RESEARCH PAPER

A Pre-Experimental Study to Assess the Effectiveness of an Information Booklet on Knowledge Regarding Selected Temporary Contraceptive Methods Among Women Residing in Selected Rural Areas of Pune District

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ABSTRACT

Family planning and contraceptive awareness play a vital role in promoting reproductive health, reducing maternal and infant morbidity, and supporting socioeconomic development. Despite the availability of temporary contraceptive methods such as condoms, oral pills, IUDs, and injectables, awareness and utilization remain low, particularly among rural women. This pre-experimental study was conducted to assess the effectiveness of an information booklet on knowledge regarding selected temporary contraceptive methods among women residing in rural areas of Pune district.

Methodology: A quantitative research approach with a one-group pre-test post-test design was adopted. The study included 100 women aged 18–45 years, selected through random sampling. Data collection was performed using a structured knowledge questionnaire comprising demographic variables and 15 questions related to contraceptive methods. Content validity of the tool was ensured, and reliability was established (r = 0.9627). A pilot study confirmed feasibility.

Result: Findings revealed that before the intervention, 49% of women had poor knowledge, 39% had average knowledge, and only 12% demonstrated good to excellent knowledge. The mean pre-test score was 6.48 (SD = 3.28), reflecting limited baseline awareness. Post-intervention results showed a significant improvement, with 67% of participants achieving excellent knowledge, 32% good knowledge, and only 1% in the average range. None remained in the poor category. The mean post-test score increased to 16.43 (SD = 2.20). A paired t-test confirmed statistical significance (t = 22.36, p = 0.0001). Chi-square analysis indicated no significant association between knowledge gain and demographic variables such as age, education, occupation, number of children, or prior contraceptive use, demonstrating that the intervention was effective across diverse groups.

Conclusion: The study concludes that information booklets are highly effective, low-cost, and scalable tools for improving knowledge of temporary contraceptive methods in rural communities. Such interventions can empower women, enhance informed decision-making, and strengthen family planning initiatives in India.

Keywords: Temporary contraceptive methods, Information booklet, Knowledge, Family planning, Rural women, Reproductive health.

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INTRODUCTION

Birth control, which is also called methods of contraception, is the use of drugs, tools, or surgery to stop a woman from getting pregnant. There are a lot of various kinds. Some can be undone, but others can't. Some kinds can also help keep you from getting STIs.[1]

In Hindi, the word for birth control is "garbh nirodh." Everyone in the country has to know how to plan their families, use contraception, and learn about sex. This will make sure that everyone has safe sex. It can help you stay healthy and know about illnesses that are transmitted sexually including HIV, AIDS, and many more. Everyone needs to know about sex education for their health and to help the economy prosper by making smart choices.[2]

Condoms, birth control pills, contraceptive injections (DMPA), IUDs (Copper-T, LAM), and emergency contraceptive medications are all temporary forms of

birth control. It is important to talk to a doctor about family planning and which kind of contraception is best for you. When someone is not ready to have a baby yet and wants to postpone pregnancy, temporary contraceptive methods are used. Short-term contraceptive methods can be stopped whenever pregnancy is desired. Condoms are thin sheets that act as a barrier to prevent pregnancy.[3]

Hormones in birth control pills prevent fertilization of the female egg. Hormonal injections help prevent pregnancy. The lactational amenorrhea method (LAM) is used after childbirth to prevent pregnancy. Copper intrauterine devices (IUDs) can also prevent pregnancy, even when used within five days of unprotected sexual intercourse.[4–6]

NEED OF THE STUDY

The process of pregnancy and childbirth involves risks of mortality and morbidity. Couples use contraceptives to avoid pregnancy; however, these methods may also have health risks. To make informed choices, awareness of both benefits and risks is essential. For example, oral contraceptive pills reduce the risk of endometrial and ovarian cancers and protect against pelvic inflammatory disease and ectopic pregnancy, though they may increase the risk of cardiovascular disease. IUDs are highly effective but may increase infection risk in certain high-risk individuals. Barrier methods are less effective in preventing pregnancy but offer protection against sexually transmitted infections, including HIV. The importance of contraceptive benefits and risks varies across populations due to differences in disease prevalence.[7]

Globally, of the approximately 1.9 billion women of reproductive age, 1.1 billion required family planning services in 2019. Among them, 842 million used modern contraceptive methods, 80 million relied on traditional methods, and 190 million had an unmet need for family planning. Around 76% of women's family planning needs were met with modern methods. The most commonly used methods worldwide include male condoms, oral contraceptive pills, and IUDs. Long-acting methods account for 45.2%, short-acting methods for 46.1%, and traditional methods for 8.7%. The use of condoms, IUDs, and injectables has increased globally, while traditional methods such as rhythm and withdrawal have declined. Contraceptive use patterns vary by region.[8–10]

AIM OF STUDY-

The aim of this study is to evaluate the effectiveness of an information booklet on knowledge regarding selected temporary contraceptive methods among women in selected rural areas of Pune district. It assesses knowledge before and after the intervention to determine improvement.

