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FACTORS CONTRIBUTING TO MEDICATION ERRORS AND FAILURE TO REPORT ERRORS AMONG U29 NURSES IN HOSPITAL UNIVERSITY SAINS MALAYSIA

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ABSTRACT

This quantitative-oriented research was conducted to identify factors that contributed to errors in dispensing medication among nurses and to understand why nurses did not report their errors in dispensing. In this study a total of 284 U29 nurses participated in focusing on factors contributing to medication errors and failure to report the errors. In this study, analysis of the data collected was made in two sections; dispensing errors and failure to report the errors in giving medication. According to Evans *et al.* (2006) although nurses may not admit directly to such errors, they expressed their perceptions towards situations described in the questionnaire items as contributing to medication errors among nurses. Almost all in the sample of 284 chose not to report medication errors because they could not identify the cause of dispensing errors; other nurses perceived that the individual involved is not competent in performing the task. Other reasons include fear that the action will be exposed by the management, to avoid publicity from the media, and there is no difference in reporting or not reporting the medication errors. This study was done not only for exploring factors of medication errors; it also aspires to identify problems that arise in hospital services and in order to maintain the quality of health care. The management should consider the impact of medication errors and failure to report medication errors on the nursing profession and quality image of the hospital.

Keywords: Nursing; Contributing factors; Medication errors; Failure to report the errors

INTRODUCTION

Dispensing medication is one of the job descriptions of nurses. Together with their varied roles as a nurse, they need to be knowledgeable and adhere to the best practices to ensure no errors happen that can bring risks and danger to the patients. Knowledge of the latest medication in the health scene today indeed gives a strong impact in solving problems in and out of the hospital (Ashby, 1997). Health care in the hospital involves dispensing medication among the nurses. A well trained registered nurse is efficient in managing medication. Studies showed that knowledge of dispensing medication both theoritical and practical is of utmost important to ensure patient received the right medication and errors in dispensing constitute failure of the system and the lack of efficiency on the part of a registered nurse (Brady *et al*., 2009; Reid-Searl, 2011).

OBJECTIVES

This study hoped to ascertain the level of dispensing errors among nurses and to understand its contributing factors and reasons why nurses fail to report their errors

in dispensing among U29 nurses at Hospital Universiti Sains Malaysia, HUSM. The objectives are as follows:

1. To determine the level of dispensing errors among U29 nurses at HUSM.

2. To ascertain factors contributing to dispensing errors among U29 nurses at HUSM.

3. To uncover main reasons why nurses fail to report their errors in dispensing.

PAST STUDIES

Errors in dispensing included errors committed by nurses in terms of dosage, ignorance of the side effects of certain medication, action of a drug on the physiology and psychology of patients, and lack of skills required to handle the side effects of a medication (Kaushal *et al*., 2001). Prior studies have showed that as many as 45.6 % fail to report errors in dispensing in Taiwan (Blegen *et al*., 2004). In United States, an estimated 20% errors in dispensing were committed by hospital nurses (Durieux *et al*., 2007). A study in US revealed that 22% errors in dispensing arised from lack of knowledge about the medication. Errors include lack of awareness of the action of certain drugs, wrong dosage, wrong preparation and infusion that is too fast. The next cause was lack of knowledge about their patient (14%) and wrong way of administrating a drug (Hodgkinson *et al*., 2006). Study in Australia associated the errors in dispensing with the environment, 2% errors were due to prescription by specialist that were not precise or not clear and their lack of knowledge on the usage of the drug.

Nurses are not ready to report errors in dispensing for fear of the negative consequences from their administrators who would not support them and their profession is challenged. Moreover, trust from patients will be waned and chances of facing disciplinary actions (Uribe *et al*., 2002). If a nurse is sure of positive support from the administrators, reporting errors in dispensing would improve the image of nurses who carry out their tasks deligently and improve their health care service (Mayo & Duncan, 2004).

Studies showed that 39% errors are caused by personal factors such as failure to examine a medication following a standard operating procedures set out, lack of knowledge regarding new medications given to patients, wrong labelling and leaving behind medications for patients who were asleep. 32 % of errors were caused by administrative factors that play an important role such as lack of staffing, too many patients, frequent bed changes by patients, interruption when preparing the medication and lack of knowledge about the patient in the ward (Bellebaum, 2010). Most studies associated environmental factors to the efficiency of a nurse. Noisy environment, dimly litted and morbid rooms are negative factors (Blendon *et al*., 2002). Study by Antonow *et al*. (2000) shows that errors by nurses were reported as accidents. Errors involved four stages; prescribe, transcribe, dispensing and administering. Problems in administration like the organisation, structure and quality of staff communication, heavy work load and working culture can affect the quality of nursing and invites errors in dispensing. On the whole, the evidence for the efficiency of intervention strategies to decrease the incidence of medication errors is weak and high-quality controlled trials are essential in all areas of medication prescription and delivery (Hogkinson *et al*., 2006).

METHODOLOGY

SAMPLE

Study population involves all U29 nurses working at HUSM. Sample was chosen using "convenience sampling". Sample chosen based on respondent who are easily encountered in the HUSM wards. A total of 284 nurses participated in this study. Participants in this study include 120 nurses (42.3%) aged 40 years and above, 69 nurses (24.3%) aged 30-35 years, 49 nurses (17.3%) aged 25-30 years and 46 nurses (16.2%) aged 20-25 years. Only 23 nurses (8.1%) were male while the majority was female, about 261 nurses (91.9%). U29 nurses involved in this study were grouped into three; 88 nurses with nursing certificate (31.0%), 176 nurses with Diploma (62.0%) and 20 nurses with degrees but still at Grade U29 (7.0%). They can also be classified under three categories based on their marital status that is 151 married nurses (53.2%), 127 single nurses (44.7%) and six divorced nurses (2.1%). When they were grouped based on their working experience, 60 nurses with 5 years experience (21.1%), 97 nurses with 5-10 years (34.2%), 59 nurses with 10-15 years (20.8%) and 68 nurses with more than 15 years experience(23.9%).

