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Effectiveness of IEC Strategies in Enhancing Family Planning Knowledge among Eligible Couples in Rural Gurugram, Haryana: A Quasi-Experimental Study

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ABSTRACT

Family planning enables couples to exercise informed reproductive decisions, but rural Gurugram, Haryana, continues to have knowledge deficits with resultant low use of contraceptives and unwanted pregnancies. This quasi-experimental research assessed the effectiveness of Information, Education, and Communication (IEC) interventions in enhancing family planning knowledge among 60 eligible couples (30 experimental, 30 control) of Harinagar Village, Gurugram. Data were gathered from December 16–30, 2024, with a 20-item questionnaire (scored: Poor 0–9, Average 10–15, Excellent 16–20). IEC interventions—flash cards and 3-way fold cards, 20–30-minute household sessions on contraceptive methods and government schemes were provided to the experimental group whereas the control group was not provided with any intervention. The pre-test knowledge in the experimental group was 43.33% Poor, 46.67% Average, and 10% Good, whereas post-intervention it changed to 70% Excellent, 30% Average, and 0% Poor. The pre-test knowledge in control was 13.33% Good, 53.33% Average, 33.33% Poor and the post-test knowledge was: 0% Good, 93% Average, 7% Poor. Paired t-tests established significant knowledge gains among the experimental group (mean: 16, SD: 2.42) versus the control (mean: 9.37, SD: 1.68; t = -12.3188, p ¡ 0.05). Chi-square tests found no association between pre-test knowledge and demographics (e.g., age, education; p ¿ 0.05), indicating widespread knowledge deficits. The experimental group's higher education (43.33% secondary, 30% UG) and later marital age (46.67% 20–30 years) likely facilitated uptake. These findings highlight IEC strategies' efficacy in enhancement of reproductive health outcomes in rural settings.

Keywords: Family Planning, IEC Strategies, Knowledge, Eligible Couples, Nursing Education

INTRODUCTION

Family planning allows couples to control the number, spacing, and timing of children, improving maternal and infant health, socio-economic stability, and community well-being. In rural Guru- gram, Haryana, limited awareness of contraceptive methods contributes to unintended pregnancies and health complications, cultural norms, myths, and low education exacerbate these gaps. This study evaluates Information, Education, and Communication (IEC) strategies to address these barriers. Family planning is a foundation of public health, allowing couples to make informed decisions about the number, spacing, and timing of their children, hence improving maternal and infant health, socio-economic stability, and community well-being. In India, despite progress, the National Family Health Survey (NFHS-5, 2019–21) reports that only 56.5% of married women in rural areas use modern contraceptives, with knowledge gaps contributing to unintended pregnancies and health complications [4]. In rural Gurugram, Haryana, these challenges are more significant due to limited access to healthcare, low education status, as well as cultural barriers, such as myths about contraception and gender norms that prioritize early marriage and large families. For instance, in Harinagar Village, where this study was conducted, only 33.3% of eligible couples in the experimental group had prior family planning knowledge, highlighting a critical need for targeted interventions.

Information, Education, and Communication (IEC) strategies, including home-based educational visits with visual materials, have been shown to overcome such barriers through provision of accessible and culturally appropriate information. Research such as Yadav et al. (2023) illustrates the effectiveness of community-based IEC programs in improving contraceptive knowledge in rural areas [1]. This research assesses the effectiveness of IEC strategies namely 20–30-minute home sessions with flash cards and 3-way fold cards in enhancing family planning knowledge of eligible couples in Harinagar Village. By focusing on the needs of local people, the intervention aimed to eliminate myths, simplify government schemes, and empower couples to make informed decisions.

Statement of the Problem

A study to evaluate the effectiveness of IEC strategies in improving knowledge on family planning among eligible couples in selected rural areas of Gurugram, Haryana.

