Original Research article

A Study to assess the Effectiveness of Information Booklet on knowledge regarding Medication error & Its Prevention in pediatric drug administration among Pediatric Staff Nurses in Selected Hospitals, Kanpur

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Abstract

Any error in prescribing, dispensing or administration of drug and it lead to side effect is called medication error. Adult's medication is different to children. Many medicines are either off-label or unlicensed, used for paediatric patients. So it is not good to say that Children are 'little adults'. In infants and children, a greater result of errors is appropriate to happen because of small body size and calculation of doses on the basis of weight. Experts accept that medication errors have the ability to cause harm within the paediatric population at a severe rate than in the adult population. The result indicate that 8(26.66%) had inadequate knowledge, 21(70%) had moderate knowledge and 1(3.34%) adequate knowledge out of 30 staff nurses. After post test- 2(6.67%) had inadequate knowledge, 23(76.66%) had moderate knowledge and 5(16.67%) of them had adequate knowledge out of 30 staff nurses. The main pre-test score was 11.86 and the post-test was 15.33. The calculated paired't'- value was 9.61 ($p<0.05$). The chi- squire test told that there was no significant association with age, gender, designation, educational status, year of experience and working area.

Keywords- information booklet, medication error

1 Introduction

Medications are a wonderful discovery. They boost healing, reduce suffering and tend to modern medical phenomenon. Medication errors, widely defined as any error in the prescribing, dispensing or administration of a drug, regardless of whether such errors lead to adverse effect or not, are the single most preventable cause of patient harm [1]. Changes in digestion of medications from the gastrointestinal tract, intramuscular injection sites, and skin are performing an important role in pediatric patients, mainly in premature and other newborn infants [2]. The children have various organ functions because of immature development and the distribution, metabolism, and elimination of drugs than adults but also among pediatric age groups. The evidence and accuracy of drugs may change among age groups and from one drug to other in pediatric versus adult patients. Many medicines are formed for appropriate for the adults but it is not for pediatric patients use, thus it is difficult to make proper dosing for specific pediatric age. A medication error has more chance of occurring in infants and children [3]. Generally; it shows that the proportion of serious medication errors in primary care may be quietly low. Nevertheless, given the complete number Of prescriptions issued in primary care, there is still the ability to cause significant harm in absolute terms [4]. In following, these may have significant health and economic outcome, including the more use of health services, curable medication-related hospital admissions and death. So the causes of drug errors are multifarious. Therefore, medication error development programs must aim on system improvements and team conversation [4].

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2 Objectives

1. To assess the pre-test knowledge of paediatric staff nurses regarding medication error and its prevention in paediatric drug administration in selected Hospitals.
2. To evaluate the effectiveness of information booklet regarding medication error and its prevention in paediatric drug administration among paediatric staff nurses.
3. To find out the association of pre-test knowledge of Paediatric staff nurses with their selected demographic variables.

3 Hypothesis

H1: There is a significant difference between the mean of pre-test & post-test knowledge scores with regarding medication error in paediatric drug administration among paediatric staff nurses

H2: There is a significant association between pre-test knowledge scores with their selected demographic variables.

4 Material and methods of used

Research design: Pre-experimental one group pre-test design was used in the present study

Research approach: Quantitative evaluative research approach was used for the present study.

Sample: - In this study, the sample is the Pediatric staff nurses working in the selected Hospitals.

Sample technique: Non-probability convenient sampling technique.

Sample size: 30 Paediatric staff nurses.

Setting of the study: The study was conducted in selected Rama hospital & Ursula hospital, Kanpur.

5 Variables

Dependent variable: Knowledge of pediatric staff nurses who were working in selected Hospitals.

Independent variable: In this present study information booklet on medication error & its prevention in Pediatric drug administration was the independent variable.

Demographic variable: Age, Gender, Professional qualification, Total clinical experience, working area.

6 Sampling criteria

Inclusion criteria:

1 All registered ANM, GNM and Post. Basic B.Sc & B.Sc staff nurses who were working in the Paediatric ward, PICU & NICU in selected hospitals.
2 Paediatric staff nurses who were willing to participate in the study.

Exclusion criteria:

1 Paediatric staff nurses who were not available during the time of data collection.

7 Method of data collection

- A structured knowledge questionnaire schedule was used for collect data.

8 Development and description of tools used in the study:

The tool Structured knowledge questionnaire used for data collection

- **The tools consist of two sections:**

Section A: Consist of socio-demographic data including Age, Gender, Professional qualification, Total clinical experience, working area.

Section B: Consist of 24 open ended structured knowledge questionnaires for assessing effectiveness of information booklet on knowledge regarding medication error & its prevention in pediatric drug administration.

Scoring: There was 24 items, each items used table.

Table No:1 Effectiveness of information booklet on knowledge regarding medication error in paediatric drug administration among paediatric staff nurses [N=30]

Knowledge Level	**Pre-test**		**Post-test**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Adequate	1	3.34%	5	16.67%
Moderate	21	70%	23	76.66%
Inadequate	8	26.66%	2	6.67%
Total	**30**	**100%**	**30%**	**100%**

9 Plan for data analysis:

The data obtained 30 samples were analyzed by using descriptive and inferential statistics. Descriptive statistics include Frequency, Percentage, Mean, Median, Mode, Standard deviation were used to explain the demographic variables. Inferential statistics include the chi-square test used to find the association between knowledge and selected demographic variables among staff nurses [5].

