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ORIGINAL RESEARCH

A Descriptive study to assess the knowledge regarding safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab

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ABSTRACT

Introduction: Medication errors are the number-first error in health care (Centres for Disease Control [CDC], 2013). Safe and right medication administration is a major and potentially challenging nursing responsibility. Medication administration requires fine decision-making skills and clinical judgment hence, the nurse is accountable for ensuring full apprehension of medication administration and its involvement for patient safety. **Aim**: The aim of study was to assess the knowledge regarding safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. **Materials and methods:** A quantitative research approach with a descriptive research design was selected for the study. Total sampling was done on 100 among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. A structured Questionnaire containing 30 multiple choice items were used to assess the knowledge regarding safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. Both descriptive and inferential statistical methods were used for the analysis of data. Chi-square test was applied to find out the association between knowledge of staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. with selected variables. **Results:** The results of the present study revealed that the majority of staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. have adequate knowledge i.e. 70%. and 23% have moderate knowledge, on the other hand 7% have inadequate knowledge There is a significant relationship of knowledge with demographic variables i.e. age (x^2=16.351, p=0.00), education (x^2=15.364, p=0.004) and no. of staffs working in the ward (x^2=13.738, p=0.008), no. of patient ratio in the ward ((x^2=9.329, p=0.049) found statistically significant at 0.05 level. Whereas others gender, working unit, and no. of patients in the ward found non-significant at 0.05 level. **Conclusion:** It is concluded that there was the majority of staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab. have adequate knowledge i.e. 70%. and 23% have moderate knowledge, on the other hand 7% have inadequate knowledge inadequate knowledge. and there should be informational booklet to enhance the knowledge of staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

Keywords: CDC, (x^2= Chi-Square), GMC.

BACKGROUND OF THE STUDY

"THE ERROR OF ONE MOMENT BECOMES THESORROW OFWHOLE LIFE"- CHINESE PROVERB

INTRODUCTION

In the Institute of Medicine's its often-cited book *To Err Is Human: Building a Safer Health System* (Kohn, Corrigan, & Donaldson, 2000), it is approximated that

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approximately 1.5-million preventable adverse drug events (ADEs) occur yearly. The Joint Commission (TJC) defines that medication errors as any preventable incident that may cause unsuitable medication use or jeopardize patient safety (TJC, 2012).

Medication errors are the number-first error in health care (Centres for Disease Control[CDC], 2013). Safe and right medication administration is a major and potentially challenging nursing responsibility. Medication administration requires fine decision-making skills and clinical judgment hence, the nurse is accountable for ensuring full apprehension of medication administration and its involvement for patient safety.[1]

Nurses have a distinctive role and authority in medication administration. Hence they are regularly the final person to examine to see that the medication is accurately prescribed and dispensed before administration.[2]

It is quality during nursing education to receive command on a guide to clinical medication administration and upholding patient safety known about 'five rights' or 'five R's' of medication administration. These 'rights' came into being during a periodin medicine in which the precedent was that an error committed by a provider was thatprovider's only responsibility and patients did not have as much Participation in their own care.[2] The "Institute of Medicine's (IOM)" first Quality Chasm report, *To Err Is Human: Building a Safer Health System*, declared that medication-related errors (a subset of medical error) were a remarkable cause of morbidity and mortality. they reported that for 1 out of every 131 outpatient deaths, and 1 out of 854 inpatient deaths. Medication errors were roughly calculated to account for more than 7,000 deaths yearly. This reporthighlighted the importance of severely lowering medication errors and hence improving communication with patients, regularly monitoring for errors, presuming that clinicianwith decision-support and information tools, and improving and standardizing medication categorizing and drug-related information.[3]

With the growing dependency on medication therapy as the principal intervention for most illnesses, patients collecting medication interventions are revealed to potential harm as well as benefits. Benefits are effectual management of the illness/disease, slowed development of the disease, and improved patient consequences with few if any errors. Harm from medications can rise from unexpected consequences as well as medication error (as a wrong medication, wrong time, wrong dose, etc.). With insufficient nursing education about patient safety and quality, excessive workloads, staffing inadequacies, tiredness, illegible provider handwriting, flawed dispensing systems, as well as problems with the marking of drugs, nurses are regularly challengedto make sure that their patients get the right medication at the right time.[3]

The "Ten Rights of Medication Administration" are a deposit of guidelines that medical professionals adhere to when administering medication, to ensure the inflated level of safety for patients. These are:[4]

1. Right Drug.

The first right of drug administration is to inspect and prove if it's the right name and form. Misconceive medication names that look alike is a common mistake. These look-alike medication names may also sound similar and can lead to errors related with verbal prescriptions.