Objective:

1. To assess the existing knowledge of women regarding selected temporary contraceptive methods before administration of an information booklet.
2. To evaluate the effectiveness of an information booklet on knowledge regarding selected temporary contraceptive methods among women.
3. To find the association between post-test knowledge scores and selected demographic variables of women.

RESEARCH METHODOLOGY

The present study adopted a quantitative research approach with a pre-experimental one-group pre-test post-test design to assess the effectiveness of an information booklet on knowledge regarding temporary contraceptive methods among women in rural Pune. The dependent variable was women's knowledge on temporary contraceptives, while the independent variable was the information booklet. The study setting was selected rural areas of Pune, and the target population consisted of women aged 18–45 years. The accessible population included women in the reproductive age group who were willing to participate during the data collection period. A sample of 100 women was selected using random sampling technique, with inclusion criteria of women aged 18–45 years, able to read English or Marathi, and exclusion of pregnant women or those with mental health limitations. Data collection tools included a two-part structured questionnaire: Section A on demographic variables (age, education, occupation, number of children, and contraceptive use) and Section B with 15 items assessing knowledge of temporary contraceptive methods. Content validity was established through expert review, and reliability tested using test-retest method with a correlation value of 0.9627. A pilot study on 10 samples confirmed feasibility. Data were collected after obtaining ethical clearance and consent, and analyzed using descriptive and inferential statistics including mean, standard deviation, and t-test.

RESULTS

Section I – Distribution of Subjects Based on Socioeconomic Background

The study included 100 women with varied demographic profiles. Most participants (40%) were in the age group of 36–40 years, followed by 26–35 years (25%), 41–45 years (18%), and 18–25 years (17%),

reflecting predominance of middle adulthood. In terms of education, the largest group had completed higher secondary (35%), followed by primary (21%), graduate level (17%), secondary (14%), and no formal schooling (10%), while only 3% were postgraduates. Occupation-wise, housewives (30%) formed the majority, with others including laborers (15%), government employees (14%), private sector workers (10%), farmers (10%), self-employed (9%), students (7%), and others (5%). Regarding parity, 35% had one child, 30% had none, 22% had two, and 13% had three children. On contraceptive use, 77% had never used any method, while 23% had. Awareness was highest for Copper-T (31%), followed by condoms (27%), oral pills (24%), emergency pills (13%), and contraceptive patch (5%), while none knew about injections or vaginal rings.

Section II – Assessment of Knowledge Regarding Temporary Contraceptive Methods

Table No. 1: Pre-test level of knowledge

N=100

Level of Knowledge (Pre-Test)	f	%	Mean	SD
POOR (0–5)	49	49.00	6.48	3.28
AVERAGE (6–10)	39	39.00		
GOOD (11–15)	9	9.00		
EXCELLENT (16–20)	3	3.00		

Table no.1 shows the pre-test results revealed that almost half of the participants (49%) had poor knowledge (scores 0–5), 39% had average knowledge (6–10), 9% had good knowledge (11–15), and only 3% had excellent knowledge (16–20). This indicates a general lack of adequate awareness before intervention, with knowledge clustering at the lower end of the scale. However, after administration of the information booklet, post-test scores showed marked improvement.

Table no. 2: Post-test level of Knowledge.

N= 100

Level of Knowledge (Post-Test)	f	%	Mean	SD
POOR (0–5)	0	0.00	16.43	2.20
AVERAGE (6–10)	1	1.00		
GOOD (11–15)	32	32.00		
EXCELLENT (16–20)	67	67.00		

Table no. 2 shows that A large majority (67%) scored excellent (16–20), while 32% scored good (11–15). Only 1% remained at an average level, and none scored poorly. The average post-test score was 16.43 with a standard deviation of 2.20, compared to a pre-test mean of 6.48 with SD 3.28. The results indicate that most women gained substantial knowledge after exposure to the booklet, with scores showing little variation, suggesting consistent effectiveness across participants.

