DOI: 10.2478/cipms-2023-0015 Curr. Issues Pharm. Med. Sci., Vol. 36, No. 2, Pages 87-93

sciendo

Current Issues in Pharmacy and Medical Sciences

Formerly ANNALES UNIVERSITATIS MARIAE CURIE-SKLODOWSKA, SECTIO DDD, PHARMACIA

journal homepage: http://www.curipms.umlub.pl/

Healthcare professional's knowledge and awareness of the medication error reporting systems in the Kuwaiti hospitals

Mohammad Saada*

School of Pharmacy, University of Wolverhampton, United Kingdom

ARTICLE INFO

Received 02 February 2023
Accepted 16 March 2023

Keywords:
healthcare professional, medication use and management, medication error, continuous professional development training.

ABSTRACT

Objective. A survey was conducted to explore healthcare professional's (HCPs) knowledge and attitude towards medication errors reporting processes and systems used in their local hospitals.

Methods. There were 696 respondents and the observational survey showed the diverse perspectives of HCPs from diverse professions (doctors, pharmacists and nurses) who are at different stages in their career. The survey results highlighted the deficiencies in the medication safety management process, including the follow-up on witnessed or discovered medication errors, the effectiveness of the used reporting systems for medication errors, the standardisation of electronic prescribing software, and the training of HCPs at the six hospitals on medication safety.

Key finding. Only 46% of the surveyed stated that their hospital had a mechanism in place for reporting medication errors and 60.7% of the participants agreed that they would submit reports provided the system is not used for performance management and only those need to know will be able to identify their name. Regarding prescription writing, 51% of surveyed HCPs said they utilise electronic prescribing software; however, the overall usage rate of electronic prescribing systems was 49%, with handwritten prescriptions remaining the option used in the majority of the time. In terms of HCP training, 20% of the survey respondents said they did not receive any instruction or direction in the hospitals on pharmacovigilance and patient safety.

Conclusions. The Kuwaiti MoH should build a national electronic incident reporting system and establish standardised rules and protocols for incident reporting that is to be anonymous and of compulsory use by all government and private hospitals.

INTRODUCTION

Active failure is defined as the immediate identification of the error that occurred and latent failures include factors that may be dormant in the system until they contribute to a medication error (e.g., organisational culture, management decisions, procedure design, or deficient training). It is crucial for HCPs to understand that the reporting of medication errors is fundamental to learning from the incident and to devise plans to prevent their re-occurrence[1]. The Institute of Medicine (IoM) and the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) emphasise the great value of development of effective and efficient reporting systems by healthcare organisations [2]. In many healthcare organisations, medication error reporting is poorly established and perceived. For instance, Samsiah et al. [3] interviewed 31 HCPs who were involved in active failures of medication management, where 79% of actual errors were not reported. In a similar study, Badruddin et al.[4] interviewed 64 HCPs and reported that 44% of them did not feel the need to report medication errors that did not cause any patient harm, or near-misses, with the 11% HCPs indicated that the reason for not reporting was to protect their jobs, professional image or pride. This was also agreed by Haw et al.[5], who indicated that 48% of all HCPs surveyed failed to report medication errors as the process was; arduous and time-consuming, can be used against them or trigger a disciplinary action, and that there is a general lack of knowledge on medication error reporting systems.

In addition, Alqubaisi et al.[6] studied the behavioural determinants of HCPs' medication error reporting and HCPs' awareness of medication use and management (MU&M) policies. Their study respondents showed a general lack of awareness of medication policies at their hospital, and

* **Corresponding author**
e-mail: Saada_mohammad@yahoo.com

concerns of the implications of reporting on their career by 55% of respondents. The reviewed studies highlight that MU&M is a complex cultural paradox, significantly driven primarily by human factors and complex organisational environmental factors such as workload, issues with professional licensure and the nature of reporting systems in these organisations. This highlights the need for interviewing HCPs to explore their understanding and perspective of the MU&M process.