The investigator planned to analyze the data in the following manner-

Section-A	Percentage wise distribution according to selected demographic variables.
Section-B	Pre-test knowledge on medication error and its prevention in paediatric drug administration among paediatric staff nurses.
Section-C	Post-test knowledge on medication error and its prevention in paediatric drug administration among paediatric staff nurses.
Section-D	Effectiveness of Information booklet on knowledge regarding medication error and its prevention in paediatric drug administration among paediatric staff nurses.
Section-E	Association between pre-test knowledge score and their selected demographic variables.

10 Data analysis and major findings

Section 1: **Demographic data**

- Among the total samples, most of samples (40%) belongs to the age group 26-30 years, 36.66% belongs to the age group of 20-24 years, 16.67% belongs to the age group 31-35 years and 6.67%. only belongs to the age group of more than 36 years.
- About the gender, majority (53.34%) of the samples were female and only (46.66%) of the samples were Male.
- Distribution of the samples as per designation, most of the samples (86.66%) were as staff nurse, (6.67%) were as floor in-charge and (6.67%) were as ward in-charge.
- Distribution of the samples as per their professional qualification, showed most of the samples (63.33%) belongs to GNM, (16.67%) belongs to Basic B.Sc. Nursing, (16.67%) belongs to Post Basic B.Sc. Nursing and only (3.33%) of the sample belongs to ANM.
- Among the total samples, 63.33% of samples belonged to 1-3 years experience, 16.67% of the samples belonged to the total year of experience of below 1 year, 13.33% of samples belonged 4-6 year of experience and 3.33% of the samples belonged to above 7 year experience.
- Distribution of the samples as per the working area, most highest percentage of the samples (53.34%) were from pediatric ward, 33.33% were from N.I.C.U and only 13.33% were P.I.C.U area.

Section 2: **Level of knowledge score among paediatric staff nurses:-**

Among 30 Paediatric nurses, the majority of respondent 76.66% had moderate knowledge on medication error & its prevention in paediatric drug administration and 16.67% of paediatric nurse's knowledge shows that had adequate level of knowledge.

Section 3: Level of post-test knowledge score on medication error and its prevention among staff nurses-

After information booklet the post test knowledge score among 30 staff nurses 16.67% (5) staff nurses who possess adequate knowledge whereas 76.66% (23) had moderate knowledge and 6.67% (2) staff nurses had inadequate knowledge.

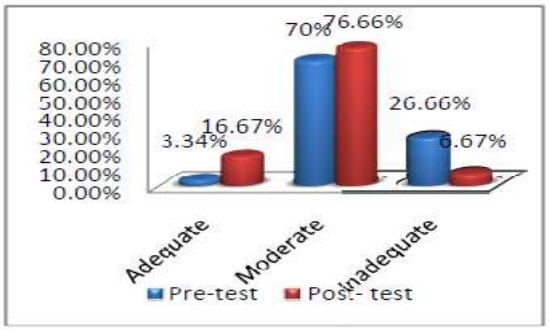

Figure 1: Bar diagram showing the level of pre and post test knowledge on medication error and its prevention among paediatric staff nurses

Section 4- Effectiveness of information booklet on knowledge regarding medication error & its prevention in paediatric drug administration among paediatric staff nurses (Difference between pre-test and post-test knowledge score).

Table No: 2 Significance of difference between pre-test and post-test N=30

Knowledge Score	Pre-test	Mean	S.D	T	P
		11.86	4.73	9.61	2.05
	Post-test	15.33	2.66		

The mean score before and after administration of information booklet has shown a significant difference The mean total knowledge score before invention was 11.86 which has increased to 15.33 after invention, the paired t test 9.61 was found to be significant at very high level (p=2.05) at 0.05 level.

Section 5: Association between the demographic variables and knowledge score on medication error & its prevention in paediatric drug administration among paediatric staff nurses-

Association between knowledge scores and selected demographic variables of staff nurses shows that there was no significant association between the knowledge scores and age, gender, professional qualification, total clinical experience, any special training, and area of experience at 0.05 levels [5].

11 Recommendations

On the basis of finding, it is recommended that,

- The similar study may be replicated on large scale.
- The similar study can be conducted to evaluate the knowledge on medication error and its prevention in pediatric drug administration.
- A study can be conducted in hospital setting by using large sample of pediatric staff nurses.

12 Conclusion

The study showed that knowledge of pediatric staff nurses on medication error. The result showed that they had adequate knowledge regarding medication error in pre test but after post test, their knowledge level was improved by using of information booklet. So the result showed that most of the pediatric staff nurses had moderate knowledge regarding medication error and its prevention in pediatric drug administration and we can use this study for further research as descriptive, experimental and interventional study we can do the training programme for improving their skills and knowledge.

Bibliography

[1] Kaushal R, Jaggi T, Walsh K. *et al* Pediatric medication errors: what do we know? What gaps remain? Ambul Pediatr 2004473–81.

[2] Kaushal R, Bates D W, Landrigan C. *et al* Medication errors and adverse drug events in pediatric inpatients. JAMA 20012852114–2120.

[3] Raju TNK, Thornton JP, Kecskes S, et al. Medication errors in neonatal and pediatric intensive-care units. Lancet 1989 Aug; 2(8659): 374–6.

[4] Folli HL, Poole RL, Benitz WE, et al. Medication error prevention by clinical pharmacists in 2 children's hospitals. Pediatrics 1987 May; 79(5): 718–22.

[5] Sharma Suresh K, nursing research and statistic, New Delhi published by Elsevier, India private limited, 2011.page no. (61-65, 65-68, 70-71, 31-33, 53-54, 224-226)

[6] Kerlinger, nursing research. 1st edition. Published by reed Elsevier, New Delhi private limited. 2008, 123