Research Article

A Pre-Experimental Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Preconception Care among Married Couples in Selected Areas of Pune City

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Abstract

Introduction: Preconception care is individualized care for people considering pregnancy. It reducing the morbidity and mortality for patient and fetus, increasing chances of conception when pregnancy is desired, and providing contraceptive counselling to help prevent unintended pregnancies. Preconception care is the provision of biomedical, behavioural, and social health interventions to women and couples before conception occurs. It improve their health status and reduce behaviours and individual and environmental factors that contribute to poor maternal and child health outcomes. It involves a comprehensive assessment of medical, social and lifestyle factors that may affect a woman's health during pregnancy, as well child.

Aim of the study: To assess the effectiveness of an information booklet in improving knowledge regarding preconception care among married couples in selected areas of Pune City.

Methodology: Researcher used a quantitative research approach for study and employed a pre-experimental one group pre-test and post-test research design Study was conducted in selected areas of Pune city. A total of 60 participants were included in the sample and they were selected using a non-probability purposive sampling technique.

Result: The study on 60 adolescents in selected areas of Pune city. Pre-test results showed 72% had poor knowledge and 23% had good knowledge, with a mean score was 7.32 with (SD=2.76). Post-test findings revealed significant improvement, with 43% achieving excellent knowledge and a mean score was 13.48 with (SD=2.86). A paired t-test indicated a statistically significant increase in knowledge after the intervention ($t = 13.3589$, $p =< 0.00001$). Chi-square analysis showed significant association between pre-test knowledge levels and Type of family, confirming that the booklet effectively improved knowledge regarding preconception care.

Conclusion: Study revealed most participants had poor knowledge regarding preconception care. However, after the information booklet intervention, majority demonstrated excellent knowledge, confirming effectiveness of method. Significant association was found only in type of family.

Keywords: Preconception care, married couples, information booklet, knowledge, pre-experimental study.

Introduction

Preconception care and improving health before, during, and after pregnancy. Preconception care is defined "The provision of biomedical, behavioural, and social health interventions to women and couples before conception occurs. It aims to improve their health status and reduce behaviours and individual and environmental factors that contribute to poor maternal and child health outcomes. Its ultimate aim is to improve maternal and child health. Itnvolves, as a first step, a comprehensive assessment of those medical, social and lifestyle factors that may affect a woman's health during pregnancy, as well as that of her child[1]

The incidence and prevalence of obesity, hypertension, diabetes, and other chronic conditions are increasing in the United States. These conditions negatively impact pregnancy-related and infant mortality, with their impact exacerbated among racial and ethnic minority groups. Preconception care offers family physicians and their patients an opportunity to discuss risk factors to minimize them before pregnancy[2].

An individual's lifestyle factors can directly impact a partner's pregnancy. These factors are including smoking, which exposes expectant individual to second hand smoke and potentially leads to negative effects such as low birth weight, intrauterine growth restriction, preterm birth, and an increased risk of sudden infant death syndrome. An individual with an untreated or uncontrolled STI, including HIV, could put their pregnancy partner and the fetus at risk for pregnancy complications and further morbidity[3].

The pre-conception period is an unmissable opportunity to introduce a set of biological, social and psychological interventions before pregnancy, to enhance the couples health and improve maternal and fetal outcomes. Global pre-conception initiatives and the 2030 Saudi national vision to promote maternal, fetal health and safety, various barriers still exist[4].

There has been growing recognition significance of preconception care in preventing neonatal ,birth disorders. Research shown that individuals' health,lifestyle choices before conception can significantly influence health outcomes of their offspring[5].

Need of Study

In India, awareness and utilization of preconception care services are still low among reproductive-age couples. A study published in the Indian Journal of Community Medicine (2022) reported that only about 32% of women had adequate knowledge regarding preconception care practices, including nutritional supplementation, health screening, and lifestyle modification before pregnancy. The study also highlighted that most couples seek medical advice only after pregnancy is confirmed, which limits opportunities for preventive care[6].

