.22%)	50(17.85%)	3.78 ± 1.381		
	The heads' focus only on finding the culprits and blaming them, regardless of other factors involved in the occurrence of errors	13(4.65%)	48(17.15%)	52(18.57%)	78(27.85%)	89(31.78%)	3.37 ± 1.462		
	Disproportionate reactions of the heads to the error seriousness	14(5%)	70(25%)	29(10.35%)	93(33.21%)	74(26.44%)	3.60 ± 1.156		
	Disproportionate reactions of the heads to the error importance	12(4.28%)	94(33.57%)	26(9.28%)	72(25.72%)	76(27.15%)	3.59 ± 1.246		
Factors related to the process of reporting	Not paying attention to the reporting on some medication errors	78(27.8%)	42(15%)	38(13.57%)	100(35.72%)	22(7.85%)	3.16 ± 1.386	3.5 ± 0.753	0.0046
	Lack of a clear definition of medication errors	35(12.5%)	93(33.22%)	45(16.07%)	68(24.28%)	39(13.93%)	3.06 ± 1.362		
	To forget reporting on the medication errors	49(17.5%)	56(20%)	38(13.58%)	102(36.44%)	35(12.51%)	3.18 ± 1.467		
fear of the consequences of reporting	Fear of the impact of reporting of errors on the personnel's annual evaluation	40(14.29%)	69(24.65%)	23(8.21%)	111(39.64%)	37(13.21%)	3.94 ± 1.682	3.72 ± 1.532	0.0023
	Fear of the impact of reporting of errors on their salaries and benefits	42(15%)	80(28.57%)	35(12.50%)	105(37.50%)	18(6.43%)	3.19 ± 1.532		
	Fear of being blamed by nursing heads	20(7.15%)	52(18.57%)	16(5.71%)	130(46.43%)	62(22.14%)	3.87 ± 1.365		
	Fear of being blamed by doctors	36(12.86%)	63(22.50%)	18(6.43%)	118(42.14%)	45(16.07%)	3.59 ± 1.362		
	Fear of being blamed by colleagues	62(22.15%)	103(36.78%)	32(11.43%)	60(21.42%)	23(8.22%)	3.05 ± 1.425		
	Fear of producing side effects in patients	32(11.43%)	45(16.07%)	15(5.36%)	103(36.78%)	85(30.36%)	3.85 ± 1.736		
	Fear of being labeled as incompetent nurses and inadequacy	53(18.92%)	50(17.86%)	28(10%)	119(42.50%)	30(10.72%)	3.48 ± 1.638		
	Fear of colleagues' behavior	42(15%)	108(38.5%)	33(11.79%)	78(27.86%)	19(6.78%)	3.11 ± 1.324		
	Fear of expressing a negative attitude towards the nurse(s) making errors by the patient and his/her family	33(11.79%)	30(10.71%)	34(12.14%)	163(58.21%)	20(7.15%)	3.92 ± 1.438		
	Fear of judicial issues following reporting on medication errors	40(14.29%)	32(11.43%)	20(7.15%)	145(51.78%)	43(15.35%)	3.63 ± 1.278		
	Fear of informing colleagues working in other wards and other facilities about one's medication error	25(8.93%)	67(23.93%)	33(11.79%)	105(37.5%)	50(17.85%)	3.85 ± 1.563		

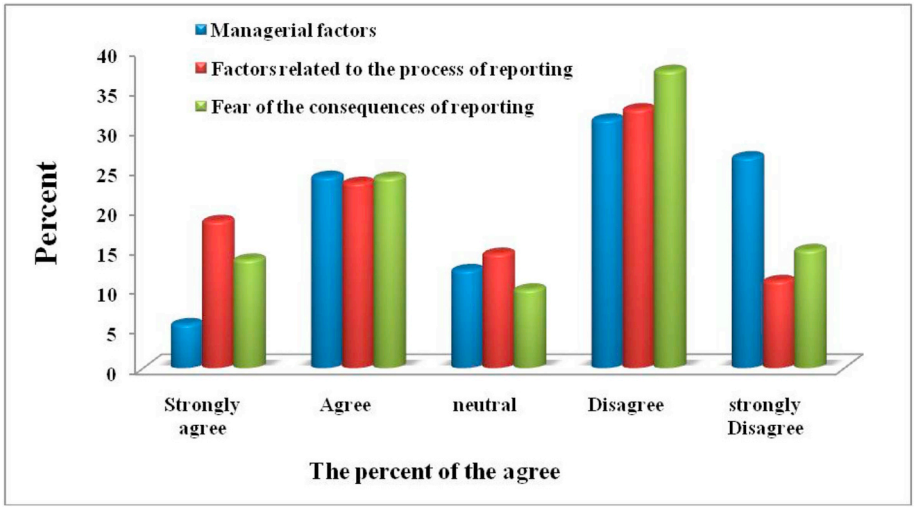

Fig. 2. The percent of agreement to refusing the report of the medication errors.

Authors' contributions

Study concept, design and critical revision of the manuscript for important intellectual content: Sahar Geravandi, Farhad Adhami Moghadam, Mohammad Sahebalzamani, Manizheh Mehrpour, Farid Yousefi, Abedin Hoseini Mohammad Javad Mohammadi; drafting of the manuscript and advisor: Mohammad Sahebalzamani; performing the experiments Sahar Geravandi.

Financial disclosure

We have no financial interests related to the material in the manuscript.

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Conflicts of interest

Authors have no conflict of interests.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.cegh.2019.02.004.

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