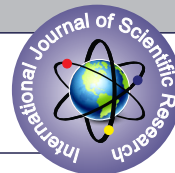


# EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PEDIATRIC DRUG AND FLUID CALCULATION AMONG 2ND YEAR GENERAL NURSING AND MIDWIFERY STUDENTS IN SELECTED NURSING INSTITUTIONS



## Nursing

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## ABSTRACT

Children are among the most vulnerable individuals in any society. The health of children and their families is greatly influenced by their community, and nurses can make a significant contribution by working with the community to promote children's health. As part of the treatment of children, accuracy is always important when calculating and administering medications. For infants and children, accuracy takes on even greater importance. A miscalculation may be dangerous due to the small body size, weight, and body surface area of the infant or child. The objectives of the study were to assess the effectiveness of planned teaching programme on knowledge regarding Pediatric drug and fluid calculation among 2nd year General Nursing and Midwifery students in selected Nursing Institutions of the city. Pre-Experimental Pre-test -Post-test design and convenient sampling technique was followed which included 60 samples. Data was collected using Self-Structured questionnaire. Data analysis was done with descriptive and inferential statistics. Results shows that with regard to level of knowledge of Pediatric drug and fluid calculation. The pre- test mean knowledge score was 8.30, and the pre-test knowledge score was 42(70 %) of students had average knowledge while 12(20 %) had poor knowledge level and 6(10%) had good knowledge Also the post- test mean knowledge score was 18.63 and 8.33% of the students had excellent level of knowledge and 45% had very good level of knowledge score, 38.33% had good knowledge, 5% had good knowledge, 3.33% had poor knowledge level. Thus it was concluded that planned teaching programme on Pediatric drug and fluid calculation was found as an effective teaching strategy.

## KEYWORDS

### INTRODUCTION

The health of children and their families is greatly influenced by their community, and nurses can make a significant contribution by working with the community to promote children's health. As part of the treatment of children, health care workers need access to drug dosage information.

The use of medicines in infants and children presents a unique set of challenge to the prescriber. Physiological variances between children and adults, including the otogeny of organ maturity and body composition, significantly influence the actions effectiveness and safety of medicines. However, most pharmacokinetic and pharmacodynamics studies provide little, if any, information on drug actions in infants and children, because they are usually conducted in adults. Thus, it is vital to follow paediatrics protocols and guidelines, and use references to verify medication orders to ensure that drug dosage are correct.

**Background:** Administration of medication in proper amount is the important Nurses responsibility. The ability to perform drug calculation is imperative to patient safety. Drug doses for infant and young children are usually smaller than those given to adult. However there is universally accepted method for calculating a pediatric dose as a fraction of an adult dose. Pediatric dose therefore as commonly on weight of child.

To administer medication safely to clients certain cognitive skills are essential. The nurse accepts full accountability and responsibility for all actions that are taken, this includes the administration of medication. Demonstrating accountability and acting responsibly in professional practice occur. Most of the errors that are made by nurses are medication errors. A medication error is any event that could cause or lead to a client receiving inappropriate medication therapy or failing to receive appropriate medication therapy. Most medication errors occur when a nurse become distracted or fails to follow routine procedures such as checking dose calculations, deciphering illegible handwriting or administering medications with which the nurse is unfamiliar.

According to Sentinel Event Alert for Preventing Pediatric Medication Errors, medication errors are more common in pediatrics than in adults because of weight-based dosage calculations, fractional dosing (eg, mg vs gm) and the need for decimal point. Experts agree that medication errors have the potential to cause harm within the pediatric population at a higher rate than in adult population.

### Objectives

#### Primary Objective:

1. To assess the effectiveness of Planned teaching programme on knowledge regarding pediatric drug and fluid calculation among

2nd year General Nursing and Midwifery students in selected Nursing Institutions of the city.

#### Secondary Objective:

1. To assess the knowledge score regarding pediatric drug and fluid calculation among 2nd year General Nursing and Midwifery students in selected Nursing Institutions.
2. To evaluate the effectiveness of Planned teaching programme on knowledge regarding pediatric drug and fluid calculation among 2nd year General Nursing and Midwifery students in selected Nursing Institutions of the city.
3. To associate the level of knowledge on pediatric drug and fluid calculation with selected demographic variables in 2nd year General Nursing and Midwifery students.

#### Hypothesis

**H0:-** There will be no significant difference between pre- test and post- test knowledge score after giving planned teaching programme on knowledge regarding Pediatric Drug and Fluid calculation among 2nd year General Nursing and Midwifery students in selected Nursing Institutions.

**H:-** There will be significant difference between pre -test and post -test knowledge score after giving planned teaching programme on knowledge regarding Pediatric Drug and Fluid calculation among 2nd year General Nursing and Midwifery students in selected Nursing Institutions

### MATERIALS AND METHODS

**Research Approach:** The Quantitative approach is used in present study.

**Research Design:** A Pre-experimental One group pre-test and post-test design was adopted for this study.

#### Variables:

**Independent Variables:** Planned teaching programme.

**Dependent Variables:** knowledge regarding Pediatric drug and fluid calculation

**Setting Of The Study:** the study was conducted in VSPM Madhuribai Deshmukh Institute of Nursing Education of the Nagpur city.

