

Medication Errors Understanding among the Healthcare Providers at the Health Clinics in Labuan Federal Territory

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Abstract

Introduction: As an early step to prevent medication error, strengthening the healthcare providers' knowledge about medication error is needed.

Objectives: This study aimed to assess the healthcare providers' knowledge and perception towards medication error and medication error reporting at the health clinics in Labuan Federal Territory.

Methods: This was a cross-sectional survey in which self-administered questionnaires were given to all healthcare providers except pharmacy's staffs working at the government health clinics in Labuan from 30 July 2018 to 17 August 2018. The questionnaire consisted of 4 parts, including demographic data, knowledge on medication error, perception towards medication error and perception towards medication error reporting.

Results: A total of 132 respondents were involved in the study. Only about 35% (n=46) of respondents answered all the questions about knowledge on medication error correctly. In terms of perception towards medication error, 95.4% (n=126) of the respondents thought that medication error is avoidable, and 87.8% (n=116) disagreed that it is not necessary to report if a medication error occurs but does not harm the patient. In terms of perception towards medication error reporting, 40.2% (n=53) of respondents were afraid of the negative consequences associated with medication error reporting.

Conclusion: The knowledge level of healthcare providers on medication error were still low despite generally positive perceptions towards medication error reporting. The knowledge on medication error needs to be improved through continuous education in order to increase medication error reporting and reduce medication errors.

Keywords: medication error, healthcare providers, look-alike sound-alike, knowledge

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Introduction

Medication error is any preventable event that leads to inappropriate use of medication and patient harm while the medication is under the healthcare providers' control (1,2). Among the common types of medication errors are prescribing errors, wrong dose errors and wrong drug errors. Medication error can cause harms to the patient such as severe injury or death (1). A study had shown that the prevalence of medication errors was 30.5% at an emergency department of a hospital in Malaysia (3). Other studies have also shown that medication errors are common issues occurring in the healthcare facilities and there were a few contributing factors identified, including individual, organization and working environment. Medication error may be committed by both experienced and inexperienced healthcare provider (4).

Patient safety is a common goal for every healthcare provider. Medication error reporting is a way of addressing the event of a medication error and the reporting is very important so that all healthcare providers can learn from it and thus improving the awareness regarding medication safety. Health managers generally considered preventing medication error as a high priority and healthcare providers need to take action towards medication error reports. Staffs are encouraged to report medication error and understand the negative consequences associated with medical error to reduce medical error incidents (5). The Pharmaceutical Services Programme of Ministry of Health Malaysia established the Medication Error Reporting System (MERS) since 2009. It is a national reporting system that serves as a platform to encourage healthcare professionals to report any medication error encountered (1).

A study reported that healthcare providers could have different levels of awareness on medication error and poor knowledge on medication error may affect the reporting of medication errors (6). Thus, knowing the medical staffs' understanding level about medication error is required to strengthen the current system of medication error reporting and prevent medication error. The aim of this study was to assess Labuan Federal Territory government health clinics' healthcare providers' knowledge and perception towards medication error. The finding from this study could help to strategise the plan to improve the perspective of healthcare providers towards the reporting of medication errors.

Methods

The study was a cross-sectional survey with self-administered questionnaires from 30 July 2018 to 17 August 2018. The study population involved all healthcare providers working at the health clinics in Labuan Federal Territory.

The questionnaire was developed, adapted and modified from literature review, in both English and Malay language. The validation of the questionnaire was done within the facility. The questionnaire consisted of four parts, which include demographic data, knowledge on medication error, perception towards medication error and perception towards medication error reporting. Part A (demographic data) had four questions. Part B had six questions that test the knowledge of healthcare providers on the facts about medication error, look alike sound alike (LASA) medications and Tallman lettering. A respondent was considered as having good knowledge if all the six questions were answered correctly. Part C consisted of six questions that assess the perceptions of healthcare providers towards medication errors. Part D had six questions to assess the perceptions of healthcare providers towards medication error reporting and three questions about the experience of medication error reporting. The answers to the perception questions in Part C and Part D were in the form of three-point Likert scale with the choices of disagree, neutral and agree.

The questionnaires were distributed to all healthcare providers working in the Labuan Federal Territory health clinics and were collected after three weeks. Permanent healthcare providers, including medical officers, medical assistants, nurses and dentists, working in the Outpatient Services, Maternal dan Child Health Clinic, ten Rural Clinics, Taman Mutiara Community Clinic, Dental Clinics and Urban Transformation Centre (UTC) Health Clinic were included in the study. The pharmacists and pharmacist assistants working in the health clinics were excluded because the study was conducted by the pharmacy unit. Participation in this research was entirely voluntary.

Data analysis was done using Microsoft Excel Worksheet. The frequency and percentage of responses were counted and tabulated according to knowledge on medication error, perceptions towards medication error and perceptions towards medication error reporting.