Using an online survey, this study aimed at investigating the adequacy of HCPs' awareness of the MU&M process and their attitude towards medication error reporting in six Kuwaiti government hospitals to inform the development of effective medication error reporting policies and frameworks in Kuwait [7].

METHODS

Study design and setting

This cross-sectional study involved a HCPs' survey and survey was scheduled for the summer of 2020. The initial plan was to commence with face-to-face, in person, group presentations at each of the six hospitals followed by a paper-based survey. However, due to the Coronavirus pandemic, the Kuwaiti health department and ethics committee, directed all researchers to cease all face-to-face activities and convert to virtual activities using online meetings platforms such as Skype, Zoom and Microsoft Teams. As a result, all activities were conducted online including the HCPs' brief and the official invitation to the study. The written information sheet and consent forms were then sent to HCPs who opted in to participate. The consenting participants completed the survey questions online, and the anonymous survey responses were collected to facilitate data analysis in the UK [7].

Ethical considerations

Ethical clearance and approval were received from the Kuwait MoH and the individual hospitals included in this study and the University of Wolverhampton.

Protocol

The protocol which was approved by the two ethics committees (Kuwait MoH and the University of Wolverhampton) was followed in all aspects except the mode of the Survey launch in-person presentation which was replaced by online Zoom presentation with question time. The first contact was by email, through the hospital coordinator, which included the participant information sheet and consent forms. Once participants contacted the researcher to confirm their participation, they were sent a SurveyMonkey® (Momentive, San Mateo, USA) link to the survey questions. Allowance of four weeks was given for participants to complete the survey through the link provided [7].

The survey questions were developed based on the results of the records audit chapter and the observation study. The clinical audits helped the researcher to understand the issues and concerns surrounding MU&M and tailor the questions accordingly to the participants [7].

Data analysis and protection

Data was analysed based on the type of data, numerical and categorical or thematic for qualitative data. While the data was collected in Kuwait there was requirement to move the anonymous data to the UK for analysis. The transfer followed the General Data Protection Regulation (GDPR, 2018) and was approved by the Kuwaiti MoH and the University ethics committees. Additionally, all row data was reviewed and cleared for use and transfer by the MoH research coordinator before the transfer. Storage of data involved password protected computers and Universal Serial Bus (USB) flash drives [7].

The survey questions (Q1-Q44), the available responses, and whether text responses were allowed or not are found in Supplement 1. Data cleaning and analysis was performed for each of the survey question. Frequency tables were used to compile participants' demographics (Q1-Q7), including age, gender, Kuwaiti nationality, education, hospital affiliation, profession, and work experience. For single-choice questions without additional text responses, such as Q10, Q15, Q16, Q17, Q18, Q20, Q34, Q41, and Q42, frequency tables were used to encapsulate the results. Chi-square tests of independence with p-values computed by the Monte Carlo method [8-9] were used to determine if there was an association between each of these questions and the demographic factors.

In addition, for single-choice questions with additional text responses, such as Q8, Q22, Q23, Q29, Q30, Q31, Q35, Q36, and Q37, the text responses were reviewed first and responses that were similar were placed into the same response category (existing or new categories). For multiple-answer questions with additional text responses, such as Q9, Q12, Q13, Q14, Q19, Q24, Q25, Q27, Q28, Q32-Q33, Q38, Q39, Q40, and Q43, the text responses were reviewed first and responses that were similar were positioned within the same response category (existing or new categories). Frequency tables and bar charts were used to total the results. For open-ended questions, such as Q11, Q26 and Q44, responses were reviewed and summarized. Frequency tables and bar charts were used to present the results. For Q21, although it was an open-ended question, the responses were mostly numerical or text that can be converted to numeric. Hence, responses for Q21 were recoded into numerical data and frequency tables and descriptive statistics were used to describe the results.

Data were imported into and analyzed using SPSS (Version 23) for Windows (IBM Corp., Armonk, NY). For any tests, a p-value less than 0.05 were considered significance. Bar charts were created using Microsoft Excel.