2. Right Patient.

Ask the name of the client and check his/her ID band before providing the medication. Even if you realized that patient's name, you still need to inquire just to verify.

3. Right Dose.

Firstly, Check the medication sheet and the doctor's order while medicating. Be aware of having the difference between an adult and a pediatric dose.

4. Right Route.

Firstly, Check the order if it's oral, IV, SC, IM, etc.

5. Right Time and Frequency.

Check the prescription for when it would be given and when was the last time it was given.

6. Right Documentation.

Make sure that it is important write the time and any state on the chart correctly.

7. Right History and Assessment.

Get a copy of the client's history to drug interactions and allergies.

8. Drug approach and Right to Refuse.

Give the client adequate autonomy to reject the medication after rigorously explaining the effects.

9. Right Drug-Drug Interaction and Evaluation.

Evaluate any medications previously given. the diet of the patient that can relent a badinteraction to the drug to be given. Examine also the expiry date of the medication being given.

Thus, medication administration is an essential part of nursing practice, which requiresa sound knowledge base in order for medication to be administered safely. there is an increasing demand to strengthen the knowledge of nurse's knowledge regarding safe medication administration in prevention of medication error. As a researcher I felt the need to assess the knowledge regarding safe medication administration among staff nurses and also to gain their knowledge through providing the information booklet.

PROBLEM STATEMENT

A Descriptive study to assess the knowledge regarding safe medication administrationamong staff nurses of Pediatrics department in Government Medical College, Amritsar,Punjab.

AIM OF THE STUDY

The aim of the study is to assess the knowledge regarding safe medication administrationamong staff

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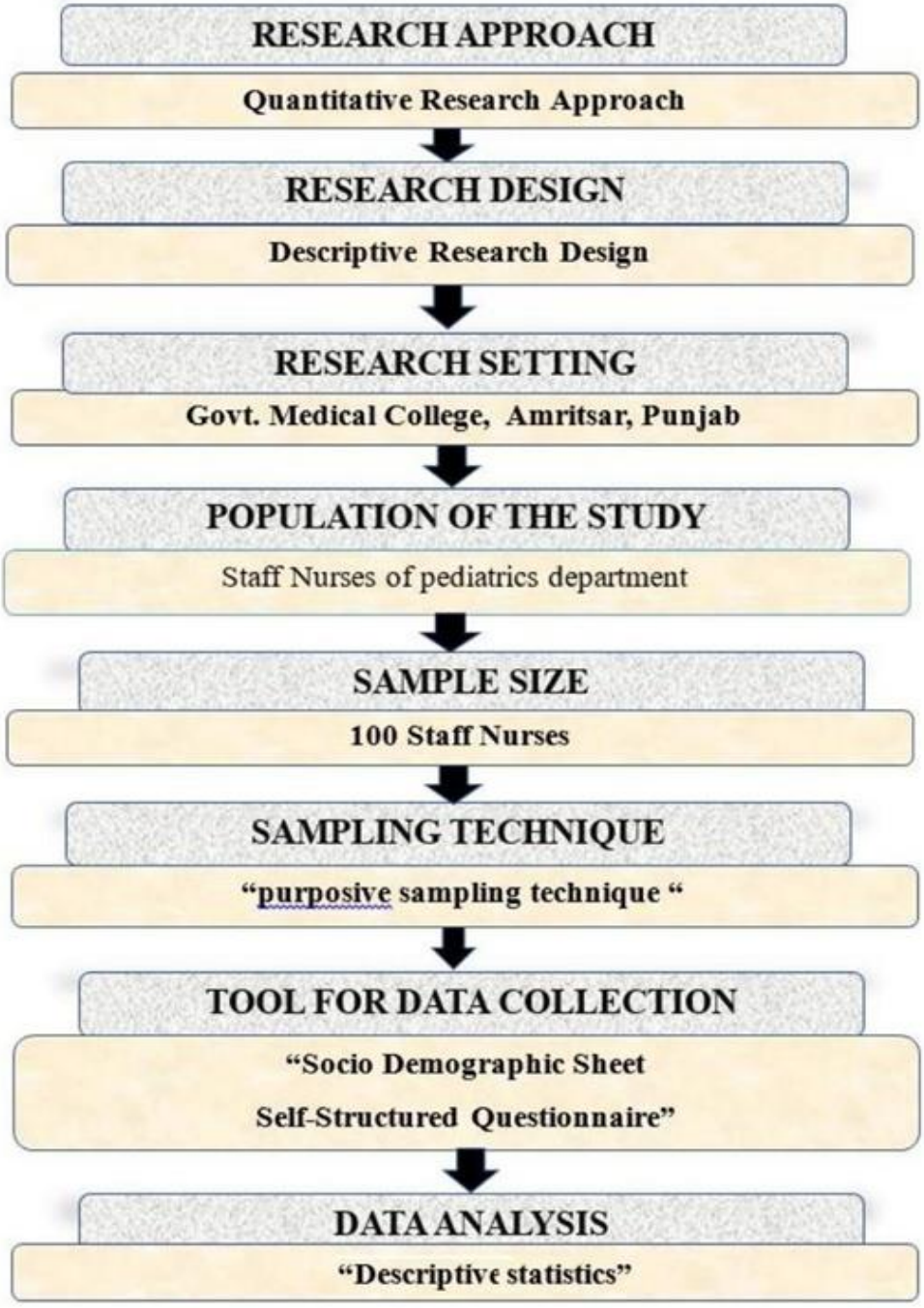
nurses of Pediatrics department in Government Medical College, Amritsar,Punjab.

