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Research Article

Effectiveness of Self-Instructional Module on Knowledge and Practice of Staff Nurses regarding Parenteral Pediatric Drug Administration at Sher-i-Kashmir Institute of Medical Sciences Soura, Srinagar, Kashmir

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I N F O

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A B S T R A C T

Objectives: To assess the pre-test knowledge and practice scores of staff nurses, To assess the post-test knowledge and practice scores of staff nurses, To assess the effectiveness of self-instructional module on knowledge and practice score of staff nurses by comparing pre-test and post-test knowledge and practice scores, to find the association of pre-test knowledge and practice scores with their selected demographic variables.

Methodology: A quantitative approach with pre experimental one group pre-test post-test research design was used to conduct the study among 50 study subjects working in selected pediatric wards at SKIMS by convenient sampling technique.

Results: Findings of the study revealed that majority of the study subjects (44.0%) were in the age group 25-30 years, Majority of the study subjects (74.3%) were females.

Conclusion: The findings of the study concluded that majority of the study subjects were having adequate knowledge and practice in post-test as compared to pre-test, hence self-instructional module was effective in increasing the knowledge and practice score of study subjects.

Keywords: Effectiveness, Self-Instructional Module, Knowledge, Practice, Parenteral Pediatric Drug Administration

Child health is the cornerstone of a Nation. The community, which neglects their children, stops the progress in future. UNICEF has given greater attention to the concept of the whole child which means it is essential to promote the health of children, as they are the vulnerable group of society. Pediatric nursing should foster the growth and development of the child and promote an optimum state of health physically, mentally and socially so that they may function at the peak of their capacity.[1]

Drug (Drogue means a dry herb in French) is a substance used in the diagnosis prevention or treatment of a disease.[2] WHO definition ''a drug is any substance of product that is used or intended to be used to modify or explore physiological systems or pathological states for the benefit of the recipient.''[3] Parenteral administration is defined by the US Food and Drug Administration (FDA) as drug administration by injection, infusion, and implantation or by some other routes other than the alimentary canal.[6] The parenteral routes are intravenous, intramuscular, subcutaneous, intradermal, intra-arterial, intra-cardiac, intra-thecal, intra-osseous, intra-peritoneal, intra-articular, extra-amniotic. Newborns and adults have different physiological, pharmacokinetic and pharmacodynamic parameters compared to adults. Drug calculation is one of the important aspects of care for children during hospitalization and the ability to perform drug calculation is very important for patient safety, drug doses for infants and young children are usually smaller than those given to an adult, however, there is universally accepted method for calculating a pediatric dose as a fraction of an adult dose.

Nurses must have an understanding of the safe dosage of drug administration to children as well as the expected action, and possible side effects.[13] Each child has ten ''rights during the administration of drugs which will prevent most drug dosage errors. The nurses need to know the nature of the drug, trade name, pharmacological name, classification, methods of preparation, adverse drug effects, dosage, storage, absorption, excretion different routes and time of administration. According to Abraham Jacob (1830-1910), the pediatric population represents a spectrum of different physiologies and children should not be treated as miniature men and women. Nurses should have proper knowledge of drugs and mathematical calculations also. World health organization WHO (2010) estimated medical errors of 5-18% per hospital admission in the developing world.[9] According to WHO (2015) there are (65.5%) of nurses are making medication errors and there is one death per day and 1.3 million injuries occur every year. The American Academy of Pediatrics (AAP) is committed to decreasing medication errors in the treatment of children, studies on children and ethical issues due to children not being able to make their own decisions to participate in a clinical trial.

Methodology

In this study a quantitative research approach was adopted. Knowledge and practice assessed by self- structured questionnaire and non-participatory checklist regarding parenteral pediatric drug administration, a pre experimental one group pre-test and post-test design was used to assess the effectiveness of self-instructional module on knowledge and practice of staff nurses regarding parenteral pediatric drug administration. This study was conducted at SKIMS Soura, Srinagar Kashmir among 50 staff nurses, selected through convenient sampling technique.

Results

Demographic variables which included age, gender, professional qualification, working experience and Attended any in-service education programme regarding parenteral pediatric drug administration.