RESULTS

Demographic characteristics of study participants

Table 1 illustrates the demographics results of the study sample population. The sample was skewed towards the 25-34 years old (33%) and female gender (59%). The majority of the participants were Kuwaiti citizens (84%) and 30% of the participants were affiliated with one site (Al Sabah Hospital).

Table 1. Survey questions

Question number	Item description
1.	Age category
2.	Gender
3.	Kuwaiti national
4.	Education
5.	Hospital affiliation
6.	Profession
7.	Work experience
8.	How do you explain the concept of medication errors?
9.	What types of medication errors can be viewed as most frequent in the environment of hospitals?
10.	Have you ever witnessed other people making medication errors?
11.	Without mentioning any names or locations, do you have examples of historical medication errors?
12.	What consequences did you experience after someone making a medication error?
13.	How would you describe the effect of medication errors on patients and associated patient outcomes in your hospital?
14.	From your perspective, why do medication errors still occur in hospitals?
15.	Can you tell me whether your organization has any system in place for reporting medication errors that occur in the workplace?
16.	Is this system electronic or paper-based?
17.	Does this prescribing software have decision-making and drug-drug interactions prevention facilities?
18.	How does the pharmacy in your organization receive prescriptions?
19.	What are the reasons some hospitals do not implement and use electronic prescription systems?
20.	What are your thoughts about nationwide programs and systems for electronic prescriptions for hospitals?
21.	How many ward / clinical pharmacists are employed in your hospital?
22.	What are the required ward pharmacist qualifications?
23.	How to review treatment charts?
24.	In your hospital, how is the process of reviewing and verifying patients' medications on admission realized?
25.	Could you please describe the process of new prescription dispensing?
26.	How are patients' previous adverse drug reactions and allergies recorded and discussed with patients?
27.	Can you describe the process of modifying the prescribed medication by the doctor from pharmacists?
28.	In your opinion, what strategies and techniques can be used to Preventing Medication Errors in your department as well as in your hospital?
29.	How is the order of medications and their use controlled in your department? Who usually orders the medication and how? Who initiates therapy?
30.	How are these orders reviewed and managed?
31.	How are medications dispensed in the inpatient pharmacy department?
32.	What is the process of the second check of medication conducted by pharmacists and nurses for outpatients and inpatients?
33.	How are errors in dispensing and administration of medications that do not reach a patient (near-misses) detected, recorded, and reported? What is the process for errors that were noticed by patients (with and/or without harm and side effects)?
34.	Have you received the necessary training about the process of reporting medication errors?
35.	What training or guidance have you received in your hospital?
36.	Who is responsible for providing this training in your specific workplace?
37.	What should be the frequency of training in order to effectively avoid medication errors in your daily practice?
38.	How are pharmacists involved in education regarding a medication prescription in your hospital?
39.	In your opinion, how can training and clinical vigilance regarding the prevention of medication errors influence the occurrence of these medical mistakes?
40.	In your view, what training programs and practices to improve clinical vigilance regarding medication errors can have positive outcomes for hcps?
41.	What do you think about the effects of the implementation of quality management reporting systems in Kuwaiti hospitals in order to reduce the number of medication errors?
42.	Can the implementation of a new reporting system motivate or encourage you to report medication errors in your daily practice if the system is organized according to the "no-name – no blame" principle?
43.	How can the anonymity of a reporting system for recording medication errors in hospitals encourage healthcare providers and pharmacists to report their errors?
44.	Is there anything else you want to add regarding the cause, the type, the recording systems, and management of medication errors?

