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"A Study to Assess the Effectiveness of Plannedteaching Programme Onpediatric Drug Dose Calculation among Fourth Year B.Sc Nursing Students in a Selected Nursing Colleges In Hyderabad."

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I. Introduction:

A child's dose for medication is smaller than adult dose. Infants are responsive to drugs because of immaturity of organs. As the drug dose is calculated according to the body weight, body surface, age and other factors particularly in children, the nurse should be aware of the calculation of the dose for the particular medication.

Several rules have been devised to calculate infants and children's dosages, but these rules give only approximate dosages. Regardless of the methods used in calculating pediatric drug doses, the nurse should realize that dosage are approximate and often need adjustment based on child's response

As neither age, nor body weight are satisfactory parameters when patients size vary, the development of the surface are concept to calculate dosage has been developed in recent years and are indicated in per square meter.

1.1 Need For The Study:

Drug administration is a vital part in the care of children and all the more in critically ill children. The nurse is wholly responsible for the drug administrated by her, during child care.

The students of final year B.Sc Nursing may soon find themselves responsible for the care of children, administration of emergency drug and the calculation of drug doses in pediatric setting is difficult from that of other setting.

Hence it becomes a mandate for the graduate nurse to be equipped with adequate knowledge on pediatric drug dose calculation

1.2 Clinical Significance:

B.Sc nursing students learn pediatric drug dose calculation as a part of their curriculum in their third year of study. Much of it is not retained by the time they pass out and thus poses the need and importance of being able to calculate pediatric drug doses as even a minor medication error can pose a life threatening consequence in the care of critically ill children.

1.3 Objectives

1) To assess the knowledge of final year B.Sc Nursing students regarding calculation of pediatric drug doses, before planned teaching programme
2) To assess the effectiveness of planned teaching programme
3) To compare pre-test and post – test knowledge score on pediatric drug dose calculation