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding safe medication administration among staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.
2. To find the association of knowledge regarding safe medication administration among staff Nurses of Pediatrics department with the selected demographic variables.

RESEARCH METHODOLOGY



RESEARCH SETTING

The study was conducted in Pediatrics Department of Government Medical College, Amritsar, Punjab.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- The staff nurses working in Pediatrics Department of Government MedicalCollege, Amritsar, Punjab.
- The Staff nurses who are registered in state nursing council.

Exclusion criteria

- The staff nurses who are not willing to participate

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in the study.

DEVELOPMENT OF TOOL

The instrument was developed after the literature review and guidance from the experts. It consists of Two parts

Level of knowledge	Knowledge score
Adequate	(21-30)
Moderately Adequate	(11-20)
Inadequate	(1-10)

Part-I

It consists of demographic variables includes age, sex, education, working unit, number of staffs working in the ward, number of patients in the ward, nurse patient ratio in the ward.

Part II

It includes the assessment of knowledge regarding safe medication administration. It had self- administrative question. The correct response carries one mark in each question. It consists of 30 multiple choice questions.

DESCRIPTION OF FINAL ITEM

After considering the suggestions & modifications of the tool, finalized tool consisted of 30 items Structured Questionnaire for knowledge assessment staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

Section A: Demographic Profile

Section B: Structured knowledge questionnaire to assess the knowledge the knowledge regarding safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

Scoring: For each item of correct answer carry maximum score "one" and wrong answer carry minimum score "Zero". There was no negative scoring.

Criterion of measurement

Maximum Score: 30

Minimum Score: 0

SECTION-I

Table 1: Socio-demographic Profile of parents of staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab **(N=100)**

S. No.	Variables	F	%
1.	**Age (years)**		
	• 20-22 yrs.	0	0%
	• 23-25 yrs.	20	20%
	• above 25 yrs.	80	80%
2.	**Gender**		
	• Male	4	4%
	• Female	96	96%
3.	**Education**		
	• M.Sc. Nursing	1	1%
	• PhD Nursing	0	0%
	• B.Sc. Nursing	65	65%
	• GNM	34	34%
4.	**Working unit**		
	• Wards	43	43%
	• NICU	27	27%
	• COEP	30	30%
5.	**Number of staffs working in the ward**		
	• 10-15	1	1%
	• 16-20	14	14%
	• 21-25 or above	85	85%
6.	**Number of patients in the ward**		
	• Less than 30	17	17%
	• More than 30	83	83%
7.	**Nurse Patient ratio in the ward**		
	• 1: 7	27	27%
	• 1:5	23	23%
	• 1:3	50	50%

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8.	**Have u attend any Conference or Seminar regarding Safe Medication Administration**		
	• Yes	10	10%
	• No	90	90%

SECTION-II

OBJECTIVE: -1 To assess the knowledge regarding safe medication administration among staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

Knowledge Score

N=100

N	Mean	Std. Deviation	Median	Min	Max
100	22.68	5.468	25.00	8	28

Table 2: depicts level of knowledge regarding safe medication administration among staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

Table 4: Depicts that the distribution of knowledge scores ranges from 8-28. Maximum possible Score being 30. The majority of Staff Nurses of Paediatrics Wards can't reach the maximum possible score. Maximum Obtained score was 28 and Minimum obtained score was 8 with mean score as 22.68, Median 25.00 with Standard deviation 5.468. The mean was depicted the Adequate, Moderately Adequate and Knowledge regarding safe medication administration among staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

SECTION-III

OBJECTIVE: -2 To find the association of knowledge regarding safe medication administration among staff Nurses of Pediatrics department with the selected demographic variables.