Single-choice questions without additional text responses

For single-choice questions without additional text responses, frequency tables were used to sum up the results (Table 2). There were some missing responses for each question at range of 22% to 29% per question. One-third of the participants had witnessed other people making medication errors (Q10), 46% of the participants indicated that their organization has a system in place for reporting medication errors (Q15) and the system is electronic (Q16). Approximately 41% of the participants received the necessary training about the process of reporting medication errors (Q34) and believed that the implementation of quality management reporting systems in Kuwaiti hospitals could reduce the number of medication errors (Q41), where 45% believed

Table 2. Demographics of the participants

Variable	Parameter	N	%
Age	25-34	226	33
	35-44	167	24
	45-54	152	22
	55-64	84	12
	65+	58	8
Gender	Female	404	59
	Male	283	41
Kuwaiti	Yes	576	84
	No	104	15
	Missing	7	1
Education	Diploma	149	22
	Associate degree	19	3
	Hospital or vocational trained	62	9
	Bachelor's degree	264	38
	Master's degree	94	14
	PhD	51	7
	Higher medical degree (fellowship)	46	7
	Missing	2	0
Affiliated hospital	Al Sabah Hospital	204	30
	Amiri Hospital	90	13
	Adan Hospital	19	3
	Mubarak Al-Kabeer Hospital	117	17
	Farwaniya Hospital	58	8
	Jahra Hospital	55	8
	Other	134	20
	Missing	10	2
Profession	Nurse	272	40
	Pharmacist	116	17
	Clinical/ward Pharmacist	104	15
	Doctor/Physician	195	28
Years of experience	2-5	202	29
	6-10	171	25
	11-15	119	17
	16-20	64	9
	21 plus	131	19

that the implementation of a new reporting system could motivate or encourage them to report medication errors in their daily practice if the system is organized according to the "no-name – no blame" principle (Q42) [7].

Single-choice questions with additional text responses

In Table 3 lists the additional text responses for the nine questions. The missing rates ranged from 22.0% to 29.3%. Over 40% of the participants (Q8) indicated that the concept of medication errors was: Any preventable event that may cause or lead to inappropriate medication use or patient harm. In the sample population, around 28% of all ward pharmacists had a MPharm degree (Q22), and as standard procedure, doctors may order medication for patient through prescription pad (15%) or pharmacists may order stock medication (15%, Q29). Almost 18% of the participants indicated that they did not receive any training or guidance in the hospital (Q35). Training was most provided by hospitals (27%), followed by professional associations (9%) (Q36).

Results demonstrated that there was significant relationship between all variables of demographic characteristics and responses for Q23, Q29, Q31, and Q36 ($p< 0.001$). In addition, a significant ($p<0.001$) and non-significant ($p>0.001$) association was recorded between various variables of demographic characteristics and responses for Q8, Q22, Q30, Q35 and Q37.

Table 3. Summary of single-choice questions without additional text responses

Questions	Answer	N	%
Q10: Have you ever witnessed other people making medication errors?	Yes	225	33
	No	251	37
	Prefer not to answer	60	9
	Missing	151	22
Q15: Can you tell me whether your organization has any system in place for reporting medication errors that occur in the workplace?	Yes	318	46
	No	218	32
	Missing	151	22
Q16: Is this system electronic or paper-based?	Electronic	317	46
	Paper-based	205	30
	Missing	165	24
Q17: Does this prescribing software have decision-making and drug-drug interactions prevention facilities?	Yes	286	42
	No	250	36
	Missing	151	22
Q18: How does the pharmacy in your organization receive prescriptions?	Online (electronic)	349	51
	Paper-based (manual)	187	27
	Missing	151	22
Q20: What are your thoughts about nationwide programs and systems for electronic prescriptions for hospitals?	Effective	249	36
	Ineffective	170	25
	Neutral	117	17
	Missing	151	22
Q34: Have you received the necessary training about the process of reporting medication errors?	Yes	278	41
	No	213	31
	Missing	196	29
Q41: What do you think about the effects of the implementation of quality management reporting systems in Kuwaiti hospitals in order to reduce the number of medication errors?	Reduce the number of medication errors	281	41
	Make no difference	72	11
	Increase the number of medication errors	58	8
	I am not sure	79	12
	Missing	197	29
Q42: Can the implementation of a new reporting system motivate or encourage you to report medication errors in your daily practice if the system is organized according to the "no-name – no blame" principle?	Yes	308	45
	No	88	13
	Maybe	93	14
	Missing	198	29