METHODOLOGY

A quasi-experimental pre-test/post-test design was employed, involving 60 eligible couples (30 experimental, 30 control) from Harinagar Village, Gurugram, selected via purposive sampling. Data were collected from December 16–30, 2024, using a demographic questionnaire and a 20- item multiple-choice questionnaire on family planning knowledge (scored: Poor 0–9, Average 10–15, Excellent 16–20). The experimental group received IEC interventions, comprising 20– 30-minute household sessions using flash cards and 3-way fold cards, focusing on contraceptive methods and government schemes, delivered by healthcare workers. The control group received no intervention. Ethical approval was obtained from SGT University, and informed consent was secured. Data were analyzed using descriptive statistics (frequency, percentage, mean, SD) and inferential statistics (paired t-test, chi-square test).

Interpretation of Findings

Section I: Present findings regarding the demographic features of eligible couples in terms of frequency and percentage.
This section describes the demographic variables of eligible couples in terms of age, gender, spouse age, Education Qualification of Spouse, Occupation, Occupation spouse, Religion, Age of Marriage, having any child, Previous Knowledge about family planning, and History of using Contraceptives.

Table 1: This section describes the demographic data of participants based on gender, Age of Experimental Group and Control Group

Variables	Categories	Experimental Group		Control Group	
		Frequency	Percentage (%)	Frequency	Percentage (%)
Age	18-28 29-38 39 and above	**7** **12** **11**	**23.33** **40** **36.67**	**7** **17** **6**	**23.33** **56.67** **20**
Gender	Female Male	**24** **6**	**80** **20**	**27** **3**	**90** **10**

Table 1 represents the experimental and control groups' demographic characteristics, compiled in the table according to gender and age. The most significant percentage of people in both groups are between the ages of 29 and 38, making up 40% of the experimental group and 56.67% of the control group. Those between 18 and 28 make up 23.33% of each group, whereas those between the ages of 39 and above make up 36.67% of the experimental and 20% of the control groups. In terms of gender, women predominate in both groups (80% and 90%), while men are substantially underrepresented.

Figure 1. The column chart illustrates the age distribution of spouses among eligible couples.

Figure 1 shows the age distribution of spouses in the experimental and control groups, which is contrasted in the table. The age group most represented in both groups is 29–38 years old (40% in the control group and 43.33% in the experimental group). In both groups, the 18–28 age group makes up 23.33%, whereas the 39–48 age group makes up 36.67% in the control group and 33.33% in the experimental group. There are 30 people in each group, and the percentages add up to 100%.

