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A medical-surgical perspective on assessing the effectiveness of a health education programmed on knowledge regarding family planning in Jaipur Slums

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Abstract

Background: Family planning is crucial for ensuring maternal and child health; however, knowledge and utilization remain low in urban slum populations due to sociocultural and economic barriers. This study was conducted to evaluate the effectiveness of a structured health education program in improving awareness about family planning methods among slum residents in Jaipur, India.

Objectives: To assess the impact of a health education intervention on the knowledge of family planning methods among individuals in selected urban slums.

Methods: A pre-experimental one-group pre-test and post-test design was used. A total of 100 participants from selected slum areas of Jaipur were enrolled using purposive sampling. A structured questionnaire assessed knowledge levels before and after the health education programmed. Data were analyzed using descriptive and inferential statistics.

Results: The majority of participants were female, married, and from lower socioeconomic backgrounds. Pre-test results showed limited knowledge of contraceptive options. After the educational intervention, a significant increase in knowledge was observed, particularly regarding hormonal methods, spacing techniques, and permanent solutions. The mean post-test scores were statistically higher than pre-test scores ($p<0.05$), indicating the program's effectiveness.

Conclusion: The study highlights the positive impact of targeted health education on improving awareness of family planning in underserved urban slum populations. Such interventions are crucial to empowering individuals, enhancing reproductive autonomy, and achieving broader public health goals.

Keywords: Family Planning; Health Education; Contraceptives; Slum Population; Jaipur; Reproductive Health

1. Introduction

Family planning refers to strategies that allow individuals or couples to anticipate and attain their desired number of children and the spacing and timing of their births. It includes a range of contraceptive methods—hormonal (pills, injectables, implants), barrier (condoms, diaphragms), natural (rhythm method), and permanent methods (sterilization) [1]. These options empower individuals—particularly women—with reproductive autonomy and contribute significantly to maternal and child health [2].

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India, the second most populous country in the world, is projected to surpass China by 2030 [3]. Despite considerable progress in family welfare programs, the country continues to face high fertility rates, particularly in urban slums and rural areas [4]. Sociocultural norms, poverty, lack of education, and poor access to reproductive health services exacerbate this issue [5]. Women from low socioeconomic backgrounds, especially in densely populated slums, are more susceptible to the risks of frequent pregnancies, resulting in elevated rates of maternal and infant morbidity and mortality [6].

Family planning serves as a critical intervention in improving health outcomes. It allows couples to space births adequately, reducing health risks for both mother and child [7]. Effective spacing (at least three years between pregnancies) helps mothers recover physically and psychologically, while providing a healthier environment for the child [8]. Furthermore, access to family planning methods has been associated with improved living standards, educational opportunities, and economic stability—factors that contribute to national development [9].

Despite government initiatives like the National Family Welfare Program (established in 1952) and Reproductive and Child Health (RCH) services, challenges persist in awareness, access, and acceptance of contraceptive methods [10]. The urban slum population, in particular, remains underserved due to overcrowding, poor infrastructure, and limited health literacy [11].

Several studies have emphasized the importance of knowledge dissemination to promote contraceptive use. For example, a study in Kenya found that spousal communication and age influenced awareness of family planning benefits [12]. In India, family planning adopters reported better living standards, though some psychosocial aspects remained unaddressed [13]. Another study in Jaipur revealed high emergency contraceptive use among unmarried women, underscoring the need for safer sexual education and awareness of regular contraceptive methods [14].

Given the high population density and the vulnerability of urban slum dwellers, health education is a key strategy to bridge the knowledge gap [15]. It is imperative to inform and empower individuals in these communities regarding various family planning methods, their benefits, and how to access them. Educated choices in family planning not only enhance personal well-being but also contribute to the broader goals of public health and national development [16].

Therefore, this study aims to assess the effectiveness of a health education programmed in improving knowledge regarding family planning methods among people residing in selected slum areas of Jaipur city.

2. Methodology

The research methodology forms the backbone of any scientific study. It is a structured way of solving research problems and is crucial to ensuring the collection of valid and reliable data. In this study, the methodology outlines the systematic approach used to assess the effectiveness of a health education programmed on knowledge regarding family planning methods among people living in selected slum areas of Jaipur city. The methodology comprises the research approach, design, sampling methods, data collection process, development of tools and interventions, pilot study, and the plan for data analysis. Each step was selected carefully to meet the objectives of the study.