Multiple-answer questions with additional text responses

For multiple-answer questions with additional text responses, such as Q9, Q12, Q13, Q14, Q19, Q24, Q25, Q27, Q28, Q32-Q33, Q38, Q39, Q40, and Q43, the text responses were reviewed first and responses that were similar were placed within the same response category (existing or new categories). According to the participants, the top five medication errors were dose error (50%), missing medications (47%), prescription error (45%), poor communication between HCPs and patients (42%), and drugs names that sound alike and medications that look alike (40%). According to the participants, the top five effects of medication errors on patients and associated patient outcomes in their hospital were negligible effect on patient daily activities (56%), patient admitted to hospital (41%), patient toxicity (36%), moderate effect on patient daily activities (34%), and unbearable pain to the patient (30%). The top five reasons that medication errors still occur in hospitals were lack of clinical vigilance (51%), inadequate staff training (49%), lack of awareness (43%), inadequate competency of staff (37%), and improper supervision of staff (37%). Other notable reasons that medication errors still occur in Kuwait's hospitals include ineffective MU&M policies from management (36%) and inadequate staffing (4%). According to the participants, the top five processes of new prescription dispensing were (1) review patient dispensing history (64%), (2) check prescription details (62%), (3) ensure safe dosage (61%), (4) pre-dispensing check (44%), and (5) select product (39%) (see Supplement 2) [7].

Of the 687 survey participants, 506 had answered Q33. According to the participants, medication errors were often detected at dispensing stage (48%), at prescribing stage (42%), and at administration stage (42%). Participants further indicated that medication errors were often reported by HCPs who made the error (39%), by HCP who observed error made by another HCP (34%), by pharmacist who made the error (31%), and by physician who made the error (29%).

Open-ended questions

There were four open-ended questions (Q11, Q21, Q26, and Q44) in the interview survey. Of the 687 survey participants, 311 chose to answer Q21 (Table 4). According to participants, the numbers of ward/clinical pharmacists employed in the hospitals ranged from 0 to 10. Of the 311 answers, excluding responses of "I don't know" and "Not applicable", there were 244 answers, 151 (62%) indicated that the numbers of ward/clinical pharmacists employed in the hospitals were between 0 and 5, whereas 38% selected 6 and 10.

