

Effectiveness of Structured Teaching Programm on Knowledge Regarding Paediatric Emergency Drugs and Calculation of Doses among B.Sc. Nursing Students in Selected Nursing Colleges at Bhopal (M.P.)

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Abstract

The drug administration is a vital part in the care of children and all the more in the care of critically ill children. The nurse is wholly responsible for the drugs administered by her during the emergency situations of child care. A quantitative research approach has been used in this study. The data was collected by using a socio-demographic variables and a structured knowledge questionnaire on paediatric emergency drugs following which a structured teaching programme on paediatric emergency drus and calculation of doses was administered to the B Sc Nursing students on the same day. The data analysis was done by using descriptive and inferential statistics like frequency, percentage , chi square and Z test. Among 50 B Sc Nursing students 64% had inadequate knowledge and 36% of the students had moderately adequate knowledge. After the effectiveness of structured teaching programme the mean pre test knowledge score were 16.44 and post test knowledge scores were 27.32 which showed the effectiveness. In association with pre test knowledge scores, there is no statistically significant association between knowledge score of B Sc Nursing students and socio demographic variables.

Keywords: Paediatric Emergency Drugs, Calculation of Doses, B.Sc. Nursing Students

Introduction

Children are more prone to illnesses and they often require medical as well as surgical treatment to be restored to life and health. The caregivers in the paediatric unit should be knowledgeable and competent in order to administer emergency drugs in the process of the revival of these children. Emergency drugs play the most important role when the airway, breathing, and circulation do not restore the child to life.

In children there is predominantly high likelihood of medication errors. Many factors contribute to this risk,

including weight-based dosing; the need for stock medicine dilution; decreased communication abilities of children; an inability to self-administer medications; and the high vulnerability of young, critically ill children to injury from medications, particularly those with immature renal and hepatic systems.

Nurses enter the profession relatively earlier than other professionals. Soon after the final year of education in B.Sc. (N), the graduates have many lives placed in their hands including the little ones the children. Hence it is essential that the graduating nurses acquire adequate knowledge of

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paediatric emergency drugs and calculation of drug doses in order to avoid errors in medication administration among children especially in critical situations.

Thus these studies evoke a need to study the knowledge of the final year Basic B.Sc. (N) students on Paediatric Emergency Drugs and the calculation of drugs' doses in order to assess the current quality of nursing education as well as to foresee the quality of nursing care in future.

Statement of the Problem

"A study to assess the effectiveness of structured teaching program on knowledge regarding paediatric emergency drugs and calculation of doses among final year B.Sc. (N) students in selected nursing college, Bhopal"

Objectives

- To assess the knowledge of final year B.Sc. (N) students regarding paediatric emergency drugs and the calculation of drug doses.
- To assess the effectiveness of structured teaching program on knowledge regarding paediatric emergency drugs and the calculation of drug doses among final year B.Sc. (N) students
- To find out the association between pre-test & post-test knowledge scores and the selected socio-demographic variables of final year B.Sc. (N) students.

Hypothesis

H1: There is a statistically significant difference between the mean pre and post-test knowledge scores regarding paediatric emergency drugs and calculation of doses among final year B.Sc. (N) students after structured teaching program.

H2: There is a statistically significant association between the pre-test & post-test knowledge scores and the selected socio-demographic variables of final year B.Sc. (N) students.

Review of Literature

A study was conducted to quantify the usefulness and side effects of theophylline with or without ethylene diamine (aminophylline) in acute asthma. Of these, 29 study included an active control, such as adrenaline, beta2 agonists, or leukotriene receptor antagonists, and 23 study compared theophylline (with or without ethylene diamine) with placebo or no drug. Theophylline significantly reduced heart rate when compared with active control ($p=0.01$) and overall duration of stay ($p=0.002$), but beta-2 agonists were superior to theophylline at improving forced expiratory volume in one second (FEV1) ($p=0.002$). Theophylline was not radically dissimilar as of other drugs in its consequence on respiratory rate, lung vital capacity, peak expiratory flow rate, and admission rate, use of emergency medication, saturation of oxygen, and the symptom score. Study revealed that the medications administered along with theophylline changed the efficacy of theophylline.

Material and Methods

Research Approach

A quantitative, research approach is adopted for the study.

Research Design

The research design selected for the present study is a pre experimental one group pre test, post test design selected for the present study.

Variables

Independent variable: Structured teaching program on paediatric emergency drugs and the calculation of drug doses.

Dependent variable: The dependent variable is the knowledge of final year B.Sc. (N) students regarding paediatric emergency drugs and the calculation of drug doses.

Setting of the Study

The study was conducted in R.D. Memorial College of Nursing, Bhopal.

Population

The population consists of the final year B.Sc. (N) students.

Sample

The sample of the study is final year B.Sc. (N) students studying in R. D. Memorial College of Nursing, Bhopal, (M.P.)

Sampling Method

Non Probability sampling method was adopted for the study.

Sampling Technique

Convenience sampling technique was adopted for selection of the subject.

Sample Size

The sample size is 50 final year B.Sc. (N) students studying in R. D. Memorial College of Nursing, Bhopal (M.P.)

