

A Descriptive Study to Evaluate the Knowledge of Family Planning Methods Among Primi-Postnatal Mothers and Assess the Effectiveness of a Structured Teaching Program at a Selected Hospital in Delhi, India

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Abstract

Introduction: Family planning (FP) is defined as a lifestyle choice that individuals and couples adopt voluntarily, based on informed knowledge, attitudes, and responsible decision-making. It involves planning for pregnancy to ensure the welfare of the family. By controlling population growth, family planning helps in creating happier, healthier families. This is especially important in India, where the population has surged in recent decades. Family planning has been widely acknowledged as a key component of the nation's maternal and child health services. India was the first nation to launch a Family Planning Program, which commenced in 1952. Research by Bekele et al. on the knowledge and attitudes towards family planning among women of reproductive age revealed that a significant proportion of women lacked adequate knowledge and had negative attitudes toward family planning methods. **Objectives:** a) To assess the knowledge regarding family planning methods among primi-postnatal mothers at selected hospital in Delhi; b) To develop a structured teaching program in terms of gaining the knowledge of primi-postnatal mothers; and c) To assess the effectiveness of structured teaching program in terms of gaining the knowledge of primi-postnatal mothers. **Method:** The research method employed in this study was quantitative. A sample of 60 primiparous postnatal mothers from a selected hospital in New Delhi was chosen using the purposive sampling technique. The instruments for the study included a self-structured knowledge questionnaire. **Result and Conclusion:** The teaching program was evaluated by analyzing the mean and post-test scores. The mean pre-test score was 10.75, while the mean post-test score was 17.5, showing a mean difference of 6.75. Therefore, the teaching program was found to be effective in enhancing the knowledge of primiparous postnatal mothers about various family planning methods.

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INTRODUCTION

Family planning (FP) is defined as a lifestyle choice that individuals and couples adopt voluntarily, based on informed knowledge, attitudes, and responsible decision-making. It involves planning for pregnancy in a way that ensures the welfare of the family. By controlling population growth, family planning helps in creating happier, healthier families. This is especially important in India, where the population has increased significantly in recent decades [1].

Pregnancy occurs when sperm fertilizes an egg (ovum). Contraceptive methods prevent pregnancy by either stopping egg production, preventing the sperm and egg from joining, or preventing the fertilized egg from implanting in the uterus. In simple terms, contraception refers to methods that prevent pregnancy, thus helping women avoid unintended pregnancies [2].

India ranks first globally in terms of population, following China, with the majority of its population residing in rural areas. Family planning has been widely acknowledged as a vital component of the country's maternal and child health services. India was the first nation to launch a Family Planning Program, which commenced in 1952 [3]. Research by Bekele *et al.* on the knowledge and attitudes towards family planning among women of reproductive age revealed that a significant proportion of women lacked adequate knowledge and had negative attitudes toward family planning methods [4].

The main objectives of family planning methods are to ensure appropriate spacing between pregnancies and to control the number of children born. Achieving these goals relies on the knowledge, attitudes, and practices of individuals. A disconnect between these factors can impact the overall effectiveness of family planning initiatives. Research studies have shown that a woman's level of education is a significant factor in influencing her knowledge, attitude, and practice concerning family planning methods [5, 6].

METHODS

For this study, a quantitative research approach was adopted. The sample consisted of 60 Primi Postnatal mothers from a selected hospital in New Delhi, chosen using the purposive sampling technique. The study aimed to assess the knowledge level of family planning among primiparous postnatal mothers, create a structured teaching program, and evaluate the effectiveness of the program. Data collection was carried out using a self-constructed knowledge questionnaire, designed to assess the understanding of Primi-Postnatal mothers regarding family planning methods. The study received approval from both the Institutional Ethical Committee and the ethical committee of the relevant hospital. Permission was also obtained from relevant authorities before initiating data collection.

Informed consent was taken from all participants. The gathered data was analyzed in alignment with the study's objectives using both descriptive and inferential statistical methods.

RESULT

Table 1 presents the sample characteristics of 60 participants in the study. Regarding age, the majority of the 60 Primi Postnatal mothers in the study were aged 20–30 years (90%), housewives (90%), and lived in rural areas (55%). Most had secondary-level education (50%) and were Hindus (80%). Regarding monthly income, the majority earned between Rs 5001 and 10,000 (70%). A significant portion (55%) had previous knowledge of family planning, with most having learned about it from family and relatives (55%). Lastly, the majority (85%) had never used family planning methods.