Table 4. Summary of single-choice questions with additional text responses

Response (Q8)	Frequency	% of total answered
Any preventable event that may cause or lead to inappropriate medication use or patient harm	276	40
A failure in the treatment process that leads to or has the potential to cause harm to the patients	144	21
An incorrect administration of a medication	111	16
Other	2	0.3
Missing	154	22
Response (Q22)	Frequency	% of total answered
Mpharm degree (Master of Sciences of Pharmacy)	191	28
Mpharm degree with pre-registration training program completed	103	15
PhD degree	50	7
All of the above	147	21
I don't know/ Not sure	27	4
Not applicable	18	3
Missing	151	22
Response (Q23)	Frequency	% of total answered
Electronically	288	42
On paper chart	144	21
By consulting with a doctor	94	14
Not applicable	2	0.3
I don't know/ Not sure	6	1
No review	2	0.3
Missing	151	22
Response (Q29)	Frequency	% of total answered
Pharmacist orders stock medication	103	15
Pharmacist orders refill of prescription	88	13
Doctors orders medication for patients through prescription pad	106	15
Doctors orders medication for patients through electronic system sent directly to pharmacist	197	29
I don't know/ Not sure	7	1
Not applicable	10	2
The medication aid/ nurses order the medications (ex: by faxing refill to the pharmacy)	4	0.6
Response (Q30)	Frequency	% of total answered
Each medication order is reviewed by a pharmacist	191	28
Medication order is reviewed by doctor on site prior to administration	104	15
Medication order is reviewed by nurse on site prior to administration	91	13
All new medication orders are handled by the ward pharmacist	46	7
New medication orders are managed by other clinical professionals if pharmacist not on site	67	10
I don't know/Not sure	9	1
Not applicable	4	0.6
No review was done	2	0.3
Missing	173	25
Response (Q31)	Frequency	% of total answered
Individual drug orders	145	25
Floor stock system	148	22
Unit dose distribution system	100	15
Automated dispensing system	78	11
I don't know/ Not sure	9	1
Not applicable	11	2
Unit dose distribution system + Floor stock system	2	0.3
Missing	194	28
Response (Q35)	Frequency	% of total answered
I did not receive any training or guidance in my hospital	121	18
Training on planning appropriate therapy for common indication	64	9
Guidance on writing a safe and legal prescription	54	8
Guidance on critically appraising the prescribing other HCPs	23	3
Training on calculating appropriate doses	30	4
Training on providing patients with appropriate information about their medication	59	9
Guidance on accessing reliable information about medicines	32	5
Training on detecting and reporting ADRs	42	6
Training on detecting and reporting medication allergies	42	6
All of the training/ guidance mentioned	5	0.7
Not applicable	14	2
Missing	201	29
Response (Q36)	Frequency	% of total answered
Hospital/ Institution	184	27
Medical Associations and Unions	60	9
Ministry of health	53	8
Pharmaceutical companies	40	6
Medical universities	22	3
Chief Medical Officer (CMO)	23	3
Learning and development department (L & D)	60	9
External training service	28	4
I don't know/ Not sure	2	0.3
No one	3	0.4
Not applicable	4	0.6
Nurses	3	0.4
Administration	2	0.3
Other	5	0.7
Missing	198	29
Response (Q37)	Frequency	% of total answered
Annual	232	34
2-4 times per year 2-4	168	25
5 + timing per year	81	12
No training needed	2	0.3
I dont know/ Not sure	3	0.4
Not applicable	2	0.3
Missing	199	29

Participants identified 19 medication errors they have experienced in the workplace (Figure 1 A). The analysis responses of Q11 also revealed the consequences of medication errors for healthcare professions (Figure 1B). Participants also mentioned consequences of medication errors for patients in the responses of Q11 (Figure 1C). Of the 310 participants who answered Q11, 17 had specified the consequences of medication errors for patients.

Figure 2 charts the responses of Q26.

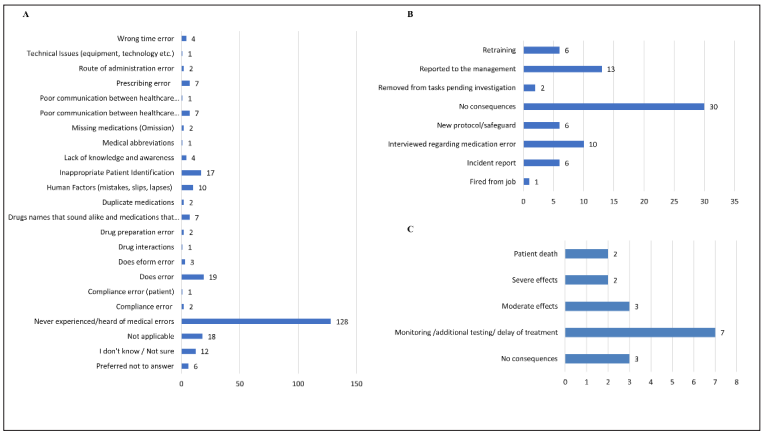

Figure 1. (A) Summary of Q11 responses – Frequency counts of medication errors experienced. (B) Summary of Q11 responses – Frequency counts of consequences of medication errors for healthcare professions. (C) Summary of Q11 responses – Frequency counts of consequences of medication errors for patients