Table 3: depicts association of knowledge regarding safe medication administration among staff Nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.

N=100

S. No.	Variables	Knowledge			χ^2 values	df	p value
		Adequate (21-30)	Moderately Adequate (11-20)	Inadequate (1-10)			
1.	**Age (years)**						
	20-22 yrs.	0	0	0	16.351	2	.000*
	23-25 yrs.	8	7	5			
	Above 25	62	16	2			
2.	**Gender**						
	Male	3	1	0	0.314	2	.855NS
	Female	67	22	7			
3.	**Education**						
	M.Sc. Nursing	1	0	0	15.364	4	.004*
	PhD Nursing	0	0	0			
	B.Sc. Nursing	50	15	0			
	GNM	19	8	7			
4.	**Working Unit**						
	Wards	34	7	2	6.094	4	.192NS
	NICU	14	10	3			
	COEP	22	6	2			
5.	**No. of staff Working in the ward**						
	10-15	1	0	0	13.738	4	.008 *
	16-20	4	8	2			
	21-25 or above	65	15	5			
6.	**No. of patients in the ward**						
	less than 30	16	1	0	5.745	2	.06NS
	More than 30	54	22	7			
7.	**Nurse Patient Ratio In The Ward**						
	1:7	22	3	2	9.329	4	.049*
	1:5	12	7	4			

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	1:3	36	13	1			
8.	**Have you attended any conference or Seminar Regarding Safe Medication of knowledge**						
	yes	9	0	1	3.333	2	.189^{NS}
	No	61	23	6			

=significant at 0.05 level

Table 5: depicts that association of knowledge regarding safe medication administration among staff Nurses of Pediatrics department with the selected demographic variables. Here chi-square test is applied to find statistically significant; As result showed that socio-demographic variables age (x^2=16.351, p=0.00), education (x^2=15.364, p=0.004) and no. of staffs working in the ward (x^2=13.738, p=0.008), no. of patient ratio in the ward ((x^2=9.329, p=0.049) found statistically significant at 0.05 level. Whereas others gender, working unit, and no. of patients in the ward found non-significant at 0.05 level.

RESULT

The finding of present study revealed that 70% staff nurses had Adequate knowledge and 23% staff nurses had Moderately Adequate and 7% parents had inadequate knowledge regarding safe medication administration among staff nurses of pediatrics department in Government Medical College, Amritsar, Punjab. There is a significant relationship of knowledge with demographic variables i.e. age, education and no. of staffs working in the ward no. of patient ratio in the ward found statistically **significant at 0.05 level**. Whereas others gender, working unit, and no. of patients in the ward found **non-significant at 0.05 level.**

DISCUSSION

The finding of present study revealed that 70% staff nurses had Adequate knowledge and 23% staff nurses had Moderately Adequate and 7% parents had inadequate knowledge regarding safe medication administration among staff nurses of pediatrics department in Government Medical College, Amritsar, Punjab.

These findings are consistent with the findings of study conducted by Eman Mostafa Abd Elmageed, **et al.** in 2020. Conducted a study on Knowledge, Attitude and Practice of Nurses in Administering Medications at Mansoura University Hospitals Patient safety is a priority for health care organizations worldwide. Aim of the current study was carried out to assess knowledge, attitude and practice of nurses in administering medications, identify the relationship between knowledge attitude and practice of nurses in administering medications. Finally, examine the association between nurses' knowledge, attitude, practice and socio- demographic characteristics. A descriptive correlational cross sectional study design was used. This study was conducted on nurses in specialized medical hospital. Mainly 140 nurses involved in this study. Two tools were used; the first tool was structured interviewing questionnaire. It was used to measure socio- demographic data, nurses' knowledge and nurses' attitude regarding medication administration. Tool two was medication administration checklist to assess nurses' practice regarding medications administration. Conclusion: Nurses have poor knowledge, practice, and negative attitude toward medication administration, which needs to be corrected. the quality of these using established instruments**. A Results** Slightly less than two thirds of nurses have poor total knowledge score regarding medication administration. Slightly more than half of the nurses have positive attitude regarding medication administration, while more than two fifths have negative attitude. Around half of the nurses have poor total practice score regarding medication administration. Generally, there is a statistically significant relation between nurses' knowledge and their practice and attitude regarding medication administration. Moreover, there is a statistically significant association between nurses' years of experience and their knowledge regarding medication administration.