Table 2 reveals the data of participants' knowledge of family planning methods between the pre-test and post-test. Initially, the pre-test results indicated a limited understanding, with correct responses ranging from 20 to 46.6%. However, after the intervention, there was a considerable increase in correct answers across all questions. For instance, the question "What is the primary purpose of family planning?" saw an increase from 36.6 to 80%, and "Which is the most commonly used temporary family planning method?" improved from 33.3 to 85%.

Similarly, other questions, such as "What is the duration of protection provided by a Copper-T device?" and "What is the main function of oral contraceptive pills?" experienced significant improvements in correct answers, rising from 36.6 to 90%. This trend of improvement was consistent across all questions, including those related to emergency contraception, hormonal methods, and sterilization.

Table 1. Frequency and percentage distribution of sample characteristics Primi Postnatal mothers (N=60).

S.N.	Sample characteristics	Frequency	Percentage
1.	<i>Age</i>		
	20–30 years	54	90%
	31–40 years	6	10%
	41–45 years	0	0
2.	<i>Occupation</i>		
	Housewife	54	90%
	Working	6	10%
3.	<i>Housing</i>		
	Rural	33	55%
	Urban	27	45%
	Suburban		
4.	<i>Education</i>		
	Primary level	24	40%
	Secondary level	30	50%
	Graduation	06	10%
	Post-graduation and above	0	0%
5.	<i>Religion</i>		
	Hindu	48	80%
	Sikh	00	0%
	Muslim	12	20%
	Others	00	0%
6.	<i>Monthly Income</i>		
	Rs. 1000–5000	18	30%
	Rs. 5001–10,000	42	70%
	Rs. 10,001–20,000	00	0%
	More than Rs. 20,000		0%
7.	<i>Do you have any previous knowledge regarding methods of family planning?</i>		
	Yes	33	55%
	No	27	45%
8.	<i>Members</i>		
	Mass media	06	10%
	Health workers	1	1.67%
	Family and relatives	33	55%
	Friends	20	33.33%
9.	<i>Have you ever used family planning methods?</i>		
	Yes	09	15%
	No	51	85%

Additionally, questions that had lower correct response rates in the pre-test, such as "What is lactational amenorrhea, and when is it effective?" (from 20 to 80%) and "What is the recommended time for taking emergency contraception?" (from 33.3 to 90%), also showed significant progress. These results highlight the success of the educational intervention in improving participants' knowledge of family planning.

In conclusion, the post-test scores reflect a clear and significant increase in participants' understanding, with the majority demonstrating a strong grasp of family planning methods. This

underscores the success of the intervention in raising awareness and improving knowledge about various contraceptive methods and their proper use.

Table 3 classifies the participants' knowledge levels according to their pre-test scores. It shows that a majority initially had poor knowledge (below 50%), and a smaller proportion had average knowledge (50–74%). No one demonstrated good knowledge ($\geq 75\%$) in the pre-test (Figure 1).

Table 2. Frequency and percentage distribution of pre and post Knowledge score of Primi Postnatal mothers (N=60).

S.N.	Statement	Percentage (%)	Pre-test score	Percentage (%)	Post test Score
1.	What is the primary purpose of family planning?	22	36.6%	48	80%
2.	Which is the most commonly used temporary family planning method?	20	33.3%	51	85%
3.	What is the duration of protection provided by a Copper-T device?	22	36.6%	54	90%
4.	What is the main function of oral contraceptive pills?	22	36.6%	54	90%
5.	Which natural family planning method involves tracking the cycle?	20	33.3%	56	93.3%
6.	How effective are male condoms in preventing pregnancy if used well?	28	46.6%	56	93.3%
7.	What is lactational amenorrhea, and when is it effective?	12	20%	48	80%
8.	What is a permanent method of family planning for females?	24	40%	54	90%
9.	Which hormone is present in emergency contraceptive pills?	24	40%	57	95%
10.	What is the recommended time for taking emergency contraception?	20	33.3%	54	90%
11.	What is the primary benefit of injectable contraceptives?	16	26.6%	51	85%
12.	Which method involves the surgical cutting of fallopian tubes?	16	26.6%	56	93.3%
13.	What does an intrauterine device release to prevent pregnancy?	24	40%	51	85%
14.	Why is it important to space pregnancies using family planning?	20	33.3%	54	90%
15.	Which method offers dual protection against pregnancy and STIs?	16	26.6%	45	75%
16.	How do hormonal patches prevent pregnancy?	26	43.3%	48	80%
17.	Which of the following is NOT a side effect of hormonal methods?	20	33.3%	51	85%
18.	What is the key difference between male and female sterilization?	24	40%	51	85%
19.	What are the eligibility criteria for sterilization?	28	46.6%	54	90%
20.	Why consult a healthcare professional before starting family planning	24	40%	48	80%