Table 1.Description of Demographic Variables

n=50

Variables	Options	Freq.	Pct.
Age	25-30 years	22	44.0%
	31-35 years	18	36.0%
	36-40 years	3	6.0%
	40 years and above	7	14.0%
Gender	Male	13	26.0%
	Female	37	74.0%
Professional Qualification	GNM	3	6.0%
	B.sc Nursing/ Post basic B.sc Nursing	33	66.0%
	M.sc Nursing	13	26.0%
	PhD Nursing	1	2.0%
Working Experience	<5 years	19	38.0%
	5-10 years	20	40.0%
	11-20 years	3	6.0%
	20 years and above	8	16.0%
In Service Education Program Attended	Yes	7	14.0%
	No	43	86.0%

Majority of the study subjects (44.0%) were in the age group 25-30 years, Majority of the study subjects (74.3%) were females. Majority of the study subjects (66.0%) were B.sc in Nursing. Majority of the study subjects (40.0%) were having 5-10 years of working experience. Majority of the study subjects (86.0%) have not attended any in-service education programme Table 1.

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Table 2.Frequency and Percentage Distribution of Study Subjects According to their Pre-test Knowledge Score

n=50

Criteria Measure of Pre-test Knowledge Score		
Category Score	**Frequency**	**Percentage**
Inadequate knowledge (0-22)	3	6%
Moderate knowledge (23-33)	17	34%
Adequate knowledge (34-46)	30	60%
Total	60	100%

Table 3.Frequency & Percentage Distribution of Post-test Knowledge Score of Study Subjects

n=50

Criteria Measure of Post-test Knowledge Score		
Category Score	**Frequency**	**Percentage**
Inadequate knowledge (0-22)	0	0%
Moderate knowledge (23-33)	3	6%
Adequate knowledge (34-46)	47	94%
Total	50	100%

Table 4.Comparison between Pre-test and Post-test Knowledge Scores of Study Subjects regarding Parenteral Pediatric Drug Administration

Paired T-test	Mean±S.D.	Mean Difference	Paired T-test	P-value	Table value at 0.05
Pre-Test Knowledge	34.24±5.964	5.380	6.584 *Sig	<0.001	2.01
Posttest Knowledge	39.62±3.943				

Table 5.Association of Pre-test Knowledge Scores of Study Subjects regarding Parenteral Pediatric Drug Administration with their Selected Demographic Variables i.e. Age, Gender Professional Qualification, Working Experience, Attended any in-Service Education Programme

Association of Pre-test Knowledge Scores of Selected Socio-Demographic Variables									
Variables	**Opts**	**Adequate Knowledge**	**Moderate Knowledge**	**Inadequate Knowledge**	**Chi-test**	**P-value**	**df**	**Table Value**	**Result**
Age	25-30 years	16	6	0	26.232	0.000	6	12.592	Significant
	31-35 years	11	7	0					
	36-40 years	0	3	0					
	40 years and above	3	1	3					
Gender	Male	10	3	0	2.509	0.285	2	5.991	Not Significant
	Female	20	14	3					
Professional Qualification	GNM	1	0	2	38.713	0.000	6	12.592	Significant
	B.sc Nursing/ Post basic B.sc Nursing	20	13	0					
	M.sc Nursing	9	4	0					
	PhD Nursing	0	0	1					

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Working Experience	<5 years	14	5	0	19.986	0.003	6	12.592	Significant
	5-10 years	11	9	0					
	11-20 years	1	2	0					
	20 years and above	4	1	3					
In Service Education Program Attended	Yes	4	3	0	0.687	0.709	2	5.991	Not Significant
	No	26	14	3					

Table 6.Frequency & Percentage Distribution of Pretest Practice Scores of Study Subjects

n=50

Criteria Measure of Pre-test Practice Score		
Category Score	**Frequency**	**Percentage**
Inadequate practice (0-32)	0%	0%
Moderate practice (33-49)	18	36%
Adequate practice (50-67)	32	64%
Total	50	100%

Table 7.Frequency & Percentage Distribution of Post-test Practice Scores of Study Subjects

n=50

Criteria Measure of Post-test Practice Score		
Category Score	**Frequency**	**Percentage**
Inadequate practice (0-22)	0	0%
Moderate practice (23-33)	6	12%
Adequate practice (34-46)	44	88%
Total	50	100%

Table 8.Comparison between Pre-test and Post-test Practice Scores of Study Subjects regarding Parenteral Pediatric Drug Administration

Paired T-test	Mean±S.D.	Mean Diff.	Paired T-test	P-value	Table Value at 0.05
Pre-test Practice	51.86±6.996	4.060	3.921 *Sig	<0.001	2.01
Pos-test Practice	55.92±5.213				

Table 9.Association of Pre-test Practice Scores of Study Subjects regarding Parenteral Pediatric Drug Administration with their Selected Demographic Variables i.e Age, Gender Professional Qualification, Working Experience, Attended any in-Service Education Programme