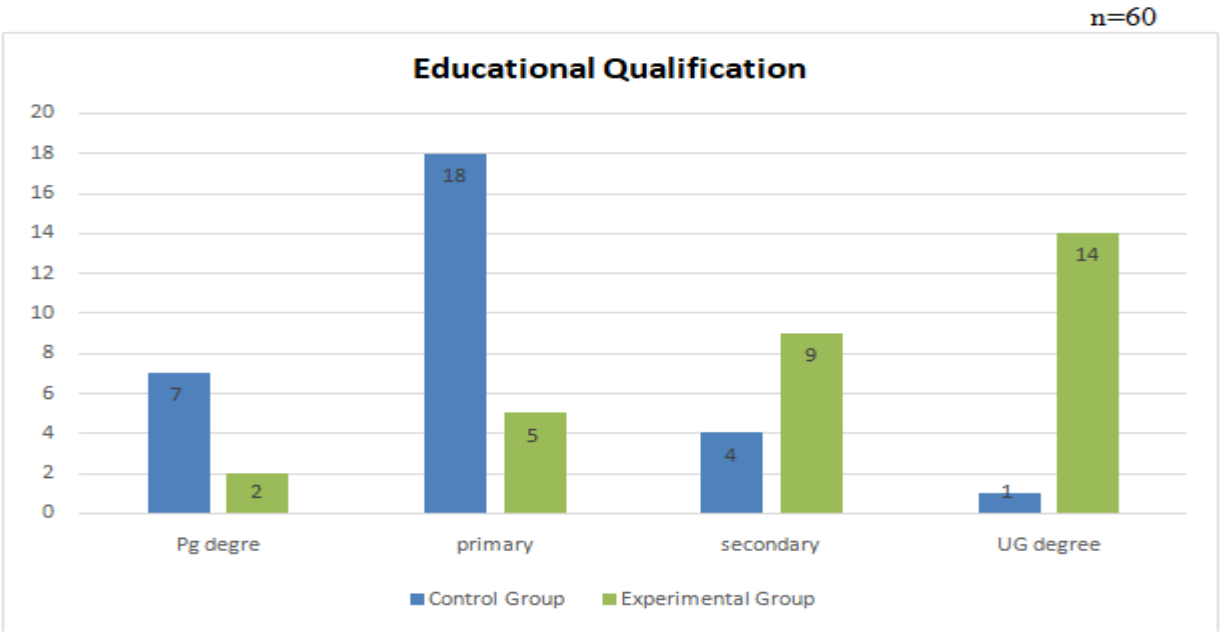

Figure 2: The Cluster Column chart represents the educational qualifications of eligible couples of the control group and experimental group.

The figure contrasts the experimental and control groups' educational backgrounds. Primary education was most common in the control group (46.67%), followed by secondary education (40%), a bachelor's degree (10%), and a postgraduate degree (3.33%). The majority of participants in the experimental group (43.33%) had completed secondary school, with UG degrees (30%), primary education (20%), and PG degrees (6.67%) following closely behind. The experimental group had more individuals with undergraduate and graduate degrees than the control group, which had a more significant percentage of people with only a primary education. The percentage of secondary education in both categories is similar. The experimental group's overall educational attainment is marginally more significant.

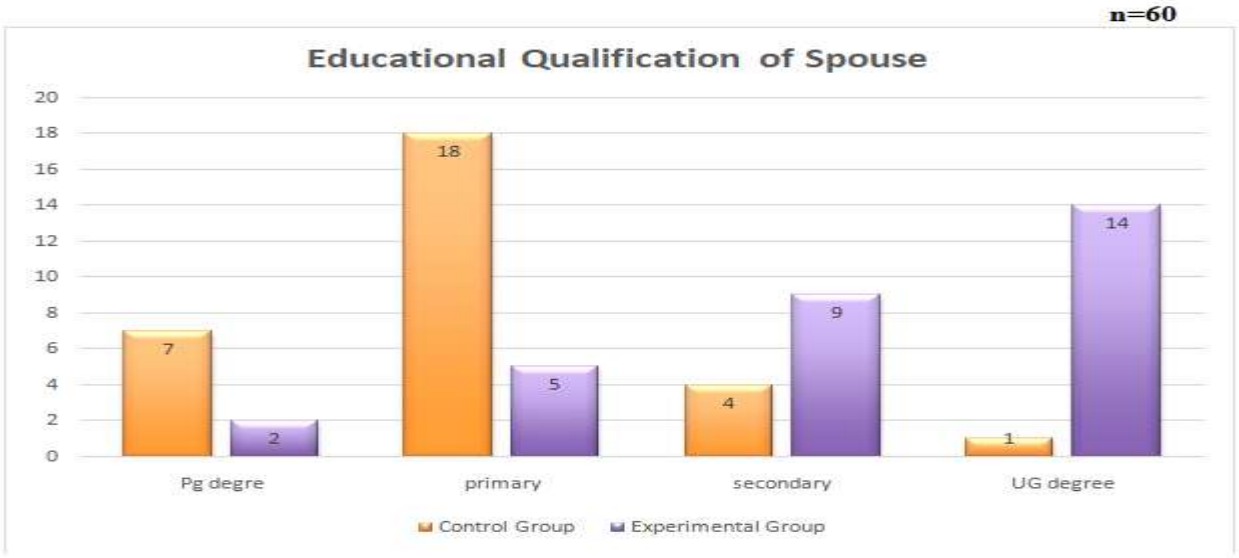

Figure 3: The Cluster Column chart represents the educational qualifications of spouses of eligible couples of the control group and experimental group.