Results

A total of 165 questionnaires were distributed and the response rate was 80%. Thirty-three questionnaires were not returned. Among the 132 respondents, the majority of respondent were female (87.1%), aged 26-35 years old (58.3%) and with more than 10 years working experience (38.6%). Only a minority of the respondents had good knowledge on medication error (34.8%). Overall, the Medical Officers had the best understanding towards medication error, with 62.9% of them being able to obtain all correct answers (Table 1).

In terms of perception towards medication error (Table 2), 95.4% of the respondents agreed that medication errors were avoidable, and majority agreed that tiredness or stress level of healthcare providers (93.9%), not following the standard operating procedures (80.3%) and heavy workload (87.1%) contributed to medication errors. Most of them disagreed that it is not necessary to report a medication error that does not harm the patient (87.8%), and medication error is an embarrassing topic to discuss with colleagues (77.3%).

In terms of perceptions towards medication error reporting (Table 3), there were mixed opinions about the liability for legal punishment and fear of negative consequences associated with medication error reporting. A high proportion of respondents disagreed that reporting medication error is not important (88.6%) and agreed that the staffs were supported for reporting medication error in their workplace (91.7%). Most respondents agreed that their departments take corrective actions based on the reported medication errors to improve medication safety (94.7%), and medication error reporting prevents the similar medication error from reoccurring (96.7%). Despite the positive perceptions towards medication error reporting, only 14 respondents (10.6%) declared that they had ever reported a medication error (Table 4).

Table 1: Demographic data of healthcare providers included in the study and their knowledge level about medication error (n=132)

	Healthcare Providers, n (%)				Total
	Medical Assistant	Medical Officer	Dentist	Nurse	
Gender					
Male	9 (90.0)	6 (22.2)	1 (6.7)	1 (1.3)	17 (12.9)
Female	1 (10.0)	21 (77.7)	14 (93.3)	79 (98.8)	115 (87.1)
Age group					
Below 25 years	4 (40.0)	0	9 (60.0)	0	13 (9.8)
26 – 35 years	6 (60.0)	25 (92.6)	5 (33.3)	41 (51.2)	77 (58.3)
36 - 45 years	0	2 (7.4)	0	29 (36.3)	31 (23.4)
Above 45 years	0	0	1 (6.7)	10 (12.5)	11 (8.3)
Working experience					
Below 1 year	0	0	7 (46.4)	0	7 (5.3)
1 – 5 years	9 (90.0)	20 (74.1)	7 (46.4)	13 (16.3)	49 (37.1)
6 - 10 years	1 (10.0)	6 (22.2)	0	18 (22.5)	25 (18.9)
Above 10 years	0	1 (3.7)	1 (6.7)	49 (61.3)	51 (38.6)
Knowledge					
Good	3 (30.0)	17 (62.9)	2 (13.3)	24 (30.0)	46 (34.8)
Inadequate	7 (70.0)	10 (37.1)	13 (86.7)	56 (70.0)	86 (65.2)

Table 2: Perceptions of healthcare providers towards medication error (n=132)

Question	Disagree, n (%)	Neutral, n (%)	Agree, n (%)
1. Tiredness or stress of staff may cause medication errors.	7 (5.3)	1 (0.8)	124 (93.9)
2. A medication error is avoidable.	2 (1.5)	4 (3.0)	126 (95.4)
3. A medication error is a result of standard operating procedures that were not followed.	8 (6.1)	18 (13.6)	106 (80.3)
4. It is not necessary to report if a medication error occurs but does not harm the patient.	116 (87.8)	8 (6.0)	8 (6.0)
5. It is embarrassing to discuss medication error with colleagues.	102 (77.3)	19 (14.4)	11 (8.3)
6. A heavy workload will increase the number of medication errors.	7 (5.33)	10 (7.6)	115 (87.1)

Table 3: Perceptions of healthcare providers towards medication error reporting (n=132)

Question	Disagree, n (%)	Neutral, n (%)	Agree, n (%)
1. Persons responsible for medication error are liable for legal punishment.	59 (44.7)	45 (34.1)	28 (21.2)
2. I am afraid of the negative consequences associated with medication error reporting.	41 (31.3)	38 (28.8)	53 (40.2)
3. It is not important to report a medication error.	117 (88.6)	8 (6.1)	7 (5.3)
4. Staffs are supported for reporting medication error in my workplace.	5 (3.8)	6 (4.5)	121 (91.7)
5. My department takes corrective action on reported medication error (near-miss/ incident) to improve medication safety.	0	7 (5.3)	125 (94.7)
6. Reporting of the medication error prevents the same medication error from reoccurring.	1 (0.8)	3 (2.3)	128 (96.7)

Table 4: Proportion of the action taken by the healthcare providers to report the medication error (n=14)