Association of Pre-test Practice Scores of Selected Socio-Demographic Variables									
Variables	**Opts**	**Adequate Practice**	**Moderate Practice**	**Inadequate Practice**	**Chi-test**	**P-value**	**df**	**Table Value**	**Result**
Age	25-30 years	10	12	0	8.965	0.030	3	7.815	Significant
	31-35 years	12	6	0					
	36-40 years	3	0	0					
	40 years and above	7	0	0					

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Gender	Male	7	6	0	0.786	0.375	1	3.841	Not Significant
	Female	25	12	0					
Professional qualification	GNM	3	0	0	2.995	0.392	3	7.815	Not Significant
	B.sc Nursing/ Post basic B.sc Nursing	19	14	0					
	M.sc Nursing	9	4	0					
	PhD Nursing	1	0	0					
Working Experience	<5 years	10	9	0	6.799	0.079	3	7.815	Not Significant
	5-10 years	13	7	0					
	11-20 years	1	2	0					
	20 years and above	8	0	0					
In-service Education Program Attended	Yes	4	3	0	0.166	0.684	1	3.841	Not Significant
	No	28	15	0					

Majority of study subjects (60%) had adequate knowledge score in pre-test Table 2.

Majority of the study subjects (94%) had adequate knowledge score in post-test Table 3.

It is depicted from the table that the mean pre-test knowledge score was (34.24.±5.964) and mean post-test knowledge score was (39.62.±3.943) with a mean difference score was (5.380) Table 4.

The findings of the study revealed that there is a significant association between the pretest knowledge score of study subjects with their selected socio-demographic variables like Age (P=0.000) professional qualification (P=0.000) and working experience(P=0.003) Table 5.

Maximum study subjects (64%) had adequate practice in pre-test Table 6.

Majority of the study subjects (88%) had adequate practice in post-test Table 7.

It is depicted from the table that the mean pre-test practice score was (51.86.±6.996) and mean post-test practice score was (55.92.±5.213) with a mean difference score was (4.064) Table 8.

The findings of the study revealed that there is a significant association between the pre-test practice scores of study subjects with their selected socio-socio demographic variable like age (p=0.000) Table 9.

Discussion

Most of the study subjects (44.0%) were in the age group of (25-30) years.

In a similar study conducted by John Mary in (2015), (n=50) to evaluate the effectiveness of planned self-instructional module on knowledge regarding parenteral pediatric drug administration among staff nurses working in ICCU of Heart foundation of Dr Prabhakar Kore hospital and MRC Belgaum Karnataka. The findings revealed that most of the study subjects (50%) were in the age group of 26-30 year. Most of the study subjects (74.0%) were females Most of the study subjects (66.0%) were, B.sc nursing. Most of the study subjects (40.3%) were having (5-10) years of working experience.

These findings are comparable to the findings of a study conducted by John Mary in (2015), (n=50) to evaluate the effectiveness of planned self-instructional module on knowledge regarding parenteral pediatric drug administration among staff nurses working in ICCU of Heart foundation Belgaum Karnataka. The study revealed that majority of the study subjects (80%) were having 1-5 years of experience.

Most of study subjects (86.0%) have not attended any in-service education programme.

In a similar study conducted by Rajendera (2014) (n=30), to evaluate the effectiveness of planned self-instructional module on knowledge regarding parenteral pediatric drug administration among 50 staff nurses working in Pune city. The study revealed that most of the study subjects (43%) were having B.sc Nursing. In the pre-test, majority of the study subjects (71.7%) had adequate knowledge.

These findings are comparable to the findings of a study conducted by John Mary in (2015), to evaluate the effectiveness of planned self-instructional module on knowledge parenteral pediatric drug administration regarding among staff nurses working in ICCU of Heart

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foundation Belgaum Karnataka.The study revealed that in pre-test most of the study subjects (47.5%) had adequate knowledge. In the post-test, majority of the study subjects (76.7%) had adequate knowledge.

These findings are comparable to the findings of a study conducted by John Mary in (2015) to evaluate the effectiveness of planned self-instructional module on knowledge parenteral pediatric drug administration regarding among staff nurses working in ICCU of Heart foundation Belgaum Karnataka. The study revealed that in post-test all the study subjects 50 (100%) had adequate knowledge score.