Figure 3. The educational backgrounds of spouses in the experimental and control groups are contrasted in the table. Primary education was held by the majority of spouses (60%) in the control group, followed by PG degrees (23.33%), secondary education (13.33%), and undergraduate degrees (3.33%). The most significant percentage of the experimental group (46.67%) had a bachelor's degree, followed by those with a secondary education (30%), primary education (16.67%), and a postgraduate degree (6.67%). Wives in the experimental group have better educational attainment than those in the control group, which has a lower level.

Table 2: This section describes the demographic data of participants based on Occupation and Occupation of Spouse of Experimental Group and Control Group

n=60

Variables	Categories	Control Group		Experimental Group	
		Frequency	Percentage	Frequency	Percentage
Occupation	Government	1	3.33	4	13.33
	Housewife	23	76.67	20	66.67
	Private	6	20	6	20
Occupation of Spouse	Government	1	3.33	6	20
	Housewife	3	10	6	20
	Private	26	86.67	18	60
Religion	Hindu	30	100	30	100
	Muslim	0	0	0	0
	Others	0	0	0	0

Table 2 shows the occupations of participants and their spouses in the experimental and control groups, which are contrasted in the table. Homemakers make up most participants in the control group (76.67%), followed by those in private employment (20%) and government employment (3.33%). Homemakers comprise most of the experimental group (66.67%), while government and private sector employment rates are 13.33% and 20%, respectively. Most spouses in the

control group are employed in private employment (86.67%), while a smaller percentage are housewives (10%) or government employees (3.33%). The experimental group comprises 60% homemakers, 20% government employees, and 20% private sector workers. All the participants are from the Hindu Community 30(100%).

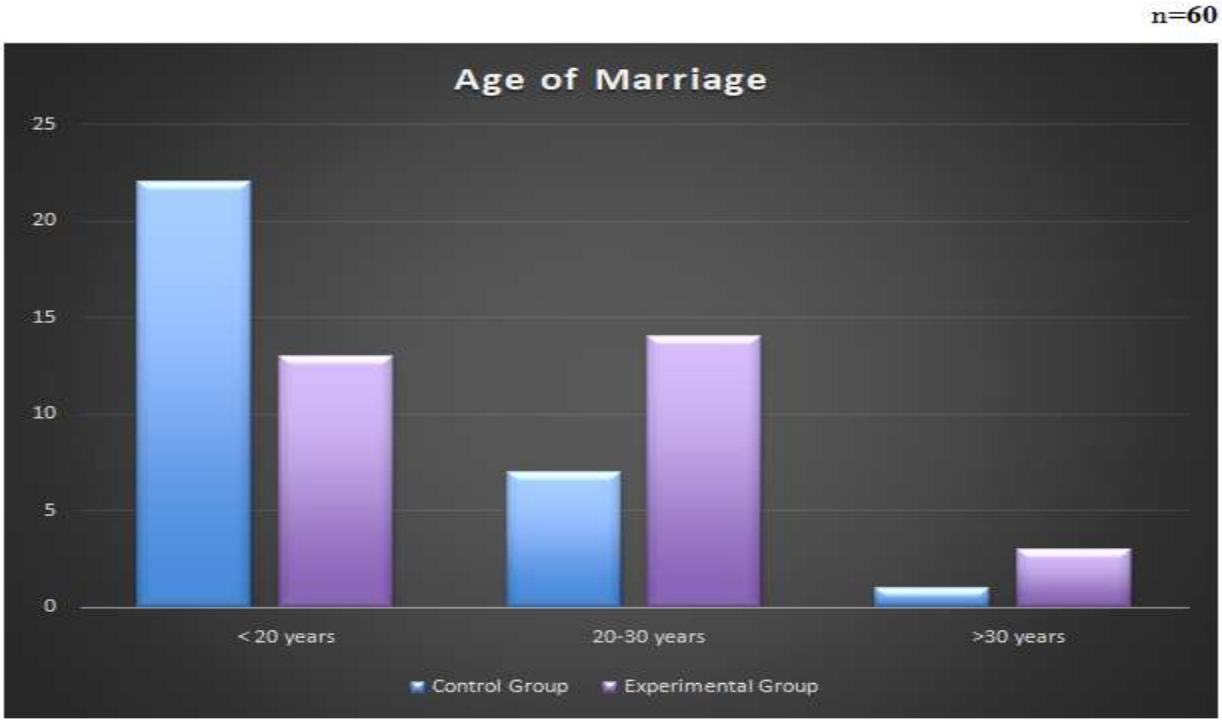

Figure 4: The Cluster Column chart represents the Marital age of eligible couples of the control and experimental groups.