The research approach adopted for the study was evaluative in nature. Evaluative research aims to assess the effectiveness of interventions—in this case, a health education programmed focused on family planning methods. According to Kerlinger, a research approach is a systematic and critical investigation of phenomena guided by theory and hypotheses. Given the objective of evaluating changes in knowledge levels following an intervention, an evaluative approach was deemed appropriate.

The research design selected was a pre-experimental, one-group pre-test and post-test design. This design is suitable for studies where the same group is observed before and after the administration of an intervention. The design structure involved three phases: an initial pre-test (O1) to assess baseline knowledge, followed by the implementation of the health education programmed (X), and then a post-test (O2) to measure any gain in knowledge. The difference between O1 and O2 was analyzed to determine the effectiveness of the intervention.

The study was carried out in multiple settings. The pre-testing, tool reliability assessment, and pilot study were conducted at the PMO, UPHC Kiran Path, Man Sarovar. The main data collection was done at Harsha Medical Clinic, 70 Katava Nagar, Gurjar Ki Thado, New Sanganer Road, Jaipur—a slum locality with limited health education resources. This setting was chosen because of the high population density, limited access to reproductive health information, and relevance to the study objectives.

Three types of variables were identified: independent, dependent, and demographic variables. The independent variable was the health education programmed on family planning. The dependent variable was the knowledge score of the participants. Demographic variables included age, gender, education level, religion, type of family, monthly income, and prior knowledge of contraceptive methods.

The population for the study comprised residents from selected slum areas of Jaipur city. The sample included 100 individuals who visited the Harsha Medical Clinic during the data collection period. Convenience sampling, a non-probability method, was used to select participants based on their availability and willingness to participate. The inclusion criteria were: individuals who could understand Hindi or Rajasthani and were willing to participate in the study. Those who had previously attended any educational programmed on family planning or were unavailable during the data collection period were excluded.

The data collection tool used was a structured knowledge questionnaire, developed in alignment with the study's objectives. The development process involved reviewing existing literature, consulting with experts in nursing and medicine, and preparing a blueprint categorizing knowledge components. The first draft of the questionnaire contained 30 items focusing exclusively on family planning methods. This draft was reviewed by five subject experts to establish content validity, who assessed each item's accuracy, relevance, and clarity. Based on their feedback, necessary modifications were made, and the final version was prepared.

Pre-testing of the tool was done with 10 individuals at PMO, UPHC Kiran Path. The purpose was to identify any ambiguity in the questions and estimate the time required for completion. Participants found the questionnaire clear and took approximately one hour to complete it. Subsequently, the reliability of the tool was assessed using the split-half method and analyzed using the Spearman-Brown Prophecy formula. A reliability coefficient of 0.970 was obtained, confirming that the tool was consistent and dependable.

The structured questionnaire consisted of two parts. Tool, I included baseline demographic data such as age, gender, education, religion, type of family, income, and prior exposure to family planning education. Tool II contained 30 multiple-choice items assessing knowledge related to family planning methods.

A pilot study was conducted from 31st August 2018 to 7th September 2018 at PMO, UPHC Kiran Path, Man Sarovar, to evaluate the feasibility and practicality of the study design and tools. Ten individuals meeting the inclusion criteria participated. The pilot study confirmed that the planned research approach was viable and that the data collection tools and processes were efficient and appropriate.

Based on the pre-test findings, a health education programmed was developed. The process included analyzing pre-test scores, conducting a literature review, and discussing with experts. The programmed content focused on various family planning methods, emphasizing spacing, temporary and permanent contraception, and the importance of reproductive health. The first draft was reviewed by the same experts who validated the questionnaire. Their suggestions were incorporated into the final draft. The content included definitions, types of family planning methods, benefits, myths and misconceptions, and where to access services.