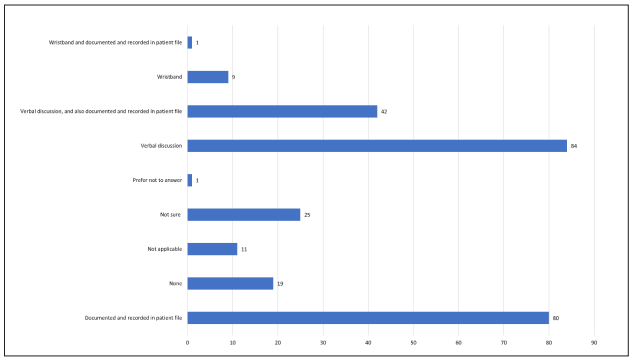

Figure 2. Summary of Q26 responses

DISCUSSION

A survey was done to learn more about HCPs attitudes and understanding of the processes and systems utilized by their local hospitals to report prescription errors. The link was sent to 900 HCPs, only 696 returned the completed survey, the 77% response rate is acceptable for the global online surveys responses [10]. In this survey, the majority of respondents have the age group between 25-34 years. Most of participants were female rather than male; however, this is normal and expected for HCP workforce – nationally and globally [11].

Our findings demonstrated that one-third of the participants had witnessed other people making medication errors. There was also a significant association between all variables of demographic characteristics and responses for Q15, Q18, and Q20 ($p<0.001$). In addition, a significant association was found between most of demographic characteristics (gender, Kuwaiti, affiliated hospital, profession and year of work experience) and responses for Q16 and Q17 ($p<0.001$). We saw only was non-significant association between demographic characteristics and responses for Q41 and Q42, respectively ($p>0.001$). What is more, no significant difference was seen among male and female levels of knowledge, however, education did bring about a difference; hence it is our belief that male and female participants can respond equally and apply the outcomes of training effectively. Our conclusions are that human variables, including a lack of knowledge, experience, skill, training, negligence, workload and focus are the possible causes of medical error [12].

The potential differences in medical error within health entities may be attributed to variations in organizational procedures for reporting medication errors and variations in the time frames during which the studies are conducted. System implementation is actually the responsibility of the organization; once they decide to implement paper based or electronic systems, then employees have to obey the orders. However, it is much better that before implementation, employees (both male and female) should consent – as they have to use the system. When an error is reported electronically, female doctors compared to their male counterparts, were more likely to correct a mistake[13]. However, the majority of doctors in Kuwait's primary healthcare facilities understood the value of e-prescribing to raise patient care standards, enhance workflow, boost output and lower medical errors. Still, E-prescribing systems need to have their infrastructure and design improved for Kuwait to use them [14].

All age groups, and participants, no matter the educational background or gender, agreed with the implementation of a system with no name and no blame because it will encourage the reporting of medical error without any fear of reprisal, as it is not scientifically justified to blame the employees or characterize them as indifferent, inexperienced or guilty. There may be exceptions, but most personnel want to perform a good job, decrease suffering and be proud of their work [15].

Those who participated in this study identified 19 medication errors they have experienced in the workplace. These are dose errors, inappropriate patient identification, human factors (mistakes, slips, and lapse), prescribing error, and poor communication between HCPs etc. Participants also mentioned consequences of medication errors for patients. However, confounding and issue of validity are more common in observation studies, thus, further study is needed to access a larger sample of respondents.

CONCLUSIONS

The results showed that the survey participants witnessed others making medication errors. However, they did not provide evidence to support this admission due to their fears of the implication on their colleague (punitive action), due to cultural appropriateness, or the shame of being a whistle blower. With respect to reporting systems, only 46% of the survey participants acknowledged the existence of a medication error reporting system in their facility. As for prescription writing, approximately 51% of the survey participants indicated that they use electronic prescribing software. Still, the overall usage rate of electronic prescribing systems is 49% of prescriptions being handwritten. The participants noted that the common consequence of medication errors was patient harm which may lead to unnecessary hospital admission, patient disability or death. Lastly, with respect to HCP training, 20% of the survey participants indicated

that they did not receive any training or guidance in the hospitals, those who indicated to have received training, revealed that the training focused mostly on safe and legal prescription writing. It should also be noted that, compared to younger adults, older adults demonstrated less mastery of the training material [16].