HCP	HCP that had ever reported ME, n (%)	ME reporting method, n (%)		
		MERS online	ME manual form	Report to superior
Medical assistant	3 (2.3)	0	0	3 (21.4)
Medical officer	3 (2.3)	0	1 (7.1)	2 (14.3)
Dentist	1 (0.8)	0	0	1 (7.1)
Nurse	7 (5.3)	1 (7.1)	0	6 (42.9)
Total	14 (10.6)	1 (7.1)	1 (7.1)	12 (85.7)

Abbreviation: HCP – healthcare provider; MERS – medication error reporting system; ME – medication error

Discussion

As defined by the United States National Coordinating Council for Medication Error Reporting and Prevention, medication error is “any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures and systems, including prescribing, order communication, product labelling, packaging and nomenclature, compounding, dispensing, distribution, administration, education, monitoring and use” (2). This study revealed that medication error knowledge was still unsatisfactory, with only about 35% among the healthcare providers working in the health clinics in Labuan Federal Territory. A poor understanding about medication error among the practicing healthcare providers could result in significant risk for medication error (7).

Among the questions in the Knowledge domain of the questionnaire were questions about the need to store LASA medications separately and using Tallman lettering to prevent medication error. According to World Health Organisation (WHO), the existence of confusing drug names is one of the most common causes of medication error and is of concern worldwide (8). The Institute for Safe Medication Practices (ISMP) published the list of medication name pairs commonly involved in medication error and many LASA combinations could potentially cause error (9). LASA medications with spelling similarities or similar phonetics and even product packaging may at some point contribute to medication error (10). Therefore, education and promotion on the management of LASA medications are needed as there were still under-exposure among the healthcare providers as shown in this study. One of the preventions of medication errors related to LASA medications is by separating them from their pair. As simple as just storing the LASA medications separately and avoiding immediate proximity to one another will create a safer environment for medication safety (9,10). In addition, the Ministry of Health Malaysia promotes the practice of Tall Man lettering to differentiate the sound-alike medications' names, by means of writing part of medicine name in upper case letters to provide distinction between LASA from one another. This is especially crucial for medications in the emergency trolleys (10).

From our findings, the majority of healthcare providers agreed that staff wellbeing (tiredness or stress level), failure to comply to standard operating procedures, and a heavy workload might contribute to medication errors. Another study also supported that heavy workload was one of the highest contributing factors contributing to medication errors among the nurses in government hospitals (11). Heavy workload may cause staff tiredness and affect their stress level, which may eventually increase the number of medication errors. All these three factors were preventable and must be taken care of to ensure patient safety and to provide a high-quality healthcare services to the public.

One of the ways to create awareness for medication safety is by reporting medication errors. However, under-reporting of medication error is an issue, and this could be due to several factors that hindered the healthcare providers from reporting medication errors. Our study demonstrated that the majority of healthcare providers agreed that it was important to report medications error (88.6%), but almost half (40.2%) of them were afraid of the negative consequences associated with medication error reporting. Therefore, emotion and beliefs about the consequences could be the major barriers that hindered medication error reporting among healthcare providers at health clinics in Labuan Federal Territory. Stewart *et al.* (2018) discussed the facilitators and barriers to medication error reporting among healthcare providers in Qatar, among which the emotions (fear and worry) and beliefs about the consequences were the major barriers to medication error reporting, particularly among the younger and less experienced healthcare

providers (12). Healthcare providers could be afraid to report medication error, which may affect their performance evaluation and career progression. In addition, the impact on working relationships among the colleagues and the potential lack of confidentiality were also among the few negative perceptions on medication error reporting.

In this, only 10.6% of healthcare providers had ever reported a medication error. The issue of medication error under-reporting was addressed in many studies which believed there could be a high number of medication error cases, but the cases were limitedly reported (13-15). A hospital in Ireland demonstrated that medication error reporting level was increased substantially when a system of regular feedback to staff was introduced to encourage continuing reporting and improve the awareness for medication safety. The hospital implemented a medication safety project that involved the appointment of a medication safety facilitator, establishing an online reporting system, and eliminated the focus on personal failure. All the reported events were responded with devised action plans and alerts, and separate bulletins for nursing and medical staff were also made to highlight the risk reduction measures relevant to their practice scopes (16).

The main limitation of the study was the three-week period between the distribution of questionnaires and collection of responses. Furthermore, the respondents answered the questionnaires without being monitored by the investigators and discussion among the respondents were possible and thus, may affect the findings of the study.

Conclusion

Medication errors understanding among the healthcare providers working at the government health clinics in Labuan Federal Territory was unsatisfactory. However, majority of healthcare providers have good perception towards medication error and its reporting. In order to increase medication error reporting, continuous education and training of standard operational procedure of medication error reporting need to be provided regularly by the pharmacists to other healthcare providers.

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Conflict of Interest Statement

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