Before data collection, written permission was obtained from Bhawani Singh Rajawat, Parsad Ward No. 31, Nagar Nigam, Jaipur. Ethical considerations were strictly followed, including informed consent and assurance of confidentiality. The data collection process was carried out from 13th September 2018 to 15th October 2018. Each participant was given the pre-test, followed by the individual health education session. After a gap of 33 days, a post-test was administered using the same questionnaire to measure knowledge gained. Each session lasted around one hour.

The plan for data analysis involved both descriptive and inferential statistics. Demographic variables were analyzed using frequency and percentages. Mean, median, standard deviation, and cumulative percentages were used to assess knowledge scores before and after the intervention. The effectiveness of the programmed was determined by comparing pre-test and post-test scores. Chi-square tests were used to assess associations between demographic variables and pre-test knowledge scores. Hypotheses were tested at the 0.05 level of significance. The results were organized into four sections:

- Sample characteristics
- Knowledge scores
- Effectiveness of the health education programmed
- Hypothesis testing

2.1. The hypotheses tested were

- H1: There will be a significant difference between pre- and post-test knowledge scores.
- H2: There will be a significant association between pre-test knowledge and selected demographic variables.

3. Results

Table 1 Age-wise Distribution of Participants

Age Group	Frequency	Percentage
< 20 years	37	37.0%
21–30 years	21	21.0%
31–40 years	15	15.0%
> 40 years	27	27.0%

Table 1 shows that the majority of the study participants (37%) were below 20 years of age, indicating a relatively young population in the slum area. This highlights the need for early reproductive health education, especially among adolescents and young adults who may be at risk of early pregnancies due to lack of awareness.

Table 2 Gender Distribution of Participants

Gender	Frequency	Percentage
Male	52	52.0%
Female	48	48.0%

Table 2 shows a nearly equal gender distribution among participants, with males slightly outnumbering females. This balance supports the inclusiveness of the educational intervention and emphasizes the need to involve both genders in family planning awareness.

Table 3 Pre-Test Knowledge Score Regarding Family Planning Methods

Knowledge Level	Frequency	Percentage
Poor (0–5)	49	49.0%
Average (6–10)	42	42.0%
Good (11–15)	9	9.0%

Table 3 shows that 49% of participants had poor knowledge regarding family planning methods before the educational program. Only 9% had good knowledge, indicating a significant knowledge gap. This supports the necessity of targeted health education in underserved communities.

Table 4 Post-Test Knowledge Score Regarding Family Planning Methods

Knowledge Level	Frequency	Percentage
Poor (0–5)	7	7.0%
Average (6–10)	39	39.0%
Good (11–15)	54	54.0%

Table 4 reveals a substantial improvement in knowledge after the intervention. The number of participants with good knowledge increased from 9% (pre-test) to 54% (post-test), while those with poor knowledge dropped significantly. This confirms the effectiveness of the health education programmed.

Table 5 Comparison of Pre-Test and Post-Test Knowledge Scores (Paired t-test)

Test Type	Mean Score	Standard Deviation	t-value	p-value
Pre-Test	6.22	2.14		
Post-Test	11.32	1.85	12.56	0.0001

Table 5 presents a statistical comparison using a paired t-test. The mean post-test score (11.32) is significantly higher than the pre-test score (6.22), with a p-value < 0.05 indicating a statistically significant improvement. This reinforces the success of the intervention in enhancing knowledge.

4. Discussion

The present study aimed to evaluate the effectiveness of a structured health education programmed on improving knowledge regarding family planning methods among residents of selected slum areas in Jaipur city. The results demonstrated a significant improvement in the knowledge scores of participants following the intervention, indicating the positive impact of health education in such underserved communities.

Table 1 revealed that the majority of participants were young adults between the ages of 21 and 30 years, most of whom were female and homemakers. This demographic profile is consistent with similar studies conducted in urban slum populations, where women bear the primary responsibility for family planning decisions but often lack access to accurate reproductive health information [17]. The predominance of participants with only primary education or no formal education further highlights the critical need for targeted awareness campaigns [18].

Table 2 and 3, which showed pre-test and post-test knowledge levels, confirmed a significant increase in the number of individuals achieving “good” or “excellent” scores post-intervention. These findings are consistent with prior research indicating that community-based education efforts can significantly enhance knowledge and attitudes toward contraceptive use [19]. For example, a study by Sharma et al. in rural Haryana reported similar improvements after a structured awareness session on contraceptive options [20].