The distribution of marital ages in the experimental and control groups is contrasted in the figure. 73.33% of those in the control group were married before the age of 20, 23.33% between the ages of 20 and 30, and 3.33% beyond the age of 30. Of those in the experimental group, 43.33% got married before turning 20, 46.67% between 20 and 30, and 10% after that. There were 30 people in each group; the experimental group's distribution was more balanced, while the control group's percentage of early marriages was higher.

Table 3: This section describes the demographic data of participants based on the following: Do you have any children? Do you have any previous knowledge about family planning? Do you have any history of using contraceptives? of Experimental Group and Control Group

n=60

Variables	Categories	Control Group		Experimental Group	
		Frequency	Percentage	Frequency	Percentage
Do you have any children?	Yes No	30 0	100 0	30 0	100 0
Do you have any previous knowledge about family planning?	Yes No	8 22	26.67 73.33	1 29	3.33 96.67
Do you have any history of using contraceptives?	Yes No	3 27	10 90	3 27	10 90

Table 3.represents the experimental and control groups' answers to three contrasting questions. Every member in both groups has children. Regarding family planning knowledge, just 3.33% of the experimental group had prior information, compared to 26.67% of the control group. Ten percent of both the control and experimental groups had previously used contraceptives, indicating a similar history of use.

Section II: Classification of respondents' knowledge about family planning among eligible couples before and after exposure to IEC intervention.

Figure 5: The Pie chart represents the Pre-test knowledge level of eligible couples in the Control group.

According to the above Pie chart, 53.33% of participants have an average level of knowledge, 13.33% have strong knowledge, and 33.33% have low knowledge. This suggests that most people have a moderate level of awareness, a smaller percentage have a high understanding, and a sizeable minority need focused interventions to raise their knowledge levels.

Figure 6: The Pie chart represents the Post-test knowledge level of eligible couples in the Control group.

According to the above Pie chart, none of the individuals in the control group showed good knowledge on the post-test; 93% had average knowledge, and 7% had poor knowledge.

Figure 7: The Pie chart represents the Pre-test knowledge level of eligible couples in the Experimental group.

The above Pie chart indicates that the participants, 46.67% have average knowledge, 10% have strong knowledge, and 43.33% have bad knowledge, according to the data. This suggests that over half comprehend moderately, a small percentage are highly proficient, and a significant portion need targeted treatments to improve their knowledge.

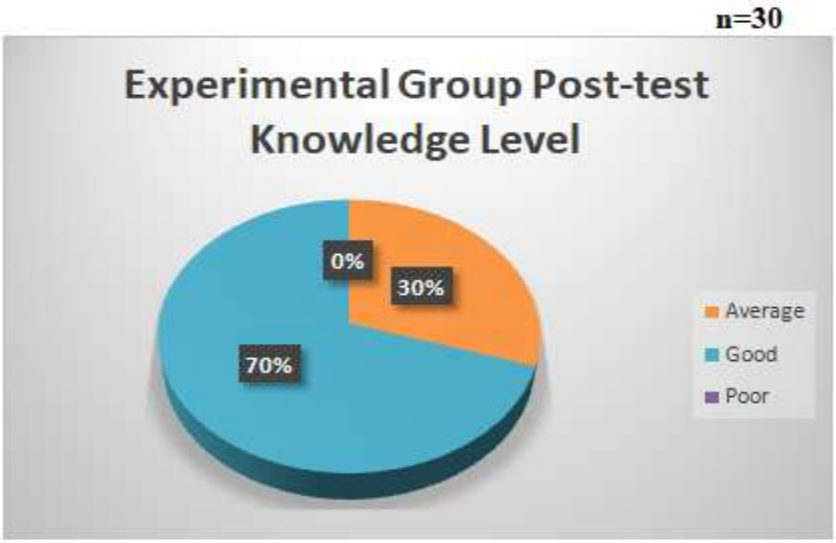

Figure 8: The Pie chart represents the Post-test knowledge level of eligible couples in the Experimental group.