Studies conducted in Maharashtra have also reported limited awareness regarding preconception health practices. A community-based study conducted among married women in urban Maharashtra found that only 27% of participants had adequate awareness about preconception care, including folic acid supplementation, vaccination, and health check-ups before pregnancy. The findings highlight the need for educational interventions to improve knowledge among couples planning pregnancy[7].

The results showed that about 50% of pregnancies were planned and women had limited knowledge regarding preconception care practices, although some were aware of appropriate age for pregnancy and harmful effects of tobacco and alcohol. However, most women did not practice or access preconception care services. The study concluded that knowledge and utilization of preconception care among women were inadequate, highlighting the need for increased awareness and health education programs[8].

In community settings, couples often seek medical care only after conception, which limits opportunities for preventive measures. As a nursing student, the researcher observed that many couples have inadequate awareness regarding preconception care and its benefits. Providing appropriate health education can help improve their knowledge and encourage healthy practices before pregnancy. The researcher felt the need to conduct a pre-experimental study to assess the effectiveness of an information booklet on knowledge regarding preconception care among married couples in selected areas of Pune city.

Aim of Study

"A pre-experimental study to assess the effectiveness of information booklet on knowledge regarding Preconception care among married couples in selected areas of Pune city".

Research Methodology

Research Approach: A quantitative research approach was adopted to assess the effectiveness of an information booklet on knowledge regarding preconception care among married couples in selected areas of Pune City.

Research Type: Pre-experimental interventional research study.

Research Design: A pre-experimental one-group pre-test–post-test research design was employed.

Research Setting: The study was conducted in selected areas of Pune City, Maharashtra.

Study Population: Married couples residing in selected areas of Pune City.

Sample Size: A total of 60 participants were included in the study.

Sampling Technique: A non-probability purposive sampling technique was used to select participants.

Objectives of the Study

1. To assess the level of knowledge regarding preconception care among married couples before administration of the information booklet.
2. To assess the level of knowledge regarding preconception care among married couples after administration of the information booklet.
3. To determine the effectiveness of the information booklet on knowledge regarding preconception care among married couples.
4. To find the association between knowledge scores and selected demographic variables.
5. To assess the level of knowledge regarding Preconception care among married couples before administration of Information booklet.
6. To assess the level of knowledge regarding Preconception care among married couples after administration of Information booklet.
7. To assess the effectiveness of information booklet on knowledge regarding Preconception care among married couples in selected areas of Pune city.
8. To find the association between the knowledge of married couples and selected demographic variables

Description of the Research Tool

A structured questionnaire was developed through literature review, expert consultation, and researcher experience. The tool consisted of two sections:

Section I – Demographic Variables: Included demographic information regarding the participants.

Section II – Structured Knowledge Questionnaire: Assessed knowledge regarding preconception care among married couples.

Validity: Content validity of the research tool was established through expert evaluation by faculty members from Bharati Vidyapeeth College of Nursing, Pune.

Reliability: Reliability was assessed using the test–retest method. Karl Pearson's correlation coefficient was calculated, and the obtained value of r = 0.98 indicated high reliability**.**

Pilot Study: A pilot study was conducted among six participants to assess the feasibility and clarity of the research tool.

Data Collection Procedure: Necessary permission was obtained from the concerned authorities. Written informed consent was obtained from participants, and confidentiality was maintained. A pre-test was conducted using the structured knowledge questionnaire, followed by administration of the information booklet regarding preconception care. A post-test was subsequently conducted to evaluate improvement in knowledge.

Statistical Analysis: Descriptive and inferential statistical methods were used to analyse knowledge scores, evaluate the effectiveness of the intervention, and examine associations with selected demographic variables.

Results

The data collected from 60 participants were analysed using descriptive and inferential statistics to assess the effectiveness of an information booklet on knowledge regarding preconception care among married couples in selected areas of Pune City.