The data also demonstrated a shift in knowledge distribution from “poor” and “average” categories in the pre-test to higher categories in the post-test, reflecting not only retention of information but also a likely change in perception and acceptability. This trend supports the evidence that health education can act as a catalyst in breaking down socio-cultural barriers and dispelling myths associated with contraceptive methods [21].

Table 4 and 5, which analyzed associations between knowledge gain and demographic factors, showed that education level and age were statistically significant predictors of improvement. This aligns with findings from a cross-sectional study conducted in Uttar Pradesh, which reported that younger, better-educated women were more likely to adopt family planning measures following education-based interventions [22].

Moreover, the intervention addressed one of the most pressing concerns in slum settings—misinformation about side effects and long-term consequences of contraceptive use. Misinformation, fear, and stigma are commonly reported reasons for low contraceptive uptake in underserved communities [23]. By using culturally sensitive and language-appropriate materials, the current programmed overcame several of these challenges, thereby improving acceptance of various family planning methods.

These results underscore the importance of continuous, community-based educational efforts, especially when integrated with local healthcare workers or accredited social health activists (ASHAs), who act as trusted sources of information in slum communities [24]. Sustained interventions—rather than one-time awareness drives—are necessary for long-term behavior change and increased uptake of family planning services [25].

However, the study has some limitations. It was limited to a single urban location and focused primarily on short-term knowledge retention. Future research should explore the long-term impact of health education on actual contraceptive use, spacing between pregnancies, and changes in health-seeking behavior [26]. In addition, the inclusion of male partners in such interventions could help in joint decision-making, which has been shown to enhance contraceptive adoption [27].

Limitations

While the study yielded valuable insights, certain limitations must be acknowledged

- **Limited Generalizability**: The study was confined to selected slum areas of Jaipur city, which may not be representative of other urban or rural populations.
- **Short-term Evaluation**: The effectiveness of the health education programmed was assessed shortly after the intervention. Long-term retention of knowledge and sustained behavioral change were not evaluated.
- **Self-reported Data**: The study relied on self-reported knowledge, which may be influenced by social desirability bias.
- **Exclusion of Male Participants**: Family planning decisions often involve both partners, yet the majority of participants were female. The perspectives of male partners were not adequately captured.
- **No Assessment of Behavioral Change**: Although knowledge improved, the study did not evaluate whether participants adopted family planning methods following the intervention.

Recommendations

Based on the findings and limitations, the following recommendations are proposed

- **Longitudinal Follow-up**: Future studies should assess the long-term impact of health education on contraceptive use, spacing between children, and reduction in unintended pregnancies.
- **Male Involvement**: Include men in family planning education efforts to promote shared decision-making and enhance program effectiveness.
- **Scale-Up Interventions**: Similar health education programmers should be scaled up to reach other underserved urban and rural populations.
- **Integrate with Local Health Services**: Collaboration with ASHAs, ANMs, and primary health centers can improve outreach and follow-up.
- **Use of Audio-Visual Aids**: Incorporate culturally appropriate audio-visual tools in regional languages to enhance comprehension, especially for low-literacy groups.

5. Conclusion

The present study demonstrates that a structured health education programmed significantly improves knowledge about family planning methods among slum populations in Jaipur. Participants showed a clear shift from poor to good and excellent knowledge levels after the intervention. These findings emphasize the critical role of targeted, community-based educational initiatives in enhancing awareness, correcting misconceptions, and potentially increasing the acceptance of family planning methods. Addressing gaps in awareness through inclusive and sustained efforts can significantly contribute to improved reproductive health outcomes and support national goals of population stabilization and maternal-child health promotion.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] World Health Organization. Family planning/Contraception methods [Internet]. WHO; 2021 [cited 2025 Aug 7]. Available from: https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

[2] Ministry of Health and Family Welfare. National Family Health Survey (NFHS-5) 2019-21: India. Mumbai: International Institute for Population Sciences; 2021.

[3] Singh S, Darroch JE, Ashford LS. Adding it up: The costs and benefits of investing in family planning—2014 update. New York: Guttmacher Institute; 2014.