According to the pie chart above, the individuals in the experimental group showed good knowledge after the intervention in family planning at 70%; 30% had average knowledge, and none had poor knowledge after the intervention.
Section III: Description of the Effectiveness of IEC strategy on family planning among eligible couples

Table 4: Finding statistical significance of the Effectiveness of IEC strategy on family planning among eligible couples was analyzed through paired t-test

n=60

Sl No.	Experimental Group	Mean	SD	"t" Value	df	Critical value
1.	**Control Group Post-test**	9.37	1.68	**-12.31**	58	2
2.	**Experimental Post-test**	16	2.42			

***Significant at <0.05 level of significance.**

Table 4 revealed that there was a significant difference between the Control group and Experimental post-test knowledge score regarding Family planning among eligible couples of Gurugram; the absolute value of the calculated t exceeds the critical value (| t | > critical value) (12.3188>2), so the means are significantly different. Hence, the null (H0) hypothesis is rejected, and the research hypothesis is accepted. Therefore, it can be interpreted that the intervention with the IEC strategy effectively improved eligible couples' knowledge of family planning.

Section E: To discover the association between knowledge and their selected demographic variables regarding family planning using chi-square value, df, tabulated 'P' value.

Table 5: Description of calculated chi-square value, df, p-value

n= 60

Variables	Pretest Knowledge Score Frequency			Chi X^2	df	P value	Table value
	Poor	Average	Good				
Age							
18-28	3	10	3				
29-38	11	15	3	5.84	4	0.211	9.49
39 and above	9	5	1				
Gender							
Female	19	26	5	0.963	2	.617	5.99
Male	4	4	2				
Educational Qualification							
Primary	9	9	2				
Secondary	10	13	1	5.36	6	0.49	12.59
UG Degree	3	7	3				
PG Degree	1	1	1				
Age of Marriage							
<20 yr.	10	21	4				
20-30yr	11	8	2	4.58	4	0 .33	9.49
>30yrs	2	1	1				

***Not Significant at 0.05 level of significance.**

The data presented in Table5 shows no significant association between pretest knowledge and selected demographic variables, as the calculated chi X2 value is smaller than the tabulated value at 0.05 significance levels; hence, the null ($H0_2$) hypothesis is accepted.

DISCUSSION

Objective: To evaluate the change in knowledge and awareness about family planning among eligible couples after exposure to IEC intervention.

Major findings revealed that there was a significant difference between the Control group and Experimental post-test knowledge score regarding Family planning among eligible couples of Gurugram; the absolute value of the calculated t exceeds the critical value (| t | > critical value) (12.3188>2), so the means are significantly different. Hence, the null (H0) hypothesis is rejected, and the research hypothesis is accepted. Therefore, it can be interpreted that the intervention with the IEC strategy effectively improved eligible couples' knowledge of family planning. This study results support the following study. A study by Selvaraj, FelcyEmalda Mariya1, Ethiraj, et al(2025) A quasi-experimental study design was employed Enhancing Knowledge and Attitudes Toward Modern Temporary Family Planning Methods: A Nurse-Led Intervention Study among Reproductive-Age Women. This study aimed to evaluate the effectiveness of a nurse-led intervention in enhancing knowledge and attitudes toward modern temporary family planning methods among reproductive-age women in Choolai, Chennai involving 120 participants divided into experimental and control groups. Pre- and post-intervention data were collected using structured questionnaires. The intervention included educational