Section I: Demographic Characteristics

The majority of participants (67%) belonged to the 23–25 years age group, 72% were female, and 48% had secondary education. Regarding family type, 53% belonged to joint families. Most participants (52%) were employed in private jobs, and 67% reported a monthly family income below ₹20,000. Regarding duration of marriage, 45% had been married for less than one year and another 45% for 1–3 years. Additionally, 70% had no previous knowledge regarding preconception care, and 70% had no children.

Section II: Comparison of Pre-Test and Post-Test Knowledge Levels

Table 1: Distribution of Knowledge Levels Before and After Administration of the Information Booklet (N = 60)

Knowledge level	Pre-test f (%)	Post-test f (%)
Poor (0–7)	43 (72%)	3 (5%)
Average (8–14)	14 (23%)	31 (52%)
Good (15–20)	3 (5%)	26 (43%)
Total	60 (100%)	60 (100%)

Interpretation: Before the intervention, 72% of participants had poor knowledge, 23% had average knowledge, and only 5% had good knowledge. After administration of the information booklet, poor knowledge decreased to 5%, average knowledge increased to 52%, and good knowledge increased to 43%, indicating considerable improvement in knowledge regarding preconception care.

Section III: Effectiveness of the Information Booklet

Table 2: Comparison of Pre-Test and Post-Test Mean Knowledge Scores (N = 60)

Assessment	Mean	SD	df	Paired t-value	p-value
Pre-test	7.32	2.76	59	13.3589	0.00001

Post-test	13.48	2.86	—	—	—

Interpretation: The mean knowledge score increased from 7.32 ± 2.76 in the pre-test to 13.48 ± 2.86 in the post-test, with a mean difference of 6.16 points. The calculated paired t-value was 13.3589 (df = 59, reported p = 0.00001), indicating a statistically significant improvement in knowledge after the intervention.
Mean knowledge scores before and after administration of the information booklet