Section III – Effectiveness of the Information Booklet

The effectiveness of the information booklet was tested by comparing pre-test and post-test scores using a paired t-test. Before intervention, the mean knowledge score was 6.48 (SD 3.28), while after intervention it rose significantly to 16.43 (SD 2.20). The obtained t-value was 22.36 at 99 degrees of freedom, with a p-value of 0.0001. Since $p < 0.05$, the results were statistically significant. This demonstrates that the information booklet had a strong positive effect on participants' knowledge about temporary contraceptive methods. The sharp increase in mean scores, along with reduction in score variability, highlights that the booklet not only enhanced knowledge levels but also ensured uniform understanding among participants. These findings affirm the role of structured educational material in bridging knowledge gaps and empowering women in reproductive health decision-making, particularly in rural settings where awareness of modern contraceptives remains limited.

Section IV – Association of Knowledge with Demographic Variables

Chi-square tests were conducted to determine associations between demographic variables and post-test knowledge levels. The analysis revealed no statistically significant associations. For age ($\chi^2 = 4.168$, $p = 0.900$), education ($\chi^2 = 10.830$, $p = 0.765$), occupation ($\chi^2 = 12.651$, $p = 0.920$), number of children ($\chi^2 = 3.213$, $p = 0.994$), prior contraceptive use ($\chi^2 = 3.870$, $p = 0.276$), and awareness of contraceptives ($\chi^2 = 9.121$, $p = 0.988$), all p-values were above 0.05. This indicates that improvements in knowledge were independent of demographic factors. In other words, the booklet was equally effective regardless of participants' age, education, occupation, family size, past contraceptive experience, or awareness level. This finding underscores the universal relevance and accessibility of the information booklet, making it a practical educational intervention for diverse rural populations in Pune district.

DISCUSSION

A pre-experimental study was conducted to assess the effectiveness of an informational booklet in improving knowledge regarding temporary contraceptive methods among women in selected rural areas of Pune district. Findings revealed a significant increase in knowledge post-intervention, highlighting the positive impact of the booklet. Pre-test scores indicated low baseline awareness, while post-test results showed marked improvement, with most participants demonstrating good to excellent understanding of the types, uses, and benefits of temporary contraceptives. This establishes the value of structured educational materials in enhancing reproductive health awareness and informed decision-making among rural women.

When compared with related studies, similar outcomes were observed. For example, Mrs. Juhi Esther Lodge's study in Lucknow assessed the effectiveness of a Structured Teaching Programme (STP) among 30 primigravida women in a hospital setting. Using the same pre-experimental design, her intervention involved direct teaching sessions. Although the method differed from the current study's self-learning information booklet, both showed significant improvements in knowledge levels. Juhi's study reported a mean score gain of 4 points, while the present study also demonstrated strong post-test knowledge gains, confirming that both interactive and self-directed educational approaches are effective.

Similarly, the study by Deva Pon Pushpam I. 2019 in Jammu evaluated knowledge and attitude among 100 married women using a descriptive design. Results showed that 25% had inadequate knowledge, 68% had moderate knowlege, and only 7% had adequate knowledge, though attitudes were largely positive.[10] Unlike this descriptive work, the Pune study employed an intervention, leading to substantial knowledge gains.

In conclusion, while the methodologies and target populations differed, all three studies underscore the importance of structured educational strategies in improving women's knowledge of temporary contraceptive methods. Collectively, they demonstrate that both understanding existing attitudes and implementing educational interventions are crucial for empowering women to make informed reproductive health choices.

CONCLUSION

The present pre-experimental study highlights the importance of structured educational interventions in enhancing women's awareness of temporary contraceptive methods in rural settings. Limited baseline knowledge regarding family planning methods continues to be a significant barrier to informed reproductive decision-making among rural women. The use of an information booklet proved to be a simple, acceptable, and effective strategy for addressing this gap.

The findings suggest that providing clear, concise, and culturally appropriate information can empower women with essential knowledge related to the types, use, benefits, and safety of temporary contraceptive methods. Improved awareness enables women to make informed choices about spacing and limiting pregnancies, thereby contributing to better maternal and child health outcomes. The effectiveness of the booklet across women with varying demographic backgrounds indicates its wide applicability and potential for large-scale use.

This study emphasizes the role of nurses and community health workers in disseminating reproductive health information through cost-effective educational materials. Incorporating information booklets into routine community health programs can strengthen family planning services and promote responsible reproductive behavior. Overall, the study supports the integration of structured health education tools as an essential component of rural reproductive health initiatives, contributing to women's empowerment, improved health literacy, and sustainable population health outcomes.

CONFLICT OF INTEREST:

We, researchers, understand that conflict of interest refers to situations in which financial or other personal considerations may compromise our judgment in evaluating, conducting, or reporting research. We hereby declare that we do not have any personal conflict of interest that may arise from our application and submission of our research proposal.

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