We believe that the Kuwaiti MoH should establish standardized guidelines and protocols on incident reporting, and implement a national electronic incident reporting system. In addition, hospitals and the MoH should encourage HCPs to report incidents through training and implementing policies absolving the name and shame culture, also to ensure record-keeping of reports for analysis.

SUPPLEMENTARY MATERIAL

Supplementary data are available at *International Journal of Pharmacy Practice* online.

CONFLICT OF INTEREST STATEMENT

The authors declared no conflict of interest in the manuscript.

ORCID iDs

Mohammad Saada https://orcid.org/0000-0002-0062-9779

REFERNCES

1. Bayazidi S, Zarezadeh Y, Zamanzadeh V, Parvan K. Medication error reporting rate and its barriers and facilitators among nurses. *J Caring Sci*. 2012;1(4):23-6.
2. Stewart D, Thomas B, MacLure K, Wilbur K, Wilby K, Pallivalapila A, Al Hail M. Exploring facilitators and barriers to medication error reporting among healthcare professionals in Qatar using the theoretical domains framework: A mixed-methods approach. *PloS One*. 2018;13(10):e0204987.
3. Samsiah A, Othman N, Jamshed S, Hassali MA. Perceptions and attitudes towards medication error reporting in primary care clinics: a qualitative study in Malaysia. *PLoS One*. 2016;11(12):pe0166114.
4. Badruddin S, Gul R, Dias J, Muhammad K, Roshan R. Health Care Professional as a Second Victim. *Clin Med Rev*. 2018;4(2):1-7.
5. Haw C, Stubbs J, Dickens GL. Barriers to the reporting of medication administration errors and near misses: an interview study of nurses at a psychiatric hospital. *J Psychiatr Ment Health Nurs*. 2014;21(9):797-80.
6. Alqubaisi M, Tonna A, Strath A, Stewart D. Exploring behavioural determinants relating to health professional reporting of medication errors. *Eur J Clin Pharmacol*. 2016;72:887-95.
7. Excerpt from: Saada M, Morrissey H, and Ball P. *Thesis in 'Reducing Medication Errors in Kuwaiti Government Hospitals through Pharmacovigilance*'. Doctoral dissertation, University of Wolverhampton; 2022. http://hdl.handle.net/2436/625066 (access: 1 March 2023)
8. Agresti A. *Categorical data analysis*. USA: Hoboken, NJ: John Wiley and Sons, Inc; 200.
9. Mehta CR, Patel NR. IBM SPSS *Exact Tests*. Cambridge: IBM Corporation; 2011. [https://www.sussex.ac.uk/its/pdfs/SPSS_Exact_Tests_19.pdf]
10. Lindemann N. *What's the average survey response rate*? [https://pointerpro.com/blog/average-survey-response-rate] (access: 23 June 2022).
11. *World Health Organization report 2019. Medication Safety in Transitions of Care.* [https://www.who.int/patientsafety/medication-safety/TransitionOfCare.pdf?ua=1] (access: 26 October 2021).
12. Ahmed Z, Saada M, Jones AM, AL-Hamid AM. Medical errors: Healthcare professionals' perspective at a tertiary hospital in Kuwait. *PLoS One*. 2019;14:e021703.
13. Wu AW, Folkman S, Mcphee SJ, LO B. Do house officers learn from their mistakes? *JAMA*. 1991;265: 089-4.
14. Almutairi BA, Potts HWW, AL-Azmi SF. Physicians' Perceptions of Electronic Prescribing with Electronic Medical Records in Kuwaiti Primary Healthcare Centres. *Sultan Qaboos Univ Med J*. 2018;18:476-42.
15. Hughes G. No name –no blame. Emerg Med J. 2013;30:9888.
16. Chen HC., Ill EFH, Bates RA. Situational and demographic influences on transfer system characteristics in organizations. *Perform Improve* Q. 2006;19:7-25.