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Original Research Article

A Study to Assess the Knowledge Regarding Medication Error among Staff Nurses at SGRD Hospital, Amritsar, Punjab

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ABSTRACT

The main professional goal of nurses is to provide and improve human health. Medication errors are among the most common health threatening mistakes that affect patient care. Such mistakes are considered as a global problem which increases mortality rates, length of hospital stay, and related costs. A descriptive study was conducted to assess the knowledge regarding medication error among staff nurses. Data was collected from staff nurses at SGRD hospital, Amritsar, Punjab. Convenience sampling technique was employed to obtain sample of 100 staff nurses who were working in different clinical areas. A self structured questionnaire was used for the collection of data. The data was gathered and analyzed by calculating the frequency, percentage, mean, mean percentage, standard deviation and chi square. The present study findings revealed that 61% of nurses were having average knowledge score followed by 32% in poor score and 7% in good score. There was highly significant association of knowledge with selected clinical variables i-e average number of patients per day and any in-service education attended on medication error.

Key Words: knowledge, medication error, staff nurses.

INTRODUCTION

Patient safety is a common goal for every healthcare provider. One of the major issues for safety is medication errors. It is important indicator of health care delivery system because potential injury to patients. [1] The person is most often ill or injured and in need of medical treatment, continuous nursing care round the clock or monitoring by advanced care by registered nurse, physician, or other health care provider in hospital environment. Medical treatment includes means the management and care of a patient to combat disease or disorder It includes use of prescribed drugs, physical and emotional care and dietary management. [2] Medication error is one of the major concerns of the nursing professionals internationally. Medication errors that nurses make violate the precept "does no harm" and may cost a human life. A systematic approach to determine the underlying factors in the occurrence of medication errors is required for the safety of both patients and the staff. [3]

Giving medicine is probably one of the most critical duties of nurses since the resulting errors may have unintended, serious consequences for the patient [4] Medication errors can significantly affect patient safety and treatment costs and result in hazards for patients and their families. [5]

A medication error is a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient. [6] A medication error can cause or lead to

inappropriate medication use or patient harm [7] while patient is admitted in hospital, may suffers from different types of medication errors. These are various type of errors such as prescribing, omission, improper dose, unauthorized drug, deteriorated drug, wrong time, wrong dosage, wrong drug preparation, wrong administration technique, monitoring and compliance error. [8] Prescription errors are the highest contributors around 70% of total medication errors. [9] Gurwitz et al assessed the incidence and preventability of adverse drug events in older patients in the ambulatory care setting and found that most errors occurred at the prescribing (58.4%) and monitoring stage (60.8%). [10] Only 45.6% nurses believed that all drug errors are reported, and reasons for not reporting include fear of manager and peer reactions. The study findings can be used in programs designed to promote medication error recognition and reduce or eliminate barriers to reporting. [11] A prospective study was conducted over period of 6 years in general surgery wards, observed that majority of medication errors were prescribing errors (60.4%), followed by administration errors (38.6%) and dispensing errors (9.8%). The common reasons observed for medication errors were omission error (25%), incorrect drug selection (14%), wrong frequency (10%), poor patient adherence to medicines (7%), drug use without indication (7%), improper dose (6%), wrong administration (4%) and wrong time (3%). [12]

Although medication errors can be caused by all members of health care team, nursing medication errors are the most common. [13] The reason is that nurses execute the majority of medical orders and spend about 40% of their time in the hospital to administer medicines. It is therefore a challenging issue for the health care settings as these errors cause a great threat to the safety of patients and can be minimized if patients are monitored correctly on time. As nurses, are often the last "gatekeeper" in the administration process to prevent medication errors. It is important to take the time needed to ensure patient safety, and to minimize distractions throughout the process by following various strategies The rights of medication administration, independent double checks, medication review, knowledge, patient education and practice environment. [14]

Assumptions:

1. Staff nurses have various level of knowledge regarding medication error.
2. Medication errors are significant with clinical variables.

Objectives:

1. To assess the knowledge regarding medication error among staff nurses
2. To find out association of knowledge regarding medication error with selected variables.