Table 3. Frequency and percentage distribution pre-test knowledge score (N=60).

Level	Score Range (%)	Frequency	Percentage
Good	75% and above	0	0%
Average	50–74%	24	40%
Poor	Below 50%	36	60%

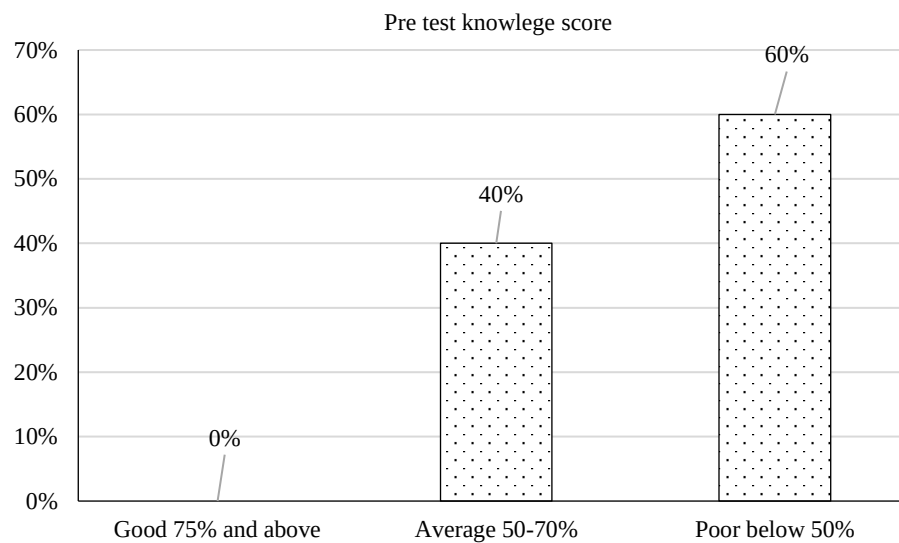


Figure 1. Bar diagram shows the percentage distribution of the pre-test Knowledge score.

Table 4. Frequency and percentage distribution post-test knowledge score (N=60).

Level	Score Range (%)	Frequency	Percentage
Good	75% and above	42	70%
Average	50-74%	18	30%
Poor	Below 50%	0	0%

