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Incident reporting behaviors and associated factors among health care professionals working in public hospitals in Addis Ababa, Ethiopia 2017

Abstract

Introduction: A systematic and inclusive approach to incident reporting help to learn from errors and to avoid preventable medical errors. Thus this study was aimed to assess incident reporting behavior and associated factors among health care professionals in public hospitals in Addis Ababa, Ethiopia 2017.

Methods: A cross–sectional study was conducted at public hospitals in Addis Ababa, Ethiopia 2017. Multistage sampling technique was used to enroll 697 study participants. Data was analyzed using SPSS version 21. The patient safety culture tool developed by health research and quality agency was used for data collection. A multivariate linear regression model was used to identify factors associated with the outcome variable.

Results: The mean age of the participants was 29.06(±4.893) years. The health care professionals who were reported incident always was 30.4percent. But, 20.4% of the participants never reported an incident. A multivariable logistic regression analysis revealed that;, hospital management support (p=0.001, 95%CI; 0.206, 0.389), non–punitive response to errors (p=0.001, 95%CI; 0.168, 0.292), communication openness (p=0.001, 95%CI; 0.062, 0.249), supervisors actions promoting safety (p=0.001, 95%CI; 0.211, 0.439) and feedback on errors reported(p=0.005, 95%CI; 0.041, 0.237) were significant predictors for incident reporting behaviors among health professionals.

Conclusion: Incident reporting behavior among health care professionals was low. To increase the incident reporting behavior among health professionals, the priority should be given by all hospital managers on feedback mechanisms, non–punitive response to errors and communication systems and process.

Keywords: Incident reporting, health professionals, Addis Ababa, communication, fundamental

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Background

Reporting of patient safety concerns in the health care setting by health care providers who first discover, witness, or has familiarity with details of an incident or unsafe condition is fundamental to error prevention.[1,2]

Many health care workers didn't report errors as because self–reporting will result in repercussions.[3,4] Providers' emotional responses (feeling worried and fearful of disciplinary actions) to errors inhibit reporting.[5] Self–reporting errors can be thwarted by several factors like fear career–threatening disciplinary actions, a culture of blame and punishment do not report all errors.[6–8] Fears of reprisal and punishment have led to a norm of silence. Health care professionals need to have conversations about their concerns at work, including errors and dangerous behavior of coworkers.[8]

As health care organizations continually strive to improve, there is a growing recognition of the importance of establishing a culture of safety which is critical component of health care quality. Achieving a culture of safety requires an understanding of the values, beliefs, and norms in an organization and what attitudes and behaviors related to patient safety are expected and appropriate.[9] Measuring safety culture is important because the culture of an organization and the attitudes of teams have been found to influence patient safety outcomes and these measures can be used to monitor change over time.[10]

An inclusive and systematic approach to incident reporting would help learning from errors. Through incident reporting, various kinds of errors can be traced and discussed among health professionals and preventive mechanisms can be designed.[11] Despite the significant contribution of incident reporting to patient safety, the magnitude of underreporting remains high in different countries.[12]

The study conducted in Iran, showed that the presence of punitive culture in workplace, lack of professional workforce, longer working hours and lack of patient safety programs were the main factors of unsuitable safety conditions in the hospitals.[13]

In Korea, a qualitative study suggested ninety–six barriers to incident reporting in their hospitals. These barriers were categorized into individual and organizational levels. Some of the most frequently

reported barriers include poorly designed incident reporting systems, and lack of adequate patient safety leadership. Similar study among Iranian nurses revealed barriers associated with nurses' perceptions include the following: fear of legal action and job threats, fear of economic losses, and fear of honor and dignity.[14]

The study conducted at Jimma university Specialized hospital indicated that there is poor patient safety practice and potentially preventable medical errors in the hospital.[15] In Ethiopia, even though records on patient safety outcomes is limited, published data from the hospitals shown all cause surgical mortality of 7%.[16]

According to the Ethiopian hospital reform implementation guideline, an incident officer should be assigned to each hospital to receive and investigate all incident reports to the quality of the service being offered to users, supporting health facilities to evaluate and improve the provision of effective health services.[17]

An incident reporting is very important to hospital risk management programs. Despite the empirical evidence that positive patient safety culture in hospitals are prerequisites for incident reporting, little is known about health care provider's behaviors' on incident reporting.

Therefore, this study was aimed to assess incident reporting behavior and associated factors among health care professionals in public hospitals in Addis Ababa, Ethiopia 2017.

Methods and materials

Study Design, period area

Institution based cross sectional study was employed from March 01 to April 25, 2017, in Addis Ababa, Ethiopia.

Source population

All health care professionals in public Hospitals Addis Ababa Ethiopia.

Study population

All selected health care professionals in the selected public Hospitals.

Inclusion and Exclusion criteria

Health care providers who are fulltime workers and at least have worked in the current hospital for 6months, but those who have worked for less than 6months were excluded.