II. Materials And Methods

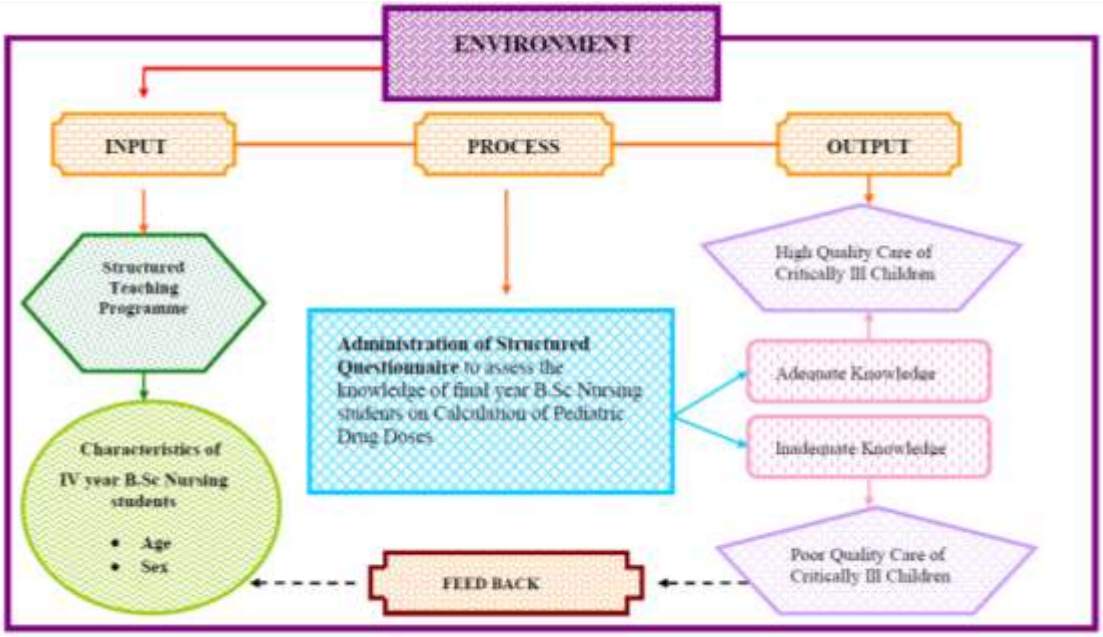

Figure I Conceptual Framework of study based on General System Theory

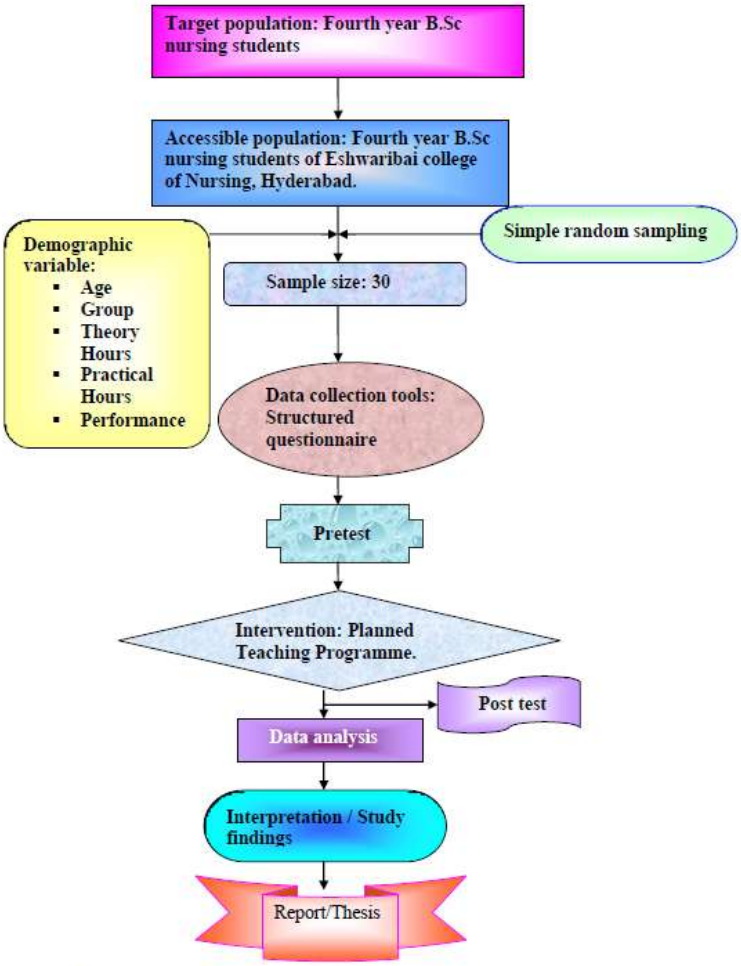

Figure II: Schematic Presentation of Research Design

III. Methodology

2.1 Research Design: Pre-Experimental Research Design
2.2 Population: B.Sc Nursing Students
2.3 Sample size: 30
2.4 Sampling Technique: Simple Random Sampling
2.5 Setting: Eshwaribai College of Nursing
2.6 Variables:

Independent Variable: Calculation of pediatric drug doses
Dependent Variable: Knowledge of final year B.Sc Nursing students

2.7 Data Collection Tools:
Tool consists of structured questionnaire in two sections.
Part A: Demographic characteristics of participants
Part B: Structured questionnaire on calculation of pediatric drug doses.

2.8 Content Validity: obtained from subject experts

2.9 Consent: obtained from college administration and participants

2.10 Sampling Criteria:
Inclusion Criteria:

- ✓ Students who are willing to participate in the study.
- ✓ Students available at the time of data collection.
- ✓ Students in B.Sc Nursing final year.

IV. Results and Discussion

3.1 Analysis of demographic variables

The frequency and percentage distribution of demographic variables of final B.Sc Nursing students showed that majority of students were from age group above 21 years (53.33%), studied Physics, Chemistry, Zoology & Botany (73.33%), had 4 – 6 hours of theory hours on the topic of study (63.33%), 150 – 200 hours of practical experience on the topic (70%), and 53.33% often practice Drug Dose Calculation.

3.2 Comparison of pre test and post test knowledge of students:

The comparison result shows that out of 30 IV years B.Sc Nursing students 40% scored below average knowledge in the pre test and none of them in the post test, 36.66% scored Average knowledge in pre test & 6.67% in the post test and 23.34% scored Above Average knowledge in pre test & 93.33% in post test.

SL.NO	KNOWLEDGE	MEAN	MEAN DEVIATION	STANDARD DEVIATION	t - VALUE	P - VALUE
1	Pre - Test	17	0.033	4.5	2.585	<0.05
2	Post - Test	27	0.3	5.5		

The mean score of knowledge in Pre-test was 17 ($\sigma = 4.5$) and has increased to 27 ($\sigma = 5.5$) in Post-test. The paired't' – test was computed to find out the effectiveness of planned teaching programme on pediatric drug dose calculation. The obtained t- value,'t' =2.585 ($P < 0.05$) was significant.

3.3 Findings on association between the knowledge and demographic variables:

The test result proves that there is no significant association between the knowledge and demographic variables like age X2 = 4.181(table value=5.99), group X2 = 4.134(table value=5.99), number of theory hours X2 = 2.017(table value=9.49), and number of practical hours X2 = 3.937(table value=5.99), performance X2 = 4.214(table value=9.49).

V. Discussion

Knowledge of pediatric drug dose calculation can be improved by effective teaching sessions among final year B.Sc Nursing students. The present study is in agreement with **C. A. Paul (2010)**who conducted a study on a comparative study to assess the knowledge of final year basic B.Sc nursing students on Pediatric Emergency drugs and calculation of drug doses in selected college of nursing in Bangalore. Findings were that

the final year B.Sc nursing students have inadequate knowledge of drug calculations. The knowledge score of the respondents on calculations of drug doses were at 0.05 levels. Based on this study a structured teaching programme was planned to be included in this study.

Present study was also in consistent with **Grandell-Niemi H (2001)**, who conducted a descriptive research to assess the medication calculation skills of graduating nursing students in Finland among 204 nursing students using convenience sampling technique structured questionnaire. The response rate was 88%.It was concluded that the overall student's mathematical skills were inadequate. Another study conducted by **Inez D Kapborg (1994)** on calculation &administration of drug dosage among 197 student nurses revealed that the majority was not familiar with the same.

VI. Recommendations

- A similar study can be conducted by including control group
- A similar study can be conducted by assessing teaching methods
- A similar study can be conducted by using different tools.

VII. Limitations

Location of the setting was distant from the source.

VIII. Conclusions

Based on the findings of the study it can be concluded that effective teaching sessions can improve the knowledge among final year B.Sc Nursing students.

Acknowledgement

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