

Efficacy of a Structured Teaching Program on Antenatal Examination Knowledge among Third-Year Nursing Students in a Selected College of Greater Noida

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Abstract: Antenatal Examination is the diagnosis of pregnancy and calculation of gestational age. Women can access services essential for their health and the health of the unborn baby by maintaining constant interactions with a physician, nurse, or midwife during the duration of their pregnancy. The study aimed to evaluate the effectiveness of a structured teaching program on the knowledge of antenatal examination among third-year nursing students. This study is pre-experimental research conducted among third-year nursing students at a selected college in Greater Noida, U.P. A total of thirty students were selected using a simple random sampling technique for a self-structured knowledge questionnaire. The results indicated that students' knowledge scores improved following a structured teaching program.

Keywords: Effectiveness, Structured Teaching Program, Knowledge, Antenatal Examination, Nursing Students.

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I. INTRODUCTION

Access to essential maternal health services is crucial for the well-being of mothers and their babies. If women can receive urgent maternal health care and assistance from trained professionals during their pregnancy and delivery, several thousand lives could be saved each year. Most of the interventions they require are straightforward, affordable, and highly effective.

Pregnant women can access essential health services for themselves and their unborn children by maintaining regular contact with their doctor, nurse, or midwife. To reduce perinatal mortality and improve women's experiences with care, the World Health Organization (WHO) has updated its recommendations, increasing the minimum number of antenatal care visits from four to eight. Consequently, data reporting at the national, regional, and global levels is currently available only for a minimum of four visits.

Worldwide, 87 percent of pregnant women receive antenatal care from skilled health personnel at least once, but less than 60 percent (59 percent) have at least four antenatal care visits.

Every day, approximately 800 women die from complications related to pregnancy or childbirth. According to the WHO (2019), around 295,000 women died during or after pregnancy and childbirth in 2017.

The nursing profession is fundamental to the healthcare delivery system. It is essential for nursing students to receive adequate training to develop the skills and mindset necessary for providing high-quality obstetric care. This training is vital for reducing maternal mortality rates. Consequently, it is important to investigate and understand the perceptions of future nurses regarding prenatal assessments, especially in a country where maternal mortality is high.

➤ *Objectives:*

- To evaluate the pre-test knowledge level regarding antenatal examination among third-year nursing students.
- To evaluate the post-test knowledge level regarding antenatal examination among third-year nursing students.
- To evaluate the effectiveness of a structured teaching program on antenatal examination among third-year nursing students by comparing with pre-test and post-test scores.

II. MATERIALS AND METHODS

➤ *Research Approach:*

The research approach outlines a strategy and plan that encompasses the introduction of assumptions into specific data collection, analysis, and interpretation procedures. This approach is determined by the nature of the research challenge being addressed. For this study, a quantitative research strategy was chosen.

➤ *Research Design:*

The research design serves as the framework or blueprint for a research project. It specifies the steps necessary to obtain the data needed to meet the research issue. In this study, a pre-experimental research design was used.

➤ *Variables*

- **INDEPENDENT VARIABLES:** An independent variable is a feature or circumstance that the researcher manipulates to determine its relationship to the phenomenon being studied, such as a structured educational program.
- **DEPENDENT VARIABLES:** Dependent variables are the key traits that change as the experimenter manipulates the independent variables. In this study, knowledge is a crucial dependent variable.

➤ *Research Setting:*

The research was carried out at Prakash Institute of Physiotherapy, Rehabilitation, and Allied Medical Sciences in Greater Noida, UP.

➤ *Target Population:*

The target population includes B.Sc. Nursing and GNM students from the Prakash Institute of Physiotherapy, Rehabilitation, and Allied Medical Sciences in Greater Noida, U.P.

➤ *Sample:*

The sample consisted of B.Sc. Nursing and GNM students from Prakash Institute of Physiotherapy, Rehabilitation and Allied Medical Sciences in Greater Noida, U.P.

➤ *Sample Size:*

The sample size was 30 students of B.Sc. Nursing and GNM.

➤ *Sampling Technique:*

Simple random sampling technique was adopted.

➤ *Tool*

- **TOOL I:** Demographic Proforma
- **TOOL II:** Self-Structured Knowledge Questionnaire.

III. DESCRIPTION OF THE DATA COLLECTION TOOLS AND TECHNIQUES

➤ *Tool I (Demographic Proforma):*

The tool I Demographic Proforma was developed to collect sample characteristics of staff nurses and consisted of eight (10) items which include age, gender, religion, marital status, type of family, ongoing nursing program, any clinical demonstration, previous exposure, source of information and the number of antenatal examinations you have conducted.

➤ *Tool II (Self-Structured Knowledge Questionnaire)*

A self-structured questionnaire to assess nursing students' knowledge about antenatal examinations. Self-structured knowledge questionnaire consists of 30 multiple-type questions. Each question contains four options. Correct answer will score one for each question. The ranges of minimum and maximum scores showed 0–30. The scores divided knowledge level into the following three categories: Poor knowledge level indicating a score of 0–10; fair knowledge level, specifying a score of 11–20; and good knowledge level having a score of 21–30. The highest scores represent the highest levels of student's knowledge regarding antenatal examination.