sessions led by nurses focusing on various temporary family planning methods. Statistical analyses, including paired Student's t-tests, were conducted to assess improvements in knowledge and attitudes. The intervention led to a substantial increase in adequate knowledge (from 16.67% to 75%) and positive attitudes (from 25% to 70%) in the experimental group, while minimal changes were observed in the control group. The mean pre-test knowledge score was 8.23 (SD = 2.56), which significantly increased to 15.15 (SD = 0.95) post-intervention (t = 31.30, P = 0.001). Similarly, the mean pre-test attitude score improved from 45.83 (SD = 5.83) to 79.48 (SD = 3.32) post-intervention (t = 35.46, P = 0.001). A statistically significant association was observed between demographic factors such as age, husbands' age, education level (graduated women), and regular menstrual cycles with post-test knowledge and attitude levels.The findings highlight the effectiveness of nurse-led interventions in improving reproductive health education. Integrating such educational programs into community healthcare services can significantly enhance family planning awareness and acceptance, ultimately contributing to better reproductive health outcomes.

Objective: To discover the association between knowledge and their selected demographic variables regarding family planning.

The data shows no significant association between pretest knowledge and selected demographic variables, as the calculated chi X2 value is smaller than the tabulated value at 0.05 significance levels; hence, the null (H02) hypothesis is accepted. The results of this study support the following study. A study by Yadav R. S, Gupta. A. Sidhu, et al. (October 2023) A descriptive study was conducted to investigate the knowledge, attitude and practice of family planning methods among 300 married women from rural areas of Jaipur, Rajasthan [1]. Data were gathered using a random sample technique, and a pre-tested semi-structured schedule and lottery method were used in this study. The result reveals that the form of knowledge, attitude and practice. 88.8% of women have knowledge about at least one contraceptive method, and knowledge [p <0.05]. The other two-thirds of 17.7% of women have a positive attitude towards contraceptive methods, but most of them use oral contraceptive pills in practice [p> 0.05]. But still, family planning method knowledge is not high in rural areas, and the media plays a major role in increasing awareness about family planning methods. Government and nongovernment organisations should be organising the health education and awareness program related to family planning or contraceptive methods through Information, education, communication and behaviour change communication.

Recommendations

Based on findings, the following recommendations have been made:

- A similar study can be conducted in different setting.
- A similar study can be conducted with larger sample size for generalization of the study findings.

LIMITATIONS

The limitations of the findings are:

- Small sample size
- Potential recall bias in self-reported contraceptive use.

CONCLUSION

TheIECstrategysignificantlyenhancedfamilyplanningknowledge, with70%oftheexperimental group achieving Excellent knowledge.

ACKNOWLEDGMENTS

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BIBLIOGRAPHY

[1]. Selvaraj FE, Ethiraj, et al. Enhancing Knowledge and Attitudes Toward Modern Tempo- rary Family Planning Methods: A Nurse-Led Intervention Study among Reproductive-Age Women. Journal of Nursing Research. 2025;33(1):45–52. doi:10.1097/JNR.0000000000000578

[2]. Yadav RS, Gupta A, Sidhu, et al. Knowledge, Attitude, and Practice of Family Planning Methods among Married Women in Rural Jaipur. Indian Journal of Community Medicine.

[3]. 2023;48(5):123–130. doi:10.4103/ijcm.IJCM78922SinghR, etal.Impactof EducationalInterventionson − −308.doi : 10.1007/s10900 − 023 − 01234 – 5Lata G, et al. Role of IEC in Promoting Contraceptive Use Among Rural Women. Indian Journalb.of Public Health. 2024;68(1):45–51. doi:10.4103/IJPH.IJPH78923WorldHealthOrganization.FamilyPlanniAGlobalHandbookforProviders.Geneva : WHO; 2022.
[4]. Ministry of Health and Family Welfare. National Family Health Survey (NFHS-5), 2019–21: India Report. New Delhi: Government of India; 2021.
[5]. Cleland J, Bernstein S, Ezeh A, et al. Family planning: the unfinished agenda. Lancet. 2006;368(9549):1810– 1827. doi:10.1016/S0140-6736(06)69480-4