MATERIALS AND METHODS

The quantitative research approach was adopted with a descriptive design to assess knowledge of nurses regarding medication error. The study was conducted at SGRD hospital, Amritsar, Punjab. The researcher recruited 100 nurses through convenience sampling with inclusion criteria who were willing to participate in this study and exclusion criteria that who were not available during data collection. Data was collected from nurses in May 2017. The research instrument was divided into three parts i-e part A: Socio-demographic profile, part B: clinical profile, part C: self structured questionnaire (30 items). The criterion measure used in the study was extent of score on level of knowledge. Maximum obtainable score was 30 and divided into three categories i.e. good: 26-30, average: 18-25 and poor: ≤18.

Tool was prepared by extensive review of literature and validated by experts of medical and nursing. Ethical permission was obtained from research and ethical committee of institution. After gaining approval, permission was taken from medical and nursing superintendent of hospital to conduct research study. Confidentiality and anonymity were maintained during and after data collection.

RESULTS

Table 1: shows frequency and percentage distribution of socio-demographic profile of staff nurses. Majority of staff nurses, 90% were found in the age group 21-40 years of age followed by 8% less than 21 years and 2% in 41-50 age group. Most of the nurses were female i-e 98% and 2% were male. Regarding professional qualification, most of the nurses (49%) were qualified as G.N.M, 31% as B.Sc Nursing, 19% as P.B B.Sc Nursing and only 1% as M.Sc Nursing.

Table 1: Frequency and percentage distribution of socio-demographic profile of staff nurses. N=100

Sr. No.	Socio-demographic variables	f (%)
1.	Age (in years)	
	<21	08 (08)
	21-40	90 (90)
	41-50	02 (02)
2.	Gender	
	Male	02(02)
	Female	98 (98)
3.	Professional qualification	
	GNM Nursing	49 (49)
	B.Sc. Nursing	31 (31)
	P.B.B.Sc. Nursing	19 (19)
	M.Sc. Nursing	01(01)

Table 2: Frequency and percentage distribution of clinical profile of staff nurses. N=100

Sr. No.	Clinical variables	f (%)
1.	**Clinical experience (in years)**	
	<5	62 (62)
	5-10	32 (32)
	11-15	06 (06)
2.	**Clinical area of working**	
	Medicine ward	18 (18)
	Surgery Ward	19 (19)
	Ortho ward	18 (18)
	Cancer Ward	17 (17)
	Intensive Care Unit	28 (28)
3.	**Average number of patient per day**	
	1-10	34 (34)
	11-20	39 (39)
	21-30	22 (22)
	>30	05 (05)
4.	**Attended any in-service education on medication error**	
	yes	44 (44)
	No	56 (56)

Table 2: depicts the frequency and percentage distribution of clinical profile of staff nurses. The majority of nurses i.e. 62% had less than 5 years of experience, 32% had 5-10 years experience followed by 6% had 11-15 years of experience. As per clinical working status, most of the nurses were found to be working in intensive care unit i-e 28%, 18 % in both medicine ward & ortho ward, 19% in surgery ward and 17% in cancer ward.

Regarding average number of patients per day, 39%, 34%, 22% and 5% were found to attend 11-20, 1-10, 21-30 and >30 patients per day. Most of the nurses, 56% had not attended any in-service programme, remaining 44% had attended in-service programme on medication error.

Table 3: Level of knowledge regarding medication error among staff nurses. N=100

Level of Knowledge	Scoring Criteria	f	%	Mean	SD
Good	26-30	08	08.0	19.56	4.265
Average	18-25	61	61.0		
Poor	<18	32	32.0		

Table 3: depicts level of knowledge among staff nurses regarding medication error. Most of the nurses 61% were found to be having average score followed by 32% having poor score and only 8% of nurses were having good knowledge score. The calculated mean and standard deviation was 19.56 and 4.265

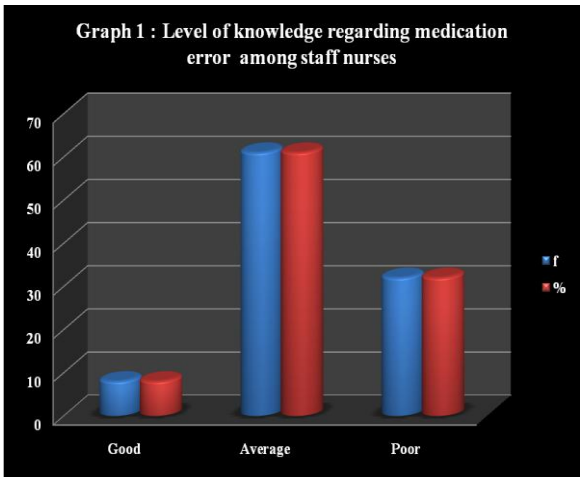

Table 4: reveals that association between level of knowledge regarding medication error with selected socio-demographic variables. Age, gender and professional qualification variables found non-significant here calculated χ^2 value< tabulated χ^2 value at level of significant p-value 0.05.