➤ *Content Validity of the Tool*

In this study, we assessed the content validity of the tools to ensure their effectiveness. The tools were submitted to five experts in the nursing department along with a scoring sheet and a request letter. Their feedback led to several corrections, which were then incorporated into the final version.

➤ *Ethical Consideration*

Ethical permission was acquired from the ethics committee of the Prakash Institute of Nursing in Greater Noida to conduct a research study. The study participants were provided with a written informed consent form that detailed their willingness to participate in the research project, and they received an explanation of the project's objectives.

➤ *Data Collection Procedure*

The assessment tools were effectively administered to a group of 30 nursing students at a selected college. On average, third-year nursing students dedicated 10 to 15 minutes to thoughtfully complete the questionnaire, demonstrating their commitment to providing valuable insights. The data-gathering process was concluded by expressing gratitude to each participant for their cooperation and kind involvement.

IV. FINDINGS

➤ Section- A

Table 1: Frequency and Percentage Distribution of Third-Year Nursing Students based on Demographic Variables N=30

S. No	Demographic Variable	Frequency	Percentage (%)
1.	Age (in years)		
	18-20	2	6%
	21-23	25	83%
	24-26	2	6%
	Above 26	1	3%
2.	Gender		
	Male	17	56%
	Female	13	43%
3.	Religion		
	Hindu	27	90%
	Muslim	3	10%
	Sikh	0	0%
	Christian	0	0%
4.	Marital Status		
	Single	28	94%
	Married	2	6%
	Divorce	0	0%
	Other	0	0%
5.	Type of Family		
	Nuclear family	24	80%
	Joint family	5	17%
	Extended family	1	3%
	Other	0	0%
6.	Ongoing nursing program		
	B.Sc. nursing	15	50%
	GNM	15	50%
7.	Any Clinical Demonstration		
	Yes	19	63%
	No	11	37%
8.	Previous Exposure to Any Health Teaching		
	Yes	14	46%
	No	16	54%
9.	Source of Information		
	Family	4	13%
	Institute	13	44%
	Health worker	9	30%
	Mass media	4	13%
10.	The number of antenatal examinations you have conducted.		
	Many times,	4	13%
	Few times	5	17%
	Only observed	12	40%
	Never	9	30%

Table no. 1 depicts that the majority (56%) of the students were male in the age group of 21-23 years, most of the students (90%) were Hindu, (94%) of students were single, (80%) students were living in a nuclear family, (50%)

of students were in GNM and (50%) in B.Sc. nursing, (63%) of students have undergone clinical demonstration, (44%) of students had a source of information through the institute, (40%) students were only observed antenatal examination.

➤ *Section- B*

Table 2: Frequency and Percentage Distribution of Pre-Test and Post-Test Knowledge Scores among Third-Year Nursing Students N=30

Knowledge Level Score	Score range	Pre-test Score		Post-test Score	
		Frequency	Percentage	Frequency	Percentage
Poor	1-10	8	26.6%	3	10%
Good	11-20	22	73.3%	27	90%
Excellent	21-30	0	0%	0	0%

Table no. 2 depicts that 73.3% of students had good knowledge whereas 26.6% had poor knowledge in the pre-test and 90% of students had good knowledge whereas 10%

had poor knowledge in the post-test regarding antenatal examination.

➤ *Section- C*

Table 3: Findings Related to the Mean of Pre-Test and Post-Test Knowledge Scores among Third-Year Nursing Students N=30

Knowledge Score	Total Score	Mean	Mean difference	Standard Deviation	t-test
Pre-test	387	12.90	0.56	2.797	5.89
Post-test	404	13.46		2.348	

Table no. 3 depicts that the mean knowledge score of post-tests was higher than that of pre-tests, with scores of 12.90 and 13.46, respectively.

V. DISCUSSION

An analysis of nursing students' attitudes and knowledge regarding prenatal exams in Sikkim was conducted in a similar study in 2016. The research took place at Sikkim Manipal College of Nursing, Vinayaka Mission College of Nursing, and the School of Nursing at STNM Hospital in Gangtok, Sikkim, India. This quantitative, descriptive, and correlational study utilized a structured questionnaire to collect data and employed nonprobability convenience sampling to select 64 nursing students. The results indicated that the average knowledge score of nursing students regarding antenatal examination was 20.07, which corresponds to 66.97%. However, a significant number of nursing students (n=54, 84.3%) demonstrated insufficient knowledge about antenatal examinations. The study reported that nursing students have a favorable opinion regarding antenatal examinations, as indicated by a mean score of 175.2% (with a standard deviation of 89.5%) compared to an expected score of 84 (SD 4.098). Furthermore, the findings reveal a weak positive correlation ($P < 0.005$) between nursing students' attitudes toward prenatal exams and their understanding of the topic.

➤ *Recommendation*

- The results could be generalized by conducting a similar study with a larger sample size.
- A comparable study could be conducted with staff nurses to assess their familiarity with antenatal examinations.
- Infertile couples might benefit from a similar study to enhance their understanding of antenatal examinations.

VI. CONCLUSION

The study compellingly demonstrated that following participation in a structured teaching program on antenatal examinations, a significant majority of students exhibited a robust understanding of the subject. The statistically significant difference between their pre-test and post-test knowledge scores underscores the effectiveness of the structured teaching program intervention.

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