INSTRUMENTATION

The questionnaire constructed for this study consisted of three sections. Section A focused on socio demographic data including age, level of education and working experience. Perception towards errors in dispensing was measured using 15 items in Section B based on the five point Likert Scale. Perception towards failure to report errors in dispensing is measured using 10 items in Section C. Here respondents were just required to indicate a Yes-No answer. The questionnaire only took roughly 15 to 20 minutes to complete.

In order to increase the validity of the questionnaire items, they were content validated by three academician; one in the field of nursing, a pharmacist and another doctor in the medical unit. An initial pilot testing was carried out with 30 U29 nurses working in another hospital that is at Hospital Raja Perempuan Zainab, HRPZ for reliability purposes. Cronbach Alpha value obtained for the 15 items in Section B was 0.988 while Kuder Richardson-20 obtained for the 10 items in Section C was 0.887. Both the values exceeded the accepted value of 0.7.

DATA ANALYSIS

Errors in Medication

Each demographic data were crosstabulated with their admittance of errors in dispensing medication. As the nurses progressed in age, the ratio of those who committed errors in medication reduced. All the 23 male nurses denied ever committing errors in medication compared to the 83 female nurses who commited and 178 female nurses who did not. Ratio of U29 nurses who made errors was higher among the certificate holders compared to the diploma holders.

Single and divorced nurses denied ever committing errors in dispensing medication compared to their married counterparts. Errors in dispensing medication among U29 nurses reduced with increasing work experience. See Table 1.

Table 1: Socio-demographic Factors and Medication Errors

Years of Age	Yes	No	Chi Square	df	*p*
20-25	35	11	167.107	3	0.000*
25-30	20	29			
30-35	28	41			
40 and above	0	120			
	Yes	No	Chi-Square	Df	*p*
Gender:					
Female	83	178	10.334	1	0.000*
Male	0	23			
Educational Level:					
Certificate	63	25	111.767	2	0.000*
Diploma	20	156			
Degree	0	20			
Marital Status:					
Married	83	68	103.294	2	0.000*
Single	0	127			
Divorced	0	6			
Working Experience (Years):					
< 5	55	5	165.548	3	0.000*
5-10	28	69			
10-15	0	59			
>15	0	68			

**Significant at p<0.05*

Failure to Report Errors in Medication

Each demographic data of respondents were crosstabulated with their admittance to failure to report errors in dispensing medication. Only U29 nurses in the 20-25 years age group indicated incidences of failure to report their errors. Only U29 nurses who are certificate holders indicated incidences of failure to report errors in medication in HUSM. Only married U29 nurses indicated incidences of failure to report errors in dispensing medication at HUSM. Only U29 nurses with less than five years of working experience indicated incidences of failure to report errors in medication. See Table 2.

Table 2: Socio-demographic Factors and Failure to Report Medication Errors

	Yes	No	Chi Square	df	*p*
Age (Years):					
20-25	29	17	167.107	3	0.000*
25-30	0	49			
30-35	0	69			
40 and above	0	120			
Gender :					
Female	29	232	2.846	1	0.92
Male	0	23			
Educational Level:					
Certific ate	29	59	71.937	2	0.000*
Diploma	0	176			
Degree	0	20			
Marital Status:					
Married	29	122	28.448[a]	2	0.000*
Single	0	12			
Divorced	0	6			
Working Experience:					
< 5 Tahun	29	31	120.579	3	0.000*
5-10 Tahun	0	97			
10-15 Tahun	0	59			
>15 Tahun	0	68			

**Significant at p<0.05*

Perceptions to Errors in Medication

t-test analyses were used to compare the perceptions of two groups of nurses towards errors in medication; nurses who answered "Yes" and those who answered "No" to such errors. There is significant difference in perception between the two groups of nurses based on their admittance. See Table 3.

Table 3: *Difference in Perception towards Medication Errors*

Admittance	n	Mean	*t*	*p*
Yes	83	27.24	-19.263	0.001*
No	201	58.52		

**Significant at p<0.05*

Table 4: *Difference in Perception towards Failure to Report Medication Errors*

Admittance	n	Mean	*t*	*p*
Yes	29	10.79	-0.48	0.632
No	255	10.96		

Perceptions to Failure to Report Errors in Medication

t-test analyses were used to compare the perceptions of two groups of nurses towards failure to report errors in medication; nurses who answered "Yes" and those who answered "No" to such errors. There is no significant difference in perception between the two groups of nurses based on their admittance. Reason may be there are those that fail to report errors because they did not commit any errors in medication.

DISCUSSION AND CONCLUSION

Analyses were carried out based on two aspects. These were Errors in Medication and Failure to Report Errors in Medication. Only nurses in the 20-25 years age group admitted to commiting errors in dispensing medication. When nurses under study were categorized into those who committed errors in dispensing medication and those who do not, those who admitted committing such errors rejected the contributing factors proposed in the questionnaire. This differed from those who had no error; they agreed that the factors proposed are the main contributing factors to errors in dispensing.

With regard to failure to report errors in medication, nurses were categorized into those who reported their errors and those who do not. Almost all of the 284 nurses under study chose not to report their errors if any because it would not be of any benefit to their quality of service but instead it would jeapardised their carreers.

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