Sampling Criteria

Inclusion criteria: (1) Students who have appeared for the university examination in pediatric nursing. (2) Students who are willing to participate in the study.

Exclusion criteria: (1) Students who are absent at the time of data collection. (2) Students who have failed to appear for the university examination in Pediatric nursing.

Development of the Tool

A self-administered structured questionnaire was developed by the researcher on selected Paediatric emergency drugs with extensive review of literature, journals, text books etc.

Data Collection

Pre test was done by using self administered structured

questionnaire and structured teaching program was given on the same day. After 7 days post test was done and data was collected.

Findings of the Study

The findings of the study are organized under following sections:

Section I: Distribution of final year B.Sc. (N) students based on their socio demographic variables .

Section II: Distribution of final year B.Sc. (N) students based on their pre and post test level of knowledge regarding paediatric emergency drugs and the calculation of drug doses.

Section III: Deals with effectiveness of structured teaching program on knowledge regarding paediatric emergency drugs and the calculation of drug doses among final year B.Sc. (N) students.

Section IV(i): Association between Pre test knowledge scores regarding paediatric emergency drugs and the calculation of drug doses and the socio demographic variables of final year B.Sc. (N) students.

Section IV(ii): Association between the Post test level scores of knowledge regarding paediatric emergency drugs and the calculation of drug doses and their selected socio demographic variables.

Distubution Based on Demographic Variables

S. No.	Demographic Variables	Frequency (f)	Percentage (%)
1.	Age		
	20-22	36	72
	23-25	14	28
2.	Gender		
	Male	01	2
	Female	49	98
3.	Group selected in 10+2 curriculum		
	PCMB	6	12
	PCB	44	88
4.	Source of information regarding paediatric drug and calculation		
	Books	24	48
	Journals	13	26
	Internet	13	26
5.	Seminar, Workshop attended		
	One time	23	46
	Two time	17	34
	Three time or more	10	20

Pre-test knowledge score of final year B.Sc. (N) students

regarding paediatric emergency drugs and the calculation of drug doses.

The frequency and percentage show that the pre-test knowledge score of final year B.Sc. (N) students regarding paediatric emergency drugs and the calculation of drug doses, 64% of the student had inadequate knowledge and 36% of the student had moderately adequate knowledge.

The effectiveness of a structured teaching program on knowledge regarding on Paediatric Emergency Drugs and the Calculation of Drug Doses.

The study reveals that the means pretest knowledge scores were 16.44 and post-test knowledge scores were 27.32. The calculated 'Z' value 19.08 is greater than the table value 0.4744 at 0.05 level of significance.

Association between pre-test and post-test knowledge scores and the selected socio-demographic variables.

In association with pretest knowledge scores, there is no statistically significant association between knowledge scores of final year Basic B.Sc. (N) students and the socio-demographic variables. The Chi-Square test established a non-significant relationship between the groups selected in 10+2 curriculum and the knowledge level of final year B.Sc. (N) students. There is no association between the source of information, seminar or workshop attended regarding paediatric emergency drugs and the pre-test and post-test knowledge scores of final year B.Sc. (N) students.

Conclusion

The study reveals that a structured teaching program was effective in enhancing the knowledge of final year B.Sc. (N) students regarding paediatric emergency drugs.

Nursing Education

The nurse educators are expected to teach the students on all the Paediatric Emergency drugs including the calculation of drug doses. These students attend the varying number of hours spent on the topic of Paediatric Emergency Drugs and the Calculation of Drug Doses. Moreover, seminar and workshop conducted in colleges also help in providing knowledge and the study reveals that structured teaching program on Paediatric Emergency Drugs and the Calculation of Drug Doses can be of tremendous help in enhancing knowledge of final year B.Sc.(N) students regarding Paediatric Emergency Drugs and the Calculation of Drug Doses.

Nursing Administration

Several studies have shown knowledge deficiency in the area of calculation of drug doses among children. This deficiency can be attributed to inadequate educational preparation in the area of Paediatric Emergency Drugs and the Calculation of Drug Doses and the shortage of time experienced by the nursing supervisors for the supervision of the graduate nurses during their nursing care of children.

Nursing Research

Every graduate nurse should be proficient and confident in the administration of Paediatric Emergency Drugs and the Calculation of Drug Doses. The deficiency in the knowledge among final year B.Sc. (N) students can result in medication errors, adverse drug events and even death in children. The findings of the present study can form the basis for future research.

Recommendation

The following recommendations were proposed for further research.

- The study can be replicated with a large sample to assess the effectiveness of structured teaching program regarding Paediatric Emergency Drugs among final year B.Sc. (N) students.
- A comparative study can be conducted between final year B.Sc. (N) students and staff nurses.
- A study can be done to assess the skills of nursing students in the administration of Paediatric Emergency Drugs and the Calculation of Drug Doses.
- A true experimental study can be conducted to assess the effectiveness of structured teaching program regarding Paediatric Emergency Drugs among final year B.Sc. (N) students.
- An exploratory study can be conducted on incidence and prevalence of medication errors in paediatric drug administration.

Conflict of Interest: None

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