Sample size determination

Sample size was determined based on single population proportion formula

$$n = 1.96^2 \frac{0.5 * 0.5}{0.05^2} = 384$$

Where: P=proportion of health care providers who report incidents, p=0.5 is taken to get the maximum sample size, d=margin of error, Z=1.96 at 95% confidence level

$$n = \frac{z2P(1-P)}{d2}$$

Because of the fact that the source population is less than 10,000, correction formula was applied to get the final sample size n= 348.5. The sample size was multiplied by the design effect of 2 since the sampling technique was multi–stage sampling technique. So, the final sample size was 2*348.5=697.

Sampling technique

Multi–stage sampling technique was used. The hospitals were selected by lottery method and the respondents were allocated proportionally for each hospital based on their number of health care professionals. Respondents were selected by simple random.

Data collection procedure

Data was collected by self–administered questionnaires which was adapted from the AHRQ HSOPSC. It contains socio–demographic variables and patient safety culture dimensions. A data collection tool was checked for completeness and consistency by supervisors and principal investigator.

Data analysis

Descriptive statistics was used to describe participants' characteristics, patient safety cultures, and incident reporting. Those variables which have association with frequency of incident reporting with p–value≤0.25 by bivariate analysis were entered in to multivariable analysis and p–value of less than 0.05 was considered to get statistically significant.

Ethical consideration

Ethical approval was obtained from Institutional Review Board (IRB) of Jimma University Institute of Health to conduct the study. Permission was requested from each hospitals and verbal consent was requested from each study participant. Participants had had full right to participate or refuse participation in this study.

Results

Socio–demographic characteristics of the respondents

Out of the total (n=697), five hundred seventy nine were returned with response rate of 83.6% and the mean age of the participants was 29.06 (±4.893years). Regarding the job role of the respondents, 249(49.9%) were nurses and 140(24.2%) physicians (Table 1).

Incident reporting behavior

The proportion of respondents who were reported incident always was 30.4percent. But, 20.4% of the respondents never reported an incident.

Dimensions of patient safety culture as predictors of incident reporting behavior

Bivariate analysis was done between frequency of events reported and each PSC dimensions. In this part, each safety culture dimensions were tested for association on frequency of events reported. Accordingly, hospital handoffs and transitions, non–punitive response to error and organizational learning and continuous improvement was associated with a higher frequency of incidents reporting (β=0.271, p=0.001), (β=0.545, p<0.001), (β=0.641, p<001) respectively (Table 2).

Table 1 Socio–demographic characteristics of health care providers working in public hospitals, Ethiopia, 2017(n=579)

Characteristics		Frequency	Percent
Educational status	Diploma	65	11.2
	Degree	456	78.8
	Masters and above	58	10
Service year in the current hospital	less than 1year	138	23.8
	1 to 5years	147	25.4
	6 to 10years	218	37.7
	11 to 15years	44	7.6
	16 to 20years	25	4.3
	21years and above	7	1.2
Job role/profession	medical doctor	140	24.2
	nurse/nurse assistant	289	49.9
	Technician (lab, radiologist)	55	9.5
	Pharmacy	36	6.2
	administrative/management	25	4.3
	Other	34	5.9
Hours Worked Per Week	less than 20	12	2.1
	20–39	102	17.6
	40–59	326	56.3
	60–79	86	14.9
	80–99	33	5.7
	100hours and above	20	3.5

Table 2 Association of patient safety culture dimensions and, incident reporting at Addis Ababa public hospitals, Ethiopia, 2017

PSC dimensions	Unstandardized Coefficients(β)	Sig	95.0% CI for B	
			Lower bound	Upper bound
Teamwork within the hospital unit	.481	<.001	.360	.603
Feedback and communication	0.685	<.001	0.609	0.761
Organizational learning and continuous improvement	0.641	<.001	0.563	0.720
Handoffs and transition	0.271	<.001	0.175	0.367
Supervisor expectations and actions promoting patient safety	0.921	<.001	0.844	0.999
Teamwork across units	–0.190	0.110	0.423	0.043
Non–punitive response to errors	0.545	<.001	0.487	0.604
Overall patient safety	0.022	0.696	–0.090	0.135
Staffing	0.111	0.042	0.004	0.218
Hospital management support	0.768	<.001	0.698	0. 838
Communication openness	0.742	<.001	0.663	0.821

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Overall Predictors of incident reporting behavior

The variables which have association with frequency of incident reporting with P–value≤0.25 by bivariate analysis were retreated against incident reporting by multivariate linear regressions. A multivariable logistic regression analysis revealed that feedback for errors reported (p=0.005, 95%CI; 0.041, 0.237), hospital management support (p=0.001, 95%CI; 0.206, 0.389), non–punitive response to errors (p=0.001, 95%CI; 0.168, 0.292), Communication openness (p=0.001, 95%CI; 0.062, 0.249), supervisors actions promoting safety (p=0.001, 95%CI; 0.211, 0.439) were significant predictors of patient safety culture dimensions for incident reporting among health professionals (Table 3).