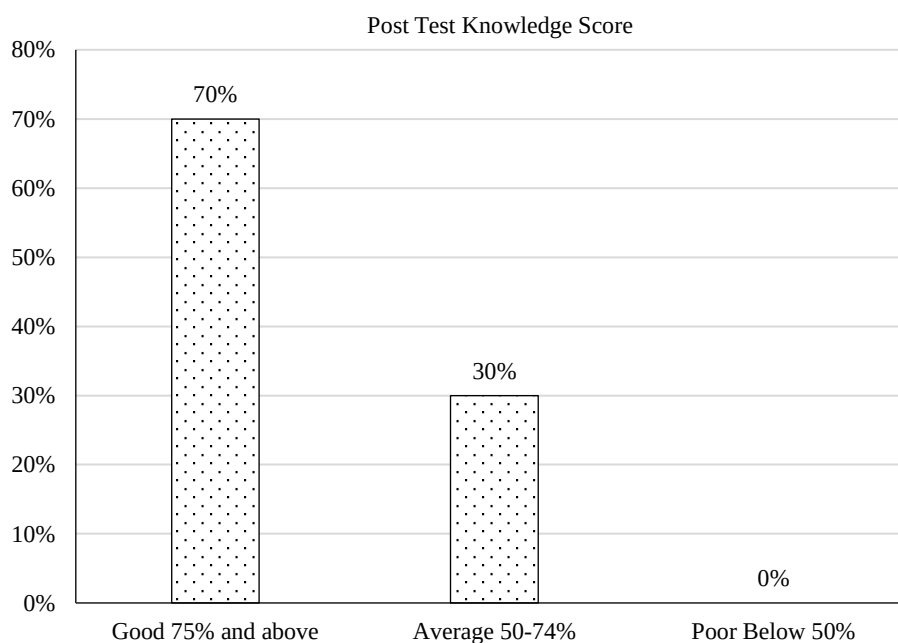


Figure 2. Bar diagram shows the percentage distribution of the post-test Knowledge score.

Table 4 shows that the majority scored in the "Good" range (75% and above). This suggests that the majority of participants were able to achieve strong results, indicating a high level of proficiency or understanding of the subject matter being assessed. The remaining participants, falling in the "Average" range (50–74%), showed satisfactory performance, though there was no indication of poor performance, as none of the participants scored below 50% (Figure 2).

FINDINGS RELATED TO THE EFFECTIVENESS OF THE STRUCTURED TEACHING PROGRAMME REGARDING METHODS OF FAMILY PLANNING

Table 5 presents an analysis of **pre-test** and **post-test** scores for a group of participants. The **pre-test mean** score is **10.75**, while the **post-test mean** is **17.5**, showing an improvement with mean difference **6.75**. The standard deviation (SD) for the pre-test is 1.42, showing less variation in the scores, while the post-test has a higher SD of 1.99, indicating greater spread in the scores after the intervention. The t-value of 91.7 points to a significant difference between the pre-test and post-test scores, with a p-value ≤ 0.05 , confirming that the observed difference is statistically significant and not random. This suggests that the intervention or learning process was effective in enhancing participants' scores (Figure 3).

DISCUSSION

The study effectively demonstrates that the intervention or learning process positively impacted the participants' knowledge, as evidenced by the significant improvement in post-test scores compared to pre-test scores. The mean score increase of 6.75 score, coupled with the statistical significance (t-value=91.7, p-value ≤ 0.05), confirms that the observed changes were not due to random chance. While the pre-test scores had lower variability, the post-test scores showed greater spread, which could indicate a more diverse range of outcomes post-intervention. Overall, the findings suggest that the implemented intervention was successful in enhancing the participants' knowledge, and such educational strategies can be considered effective.

Pushpam conducted a descriptive study to evaluate the knowledge and attitudes towards temporary contraceptive methods among 100 married women of reproductive age by using purposive sampling in Kot Bhalwal, Jammu.

Table 5. Effectiveness of planned teaching program regarding methods of family planning (N=60).

Type of score	Mean value	Mean difference	SD	T value	P value
Pre-Test Score	10.75	6.75	1.42	91.7	$P \leq 0.05$
Post-Test Score	17.5		1.99		

Note: *significant at $p \leq 0.05$.