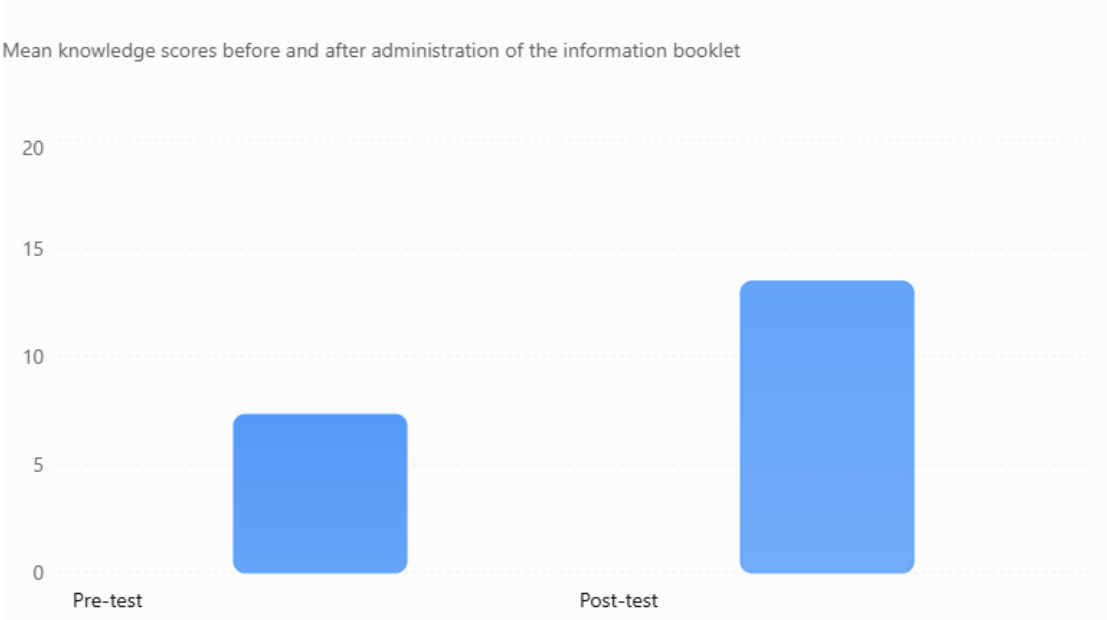


Figure 1: Comparison of Mean Pre-Test and Post-Test Knowledge Scores

Interpretation: Figure 1 illustrates an increase in the mean knowledge score from 7.32 before administration of the information booklet to 13.48 after the intervention, demonstrating an improvement of 6.16 points.
Section IV: Association of Pre-Test Knowledge with Demographic Variables
The findings revealed a statistically significant association between pre-test knowledge scores and type of family. The supplied results did not provide the corresponding chi-square value or p-value for this association.
Overall Interpretation
The results indicate that administration of the information booklet was associated with a statistically significant improvement in knowledge regarding preconception care among married couples in selected areas of Pune City. The findings support the effectiveness of the information booklet as an educational intervention.

Discussion

The present study was conducted to assess the effectiveness of an information booklet on knowledge regarding preconception care among married couples in selected areas of Pune City. The findings revealed that the participants had inadequate knowledge before the intervention, as indicated by the mean pre-test knowledge score of 7.32 (SD = 2.76). After the administration of the information booklet, a considerable improvement was observed in the knowledge level of the participants. The mean post-test knowledge score increased to 13.48 (SD = 2.86), demonstrating a substantial gain in knowledge regarding preconception care. The paired t-test value was 13.3589 with 59 degrees of freedom, and the p-value was 0.00001, indicating that the improvement in knowledge was highly statistically significant. These findings confirm that the information booklet was effective in enhancing the knowledge of married couples regarding preconception care.
The findings of the present study are supported by a cross-sectional descriptive study conducted by **Ghosh and Nandi (2023)** among 95 married couples in a rural community of Paschim Medinipur, West Bengal. Their study assessed the knowledge and practices related to preconception care and found that 74.54% of the participants had average knowledge, while only 24.93% demonstrated average preconception care practices. The mean knowledge score was 10.06 ± 3.80 and the mean practice score was 4.95 ± 3.48. The researchers also reported

a strong positive correlation between knowledge and practice (r = 0.80), suggesting that increased knowledge contributes to better preconception care practices.

Both studies highlight the importance of improving awareness and knowledge regarding preconception care among married couples. While the study by Ghosh and Nandi focused on assessing existing knowledge and practices, the present study evaluated an educational intervention and demonstrated its effectiveness. Therefore, providing structured educational materials such as information booklets can be an effective strategy for promoting preconception health and improving reproductive outcomes among married couples.

Conclusion

The present study was conducted to assess the effectiveness of an information booklet on knowledge regarding preconception care among married couples in selected areas of Pune City. A pre-experimental one-group pre-test post-test design was adopted, and 60 participants were selected using a non-probability purposive sampling technique.

Findings demonstrated a significant improvement in knowledge regarding preconception care following the administration of the information booklet. In pre-test, the majority of participants (72%) had average knowledge, while only 5% had good knowledge. After intervention, knowledge levels improved considerably, with 43% of participants achieving good knowledge and 52% maintaining average knowledge. Only a small percentage remained in the poor knowledge category.

The mean knowledge score increased from 7.32 in pre-test to 13.48 in post-test, indicating substantial knowledge gain. The paired t-test showed a highly significant difference between pre-test and post-test scores ($t = 13.3589$, $p = 0.00001$), confirming the effectiveness of the information booklet as an educational intervention.

The study also found a significant association between post-test knowledge scores and type of family, while other demographic variables showed no significant association. Overall, study concludes that information booklets are an effective and economical method for improving knowledge regarding preconception care among married couples and can be utilized in community health education programs.

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..

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