Table 3 Predictors of an incident report behavior, at public hospitals of Addis Ababa, Ethiopia, 2017

Variables		Unstandardized B	T	Sig.	95.0% CI for B	
					Lower	Upper
	(Constant)	–.288	–1.111	.267	–.796	.221
Education	master and above	.185	1.611	.108	–.041	.411
Service year in hospital	6 to 10 years	–.257	–2.994	.003	–.425	–.088
	11 to 15 years	–.105	–.693	.488	–.404	.193
Service year in the current hospital unit	6 to 10 years	.359	3.813	<.001	.174	.544
	11 to 15 years	–.083	–.474	.636	–.425	.259
	21 years &above	–.038	–.130	.896	–.611	.535
Job role	Administrative staff	–.038	–.224	.823	–.370	.294
Working hours per week	20 to 39	–.255	–2.961	.003	–.424	–.086
	60 to 79	.081	.874	.382	–.101	.262
	100 hrs and above	.247	1.282	.200	–.131	.625
PSC dimensions	Teamwork within hospital units	.013	.265	.791	–.084	.110
	Feedback for errors reported	.139	2.789	.005	.041	.237
	Organizational learning	.034	.682	.0496	.064	.131
	Handoffs and transitions	–.062	–1.831	.068	–.129	.005
	Supervisors actions and expectations	.325	5.582	<.001	.211	.439
	Non–punitive response to errors	.230	7.322	<.001	.168	.292
	Staffing	–.154	–4.194	0.1	–.226	.082
	Hospital management support	.297	6.404	<.001	.206	.389
	Communication openness	.155	3.257	0.001	.062	.249

Discussion

In this study, the proportion of respondents who were reported incident always was 30.4 (95% CI=23.8, 36). But, 20.4% of the respondents never reported an incident. The study conducted in Northeast Region of US shows that 72% of the participants reported patient safety events in all situations.[18–21] This difference might be due to the difference in the socio economic status of the two countries and the difference in the perception of the importance of event reporting for quality health care among the health care providers in those countries.

The positive response rate for this study on the Non–Punitive response to error dimension was 36.2% (95%CI=34.0, 38.1) lower than the positive response rate (43%) for US hospitals, although an area for improvement in US hospitals as well. As in this study, results from the AHRQ studies indicated that most US hospitals reported Non–Punitive Response to Error as the lowest dimension. Findings from this study indicate that health care providers do not feel free to report errors or issues related to patient safety. This may be due to many reasons such as fear of punishment, blame, and potential for shame which that are reasons documented in the literature related to error reporting.[22–23]

But, when compared with the study conducted in Cairo, Egypt (19.5% positive response for non–punitive response to errors[23] it is considerably high. This difference might be due to socio–cultural differences between these countries.

The positive response for the dimension "Communication openness and feedback" was 32.6% (95%CI=24.1, 38.8). According to the study undertaken in New York, communication openness scored 60.5% of positive responses.[11] In Ethiopian culture, open communication about adverse events can possibly be hindered by formality, respect, and interpersonal harmony. One of the most problematic points is that subordinates do not normally express disagreement or uncertainty,

especially with persons of higher status, to avoid confrontation or signs of disrespect. The other reason could be avoidance of conflict and fear of legal liability for mistakes done. Another study conducted in two East African hospitals identified obstacles to patient safety, among those obstacles, was poor communication along different hierarchies.[24] although staff generally felt there was a good level of cooperation within departments, week communication between professions and across hierarchies was frequently described. According to this study, hierarchical dynamics contributes to elite groups, such as doctors, feeling that they could flout patient safety rules with impunity, since they did not recognize those beneath them as having the authority to control are sanction their conduct.

Overall positive response to incident reporting was 30.4% (95%CI=26.4, 33.9). According to AHRQ guideline frequency of incidents reported in these hospitals is area that needs to be improved.[25] Frequency of incident reporting found in the study in New York was 47.72%, which is higher than this study.[11] This could be due to the difference in the perception of the importance of error reporting by health care providers and the difference in legal liabilities and punitive culture of the health care organizations involved in this study.

This view is supported by 36.2% positive responses to non–punitive response to errors. In other words staff is scared to report errors. Not having a non–punitive response to errors causes underreporting. This indicates there may be a strong blame culture in the hospitals where the active end is blamed and errors are not seen as opportunities to learn. When compare with the study conducted in Dubai,[26] the least positive response was obtained by non–punitive response to errors (22%) while in this study it received a higher positive response (30.4%). This might be the cultural differences between countries. In both cases, the findings suggest that there is less attention for incident reporting in the studied hospitals.[27–30]

Conclusion

Feedback on error reporting, management support for safety, non–punitive response, hospital manager/supervisor expectation and actions promoting patient safety and communication openness were the most predictive patient safety culture dimensions on incident reporting among health professionals. Therefore, managers and health policy makers must focus on improving patient safety culture to promote incident reporting behaviors of health professionals.

Declaration

All authors contributed equally for this research work.

Ethics approval and consent to participate

Ethical approval was gotten from Jimma University, Ethical committee who dedicated to evaluate ethical consideration of all researches and informed consent was obtained from study participants.

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Conflict of interest

Author declares that there is no conflict of interest.

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