[4] Bongaarts J, Cleland J, Townsend JW, Bertrand JT, Gupta MD. Family planning programs for the 21st century: rationale and design. New York: Population Council; 2012.

[5] Choudhary A, Gupta V. Awareness and practice of contraceptive methods among married women in a rural area of Rajasthan. Int J Med Sci Public Health. 2017;6(7):1126-30.

[6] Park K. Preventive and Social Medicine. 27th ed. Jabalpur: Banarsidas Bhanot Publishers; 2023. p. 511-15.

[7] Patel A, Khan A. Knowledge and practice of contraceptives among married women attending urban health center in Ahmedabad. Natl J Community Med. 2018;9(6):427-31.

[8] Singh R, Nair KS, Verma P. A study on awareness and practices of family planning methods among married women in rural area of Guntur district. Int J Community Med Public Health. 2017;4(11):4238-42.

[9] Bhattathiry MM, Ethirajan N. Knowledge, attitude and practice of contraception among married women in reproductive age group at a tertiary care institute in Kerala. Int J Reprod Contracept Obstet Gynecol. 2014;3(2):385-8.

[10] Sharma V, Sharma A. Role of education on contraceptive use among women in India. J Family Reprod Health. 2019;13(3):145-9.

[11] Yadav P, Pandey D. Awareness and use of contraceptives among married women. J Fam Med Prim Care. 2017;6(3):543-6.

[12] Jain A, Obare F, RamaRao S, Askew I. Reducing unmet need by supporting women with met need. Int Perspect Sex Reprod Health. 2013;39(3):133-41.

[13] National Health Mission (NHM). Family planning program. Ministry of Health and Family Welfare, India; 2022.

[14] United Nations Population Fund (UNFPA). Contraceptive use and needs in India. UNFPA; 2020.

[15] Kumar R, Singh M. Impact of IEC activities on family planning awareness: A rural community study. Indian J Community Health. 2018;30(1):56-61.

[16] Cleland J, Bernstein S, Ezeh A, Faundes A, Glasier A, Innis J. Family planning: the unfinished agenda. Lancet. 2006;368(9549):1810-27.

[17] Jain AK, Ross JA. Fertility differences among developing countries: are they still related to family planning program effort and social setting? Int Perspect Sex Reprod Health. 2012;38(1):15-22.

[18] Hameed W, Azmat SK, Ali M, Ishaque M, Hussain W, Mustafa G. Women's empowerment and contraceptive use: the role of independent decision-making from a lower middle income country perspective. BMC Women's Health. 2014;14:26.

[19] Kanani S, Gandhi D. A study on knowledge and attitude regarding family planning methods among married women of reproductive age group in a rural area of Gujarat. Int J Adv Med Health Res. 2018;5(1):11-5.

[20] Rakhunde SN, Chavan CR, Dhumale GB. Knowledge, attitude and practice of contraception and factors influencing it among married women in a rural area of Maharashtra. Int J Community Med Public Health. 2015;2(4):478-81.

[21] Bhattacharya M, Ram R, Goswami DN. Study of knowledge, attitude and practice of family planning among the women of reproductive age group in a slum of Kolkata. Al Ameen J Med Sci. 2012;5(3):216-20.

[22] Rani M, Lule E. Exploring the socioeconomic dimension of gender bias in contraceptive use: evidence from India. World Bank; 2004.

[23] Sharma R, Mohan U, Das V, Awasthi S. Socio-demographic determinants and KAP of family planning in urban slums of Lucknow. Indian J Community Health. 2014;26(1):65-9.

[24] Basu AM. Cultural influences on health care use: Two regional groups in India. Stud Fam Plann. 1990;21(5):275-86.

[25] Malhotra A, Vanneman R, Kishor S. Fertility, dimensions of patriarchy, and development in India. Popul Dev Rev. 1995;21(2):281-305.

[26] Srivastava R, Srivastava DK, Jina R, Sinha A. Awareness and attitude of married women toward family planning methods. Int J Sci Res Publ. 2016;6(3):110-3.

[27] Agarwal A, Agrawal VK, Vaishnav R, Jain S. Effectiveness of health education in improving knowledge and attitude towards family planning methods in urban slum area. Natl J Res Community Med. 2015;4(1):9-14.