Table4: Association of knowledge regarding medication error among staff nurses with selected socio-demographic variables. N=100

S. No.	Socio-demographic Variables	Level of Knowledge			χ^2 Value	df	p-value
		Good	Average	Poor			
1.	Age (in years)						
	<21	2	06	00			
	21-40	6	54	29	06.315	4	.177^{NS}
	41-50	0	01	03			
2.	Gender						
	Male	0	02	00	01.272	2	.530^{NS}
	Female	8	59	31			
3.	Professional qualification						
	GNM Nursing	2	26	21			
	B.Sc. Nursing	2	22	06	11.801	6	.067^{NS}
	P.B.B.Sc. Nursing	4	12	04			
	M.Sc. Nursing	0	01	00			

Note: NS= Non-significant

Table 5: Association of knowledge regarding medication error among staff nurses with selected clinical variables. N=100

S. No.	Clinical Variables	Level of Knowledge			χ^2 Value	df	p-value
		Good	Average	Poor			
1	Clinical experience (in years)						
	<5	8	39	15			
	5-10	0	19	13	08.176	4	.085^{NS}
	11-15	0	03	03			
2.	Area of working						
	Medicine ward	4	09	05			
	Surgery Ward	0	14	05			
	Ortho ward	0	13	05	12.530	8	.129^{NS}
	Cancer Ward	0	10	07			
	Intensive Care Unit	4	15	09			
3.	Average number of patient per day						
	1-10	2	22	10			
	11-20	4	25	10	19.076	8	.014^{S}
	21-30	0	12	10			
	>30	2	01	02			
4	Attended any in-service education on medication error						
	yes	8	26	09	12.639	2	.002^{S}
	No	0	35	22			

Note: NS= Non-significant, S= Significant.

Table 5: represents that association between level of knowledge regarding medication error with selected clinical variables. Clinical experience and area of working variables found non-significant here calculated χ^2 value< tabulated χ^2 value at level of significant p-value 0.05. But others variable such as average number of patient per day and attended any in-service education on medication error found significant here calculated χ^2 value> tabulated χ^2 value at level of significant p-value 0.05.

DISCUSSION

Medication error is the consequence of individual negligence to system failure leading to various disasters. The study was conducted to assess knowledge regarding medication error among staff nurses. The results revealed that 61% of nurses were having average knowledge score followed by 32% in poor score and 7% in good score. This is congruent with findings from other studies conducted by Sewal RK to evaluate awareness about medication errors amongst health-care personnel representing North, East, West Regions of India which is found that 18.45%, 39.48%, 14.16%, 27.9% of respondents were having excellent, good, average, poor knowledge respectively regarding the fundamentals of medication error. [15]

The present study findings revealed that there was no significant association between medication error with selected variables such as age of staff, gender, professional education status, clinical experience and clinical area of working as evidenced from value of chi square. But there was highly significant association of knowledge with selected clinical variables i-

e average number of patients per day and any in-service education attended on medication error. Similar study was conducted by Mohanty S. on awareness of medication error, medication management and prevention among staff nurses. The findings shows that there was no significant difference found between knowledge score and age ($p \geq 0.22$), gender ($p \geq 0.80$), professional qualification ($p \geq 0.41$). years of experience ($p \geq 0.63$) at a level of significance ($p \leq 0.05$). [16]

CONCLUSION

Medication administration is the basic function of nurse. So the nurses should be well equipped with skill and knowledge needed for error free medication. The present study was undertaken to assess knowledge of nurses regarding ME. The study results revealed that majority of nurses 90% were found in age group 21-40 years. Most of the nurses (98%) were female with 49% qualified with GNM exhibiting less than 5 years of clinical experience among 62%. Most of the nurses were found working in ICU i-e 28%. Among total sample of 100 nurses, majority of nurses 56% had not attended any in-service programme on medication error.

The present study findings concluded that most of the nurses were having average knowledge score which is 61%. The study revealed that there was significant association of knowledge with selected socio-demographic variable i-e average number of patient per day and in-service programme on medication error.

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Conflict of interest: The authors have no conflict of interest to declare.

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