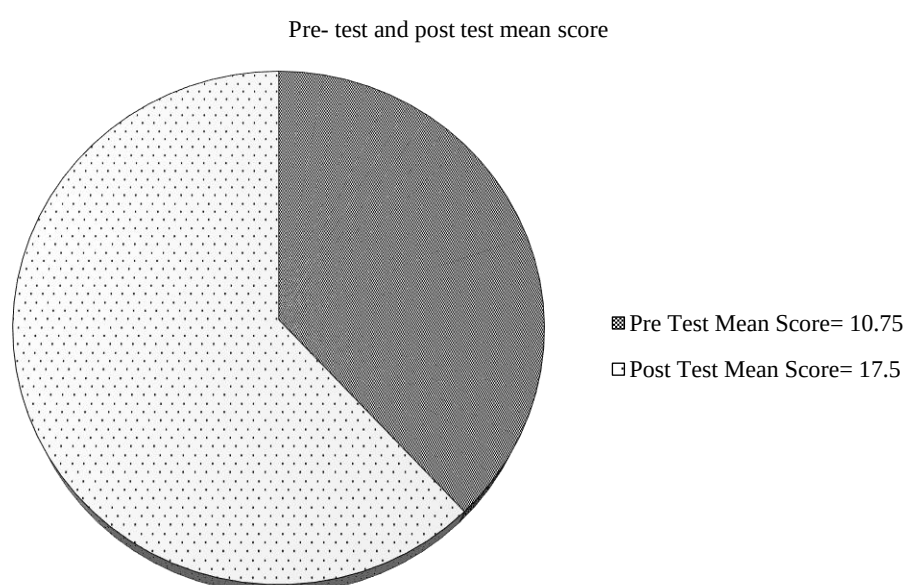


Figure 3. Pie diagram showing a comparison of pre-test and post-test mean scores of knowledge questionnaire.

A self-structured questionnaire, which included socio-demographic information along with questions on knowledge and attitudes regarding temporary contraceptive methods, was used for data collection. The tool was evaluated for content validity and reliability prior to its use in the study. Among the 100 participants, 25% (25 women) had inadequate knowledge about temporary contraceptive methods, 68% (68 women) had moderate knowledge, and 7% (7 women) had adequate knowledge. Regarding attitudes, 1% (1 woman) displayed a negative attitude, 37% (37 women) had a neutral attitude, and 62% (62 women) exhibited a positive attitude towards temporary contraceptive methods [7].

In 2022, Thomas and Angeline conducted a study to assess the knowledge and attitude towards family planning methods among 60 postnatal mothers at Bishop Benziger Hospital, Kollam, using purposive sampling. Data were gathered through a structured questionnaire. The results showed that 43.33% of the postnatal mothers had moderate knowledge, while 56.67% had adequate knowledge about family planning methods. Regarding attitude, 36.67% displayed a moderate attitude, and 63.33% had an adequate attitude towards family planning methods. In conclusion, the study found that postnatal mothers had moderate knowledge of family planning methods and were eager to learn more about newer options available [8].

An experimental study was conducted by Jadhav to assess the impact of a Structured Teaching Program on the knowledge and practices of family planning methods among primiparous postnatal mothers at Indira Gandhi Children's Hospital, Bangalore. A total of 60 subjects were selected using a non-probability convenience sampling technique, and an exploratory design was employed. Data collection was carried out through structured interviews, which included two sections: socio-demographic information and a knowledge questionnaire, along with a practice checklist. The structured teaching program focused on infant care was then administered. The results revealed that in the pre-test, 16 (40%) of the Primi Postnatal mothers had average knowledge, while the remaining 24 (60%) had low knowledge. Following the intervention, the post-test scores showed a significant improvement in knowledge: 12 (30%) of the mothers had high knowledge, and 28 (70%) had average knowledge. The mean knowledge score increased from 16.2 (± 2.85) in the pre-test to 22.45 (± 2.13) in the post-test, indicating a notable improvement in the participants understanding [9].

Patil *et al.* conducted a research study to assess knowledge regarding family planning among 100 primi postnatal mothers at a Maternity ward in KH Karad, selected by convenient sampling technique. The study found that 72% of the primi postnatal mothers had average knowledge scores, 16% had good knowledge, and 12% had poor knowledge scores regarding family planning. The mean knowledge score was 12.36 with a standard deviation (SD) of 2.15 [10].

CONCLUSION

The present study aimed to evaluate the knowledge and assess the teaching program's effectiveness in enhancing primi-postnatal mothers' knowledge regarding various family planning methods. The findings are summarized as follows:

1. *Pre-Test Knowledge Assessment:* Before the intervention, the majority of participants (60%) exhibited poor knowledge regarding family planning methods, while 40% demonstrated average knowledge.
2. *Post-Test Knowledge Improvement:* Following the teaching program, there was a significant enhancement in knowledge levels. Notably, 70% of participants achieved a 'Good' knowledge level (75% and above), and 30% attained an 'Average' level (50–74%).
3. *Statistical Analysis:* The mean pre-test score was 10.75, whereas the mean post-test score increased to 17.5, resulting in a mean difference of 6.75. This substantial improvement was statistically significant, indicating the effectiveness of the teaching program.

In conclusion, the study shows that the teaching program successfully improved the knowledge of primiparous postnatal mothers about family planning methods. This enhancement is vital for making informed decisions and supporting maternal and child health.

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