#### Population:

All 2<sup>nd</sup> year general nursing and midwifery students

#### Samples:

2<sup>nd</sup> year General nursing and Midwifery students in VSPM Madhuribai Deshmukh Institute of Nursing Education.

#### Sampling Technique

Non-Probability Convenient Sampling Technique was selected for the present study.

#### Inclusion Criteria:

1. Students of 2nd year GNM nursing course.
2. Students who are willing to participate in the study

#### Exclusive Criteria:

1. Students who are studying 1<sup>st</sup> and 3<sup>rd</sup> year GNM students.
2. Students who are not available at the time of data collection.

#### Tools And Instruments

- **Section A:** semi structured questionnaire on demographic data.
- **Section B:** It consists of 30 self structured questionnaire on knowledge regarding Pediatric drug and fluid calculation
- Planned Teaching Program

#### Analysis And Interpretation:

The analysis and interpretation is given in the following section:

**Section -I:** distribution of 2nd year general nursing and midwifery students with regards to demographic variables.

**Section-II:** Description on pre-test knowledge of 2<sup>nd</sup> year general nursing and midwifery students regarding pediatric drug and fluid calculation.

**Section-III:** Description on post-test knowledge of 2nd year general nursing and midwifery students regarding pediatric drug and fluid calculation.

**Section-IV:** Description on the effectiveness of Planned Teaching Programme on knowledge of 2nd year general nursing and midwifery students regarding pediatric drug and fluid calculation.

**Section -V:** Description on association of knowledge score with demographic variables.

#### Section- I

The present study, In the section I reveal that, among the subjects, maximum 30 (18.33%) of them were in the range of 19 years, 19 (31.7) were in the range of more than 20 years, minimum subjects 19 (31.7) were in the range of 18 years. Most of the subjects were in the 58 (96.7) were females and 2(3.3) were male. In context to religion, maximum subjects 41(68.3%), were Hindu, minimum subjects 17(28.3) were Buddhist, and 1(1.7) were Muslim, others were 1(1.7). in relation to 88.30% of the 2nd years students had mathematics subject in HSC and 11.70% need not have it. 28.30% of 2nd year GNM students had information about Pediatric drug and fluid calculation. 11.80% of the 2nd year GNM students had information from friends, 82.40% from teachers and 5.90% had information from mass media.

#### Section II

**Table No.2: Table Showing Comparison Of Pre-test And Post-test Grading Score**

| Grading   | Pre-test  |            | Post-test |            |
|-----------|-----------|------------|-----------|------------|
|           | Frequency | Percentage | Frequency | Percentage |
| Excellent | 0         | 0%         | 5         | 8.33%      |
| Very Good | 0         | 0%         | 27        | 45%        |
| Good      | 6         | 10%        | 23        | 38.33%     |
| Average   | 42        | 70%        | 3         | 5%         |
| Poor      | 12        | 20%        | 2         | 3.33%      |

The above table shows Comparison of the frequency and percentage wise distribution of 2nd year GNM students according to pre-test knowledge regarding Paediatric drug and fluid calculation. In that majority 70 % of students had average knowledge level, while 20 % had poor knowledge level and 10% had good knowledge level, in pre test. And in post-test 8.33% of the students had excellent level of knowledge and 45% had very good level of knowledge score, 38.33% had good knowledge, 5% had good knowledge, 3.33% had poor knowledge level.

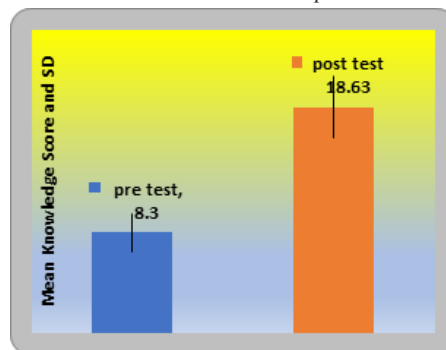
#### Section III

**Table No.3: Table showing effectiveness of planned teaching programme in knowledge score of pre-test and post-test of adult females regarding lower urinary tract infection**

| Test      | Mean  | SD   | Mean Difference | Calculated t-value | DF | Table value | p-value            |
|-----------|-------|------|-----------------|--------------------|----|-------------|--------------------|
| Pre Test  | 8.30  | 2.49 | 10.33           | 14.75              | 59 | 2.00        | 0.0001             |
| Post Test | 18.63 | 4.41 |                 |                    |    |             | Highly significant |

Level of significance  $p < 0.05$

Above table shows the overall mean knowledge score of pre-test and post-test which reveals that post-test mean knowledge score was higher 18.63 with SD of 4.41 when compared with the pre-test mean knowledge score value which was 8.30 with SD of 2.49. The calculated 't' value 14.75 is greater than table value at 0.05 level of significance. Hence it is statistically interpreted that the planned teaching programme on knowledge regarding pediatric drug and fluid calculation was effective. Thus the H1 is accepted and H0 is rejected.