There is a statistically significant association between nurses' sex and qualification and their practice regarding medication administration. Finally, there is a statistically significant association between nurses' working unit and age and their attitude regarding medication administration. It is **concluded** that Nurses have poor knowledge, practice, and negative attitude toward medication administration, which needs to be corrected. the quality of these using established instruments**.**

CONCLUSION

After discussion on the relation of present study resulted that the knowledge regarding safe medication administration among staff nurses in similar study is inadequate, moderately adequate and adequate.

SUMMARY

The summary included major findings of the study and discussion based on the findings of present and previous studies.

LIMITATION

- The sample consisted of just 100 staff nurses of Pediatrics department in Government Medical College, Amritsar, ; hence, it was difficult to generalize.
- A purposive Sampling approach was employed for data collection, limiting the generalizability of the study to a specific setting.
- The research instrument was not standardized. Therefore, all constraints associated with the use

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of created tools applied to this study.

RECOMMENDATIONS

- The research may be reproduced on a large sample size to verify and generalize its results.
- A research may be carried out to examine the awareness safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.
- A co-relational study may be conducted on knowledge, practice and attitude of the safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.
- A similar type of study may be conducted on large population sample regarding safe medication administration among staff nurses of Pediatrics department in Government Medical College, Amritsar, Punjab.
- Based upon findings of the present study, the following suggestions are recommended: Simple handouts as booklets and brochures about medication administration essential instruction and medication errors should be developed and distributed at all nursing care settings.

REFERENCES

1. **Doyle, G. R., & McCutcheon, J. A. 6.2 Safe medication administration, BC** Campus Co,2015, November. https://opentextbc.ca/clinicalskills/chapter/6-1-safe-medication-adminstration/ (last access on11/04/2024).
2. Hanson, A., & Haddad, L. M. Nursing rights of medication administration. StatPearls – NCBI Bookshelf ,2023, September4. https://www.ncbi.nlm.ni gov/books/NBK560654/(last access on 11/04/2024).
3. Hughes, R. G., & Blegen, M. AMedication administration safety. Patient Safety and Quality – NCBI Bookself 2008, April 1.https://www.ncbi.nlm.nih. gov/books/NBK2656/(last access on 11/04/2024).
4. Philadelphia, C.H.O. (n.d.). Ten rights of medication administration. Children's Hospital of Philadelphia. https://www.chop.edu/health-resources/six-rights-medication-administration Bsn, M. V., RN. The 10 rights of Drug Administration. Nurseslabs.2023, august 15. 13/04/2024).
5. Safe Medication Administration: Facilitator guide. (n.d.). Agency for Healthcare Research and Quality. safety/settings/labor-delivery/perinatal-care/modules/strategies/medication/safe-medication-fac-guide.html. (last access on 13/04/2024).
6. Medication Error Definition. (n.d.). medicationerrors#:~:text=%22A%20medication%20error%20is%20any,professional%2C%20patient%2C%20or%20consumer. (last access on13/04/2024).
7. Medication error in nurse in India, Google Search JEAAYgATSAQk5MjgwajBqMTWoAgiwAgE&sourceid=chrome&ie=UTF-8. (last access on 14/04/2024). (n.d.).
8. Bhutada A. Incidence of Medication Error in Critical Care Unit of a Tertiary Care Hospital: Where Do We Stand? Indian J Crit Care Med, 2020 Sep;24(9):753-754. doi: 10.5005/jp- journals-10071-23609. PMID: 33132554; PMCID: PMC7584828.
9. Bernius, M.,(2008). Prevention of pediatric drug calculation errors by pre hospital care providers. Journal of national association of EMS physicians and national association of state EMS directors. Oct-Dec. p. 486-94.
10. Mahmood A, Chaudhury H, Gaumont A. Environmental issues related to medication errors in long-term care, lessons from the literature. HERD, 2009 Winter;2(2):42-59. doi: 10.1177/193758670900200204. PMID: 21161929.
11. Eman Mostafa Abd Elmageed, et. al. "Knowledge, Attitude and Practice of Nurses in Administering Medications at Mansoura University Hospitals." IOSR Journal of Nursing and Health Science (IOSR-JNHS), 9(4), 2020, pp. 06-16.