The Mean post-test (Mean±SD) knowledge score of study was (39.9±6.87) which was higher than the Mean (Mean±SD) pre-test knowledge score of study subjects (33.4± 9.18) which was found to be statistically significant (p=0.001) at 0.05 level of significance so it can be inferred that the Mean difference of 21.50 or increase in post-test knowledge score regarding parenteral pediatric drug administration among staff nurses was likely due to the intervention. This indicates that the 'planned self-instructional module' was effective in increasing the knowledge score regarding parenteral pediatric drug administration among study subjects In the pre-test majority of the study subjects (64.7%) had adequate practice. In the post-test, majority of the study subjects (88.7%) had adequate practice.

A similar study conducted by Vidya, Nair (2018) to assess the practice of staff nurses regarding parenteral drug administration at Chennai, INDIA. The results revealed that among 80 subjects (58%) of the staff nurses had adequate practice.

Findings of the present study revealed that there was statistically significant association of the pre-test knowledge scores with the demographic variables like age, professional qualification (p=0.001) and working experience. Findings of the present study revealed that there was statistically significant association of the pre-test practice scores with the demographic variables like age (p=0.001).

Conclusion

There is a significant improvement in the mean post-test knowledge and practice scores of study subjects after implementation of planned self-instructional module regarding parenteral pediatric drug administration. There is a significant association between the pre-test knowledge score of study subjects with their selected socio demographic variables like age, professional qualification, working experience and there is a significant association of pre-test practice score of study subjects with their selected socio-demographic variable like age which indicates that knowledge and practice had profound effect on the above mentioned variables of study subjects regarding parenteral pediatric drug administration.

Recommendations

1. Similar study can be done to assess the attitude of staff nurses regarding parenteral pediatric drug administration.
2. Study can be replicated on a larger samples for a better generalization i.e above 50 staff nurses.
3. Comparative study can be done between effectiveness of self-instructional module versus structured teaching program regarding parenteral pediatric drug administration.

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Conflict of Interest: None

References

1. UNICEF annual report D Shah, P Choudhary, P Gupta Mathew T Gera. Indian paediatrics springer. 2012; 49(8):627-649.
2. Nancy Sr. A textbook of nursing foundation 2nd edition Jaypee (clement) 604611.
3. Martin shepherd nursing times net administer of drugs. cited from http//www.nursing times net nursing practice. 2011;10(3).
4. A textbook of nursing foundation 2nd edition Jaypee (clement) 604-611.
5. GL Klein-The American journal of clinical nutrition 1995. academia.oup.com.
6. A textbook of nursing foundation 2nd edition Jaypee (clement) 604-611.
7. Niederhauser V.P. "Prescribing for children issues in pediatric pharmacology'' Nurse practitioner; 1997;22(3);16-18,23,26-28.
8. Nancy Sr. principles and practice of nursing 5th edition. Indore India N.R Publishing.
9. Parul Data A textbook of pediatric nursing 1st edition. Jaypee brothers medical publications [p] ltd New Delhi 2009;157-165.
10. Perry P. fundamental of nursing 1st edition Elsevier publication 2005;821-822.
11. ME Ndosi, R NEWELL journal of clinical nursing, Wiley online library. 2009.
12. Perry P. fundamental of nursing 1st edition Elsevier publication 2005;821-822.
13. Perry P. fundamental of nursing 1st edition Elsevier publication 2005;821-822.
14. Perry P. fundamental of nursing 1st edition Elsevier publication 2005;821-822.
15. Nancy Sr.A textbook of nursing foundation 2nd edition Jaypee (clement) 604-611.
16. Parul data A textbook of pediatric nursing 1st edition.

Jaypee brothers medical publications [p] ltd new Delhi 2009;157-165.
17. Nancy Sr. A textbook of nursing foundation 2nd edition Jaypee (clement) 604-611.
18. J Hardy, Quinn, B Fazekas-journal of clinical 2012. opouscloud.lib.uts edu.au
19. Niederhauserv P. Prescribing for children issues in pediatric pharmacology; Nurse practitioner. 1997;22(3):16:18 :23:26-28.
20. Makhija N,'' introduction to nursing research'': 1st edition. A.P. Jain and co. New delhi. 2005;30-35.
21. S Mani, M Nisha, SJ jolly Varghese Indian journal of 2020. ncbi.nlm.nih.gov.
22. Joseph, N, Nelliyanil, M., Jindal, Jindal, S., Utkarsha U, Abraham AE, AlokY, Srivastava N, Lankeshwar S.Perception of simulation-based learning among Medical students in South INDIA.Annals of medical and health science research.2015;24;5(4):247-52.

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