#### Section IV

##### Description On The Association Of Knowledge Score In Relation To Demographic Variables

In the section IV, the Analysis reveals that there is no association of knowledge score with age, gender, religion, mathematics subject in HSC, information about the topic and source of information about topic.

#### DISCUSSION

Similar findings were found in the study conducted by Prince.D (2017), conducted an experimental study at Eshwaribai college of Nursing, Hyderabad to assess the knowledge of Final year B.Sc. Nursing students regarding calculation of paediatrics drug doses on developing program and evaluating its effectiveness. As the results indicate that there is no significant association between the knowledge and demographic variables like age  $X^2 = 4.181$  (table value=5.99), group  $X^2 = 4.134$  (table value=5.99), number of theory hours  $X^2 = 2.017$  (table value=9.49), and number of practical hours  $X^2 = 3.937$  (table value=5.99), performance  $X^2 = 4.214$  (table value=9.49). Researcher concluded that the Pediatric drug and fluid calculation program increased learner's knowledge, confidence and satisfaction with the program, it should be integrated into clinical training in Pediatric nursing curriculum and nursing practice. Student nurses should acquire the knowledge and apply into their nursing procedure in future prospect area.<sup>5</sup>

Hence it was concluded that planned teaching programme is very effective in improving the knowledge of 2nd year GNM students.

#### Major Findings Of The Study

##### Section I: Demographic Variables

- Majority 30(50%) of sample were in the age of 19 years, 19(21.7%) were in the age of >20 years and minimum samples 11(18.3%) were in the range of 18 years.
- Most of the samples 58(96.7%) were females and 2(3.3%) were males.
- In context to religion. Maximum samples 41(68.3%) were Hindu, 17 (28.3%) were Buddhist, and 1(1.7%) were Muslim and 1(1.7%) were from others.
- In the study, among the samples majority 53(88.3%) were taken and 7(11.7%) samples were not the mathematics subjects in HSC.
- Majority 43(71.7%) of the samples not having information about pediatric drug and fluid calculation and 17(28.3%) were having the information about the same.
- In relation to source of information, majority of samples 14(82.4%) had information from teachers, 2(11.8%) had information from friends, and 1(5.9%) had information from mass media i.e internet.

- **Section II-** The pre- test mean knowledge score was 8.30. the findings reveals that 42(70 %) of students had average knowledge level, while 12(20 %) had poor knowledge level and 6(10%) had good knowledge level in pre- test. The post- test mean knowledge score was 18.63. the findings reveals that . 8.33% of the students had

excellent level of knowledge and 45% had very good level of knowledge score, 38.33% had good knowledge, 5% had good knowledge, 3.33% had poor knowledge level.

- **Section III-** The pre test mean score obtained by the subjects was 8.30 and in the post test it increased to 18.63 showing significant difference in the mean score after intervention indicating effective planned teaching programme. Also when statistically calculated it is evident that the calculated 't' value (14.75) is much greater than tabulated 't' value (2.0) at 0.05 level of significance. Hence the research hypothesis H1 is accepted. Thus it was concluded that the planned teaching programme was effective.
- **Section IV-** Analysis reveals that there is association of knowledge score is with age and There is no association found between knowledge with all demographic variables.

The overall finding of the study revealed that the planned teaching programme on pediatric drug and fluid calculation among 2nd year general nursing and midwifery students was effective.

### CONCLUSION

After the detailed analysis, this study leads to the following conclusion. Knowledge of the 2nd year GNM students regarding the Pediatric drug and fluid calculation was minimal. There was a significant increase in the knowledge of subjects after the introduction of planned teaching programme. To find the effectiveness of planned teaching program, 't' test was applied and 't' value was calculated, post test score was significantly higher at 0.05 level than of pretest score. Thus it was concluded that planned teaching programme on Pediatric drug and fluid calculation was found as an effective teaching strategy.

Hence, based on the above cited findings, it was concluded undoubtedly that the written prepared material by the investigator in the form of planned teaching programme helped the nursing students to improve their knowledge on Pediatric drug and fluid calculation.

So it is important nursing issue regarding Pediatric drug and fluid calculation among 2nd year GNM students of the selected Nursing institution, most of the studies show that proper planning and efforts can be taken to educate nursing students regarding Pediatric drug and fluid calculation which will be helpful in reducing the mortality and morbidity rate among them and thereby preventing future complications among the survivors.

### Implication Of The Study

The findings of this study have implication for nursing practice, nursing education, nursing administrator, nursing administration and nursing research.

### Recommendations

- A similar study can be replicated on a larger population for a generalisation of findings.
- A comparative study can be carried out to find out the knowledge and Practice regarding Pediatric Drug and fluid among the staff nurses and student nurses.
- A video assisted study can be carried out to assess the effectiveness of find out knowledge and practice of student nurses regarding Pediatric drug and fluid calculation.

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