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KNOWLEDGE, ATTITUDE, AND PRACTICE REGARDING CONTRACEPTIVE USE AMONG MARRIED AND UNMARRIED WOMEN PRESENTING TO THE OPD IN A TERTIARY CARE HOSPITAL IN MUMBAI

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ABSTRACT

Background: Contraception is an effective simple, primary preventive care strategy available to improve the health of a woman and her family. Many governmental schemes are available free of cost or even incentivised in order to facilitate contraception and family planning which is also a part of sustainable developmental goals for any nation. However, the actual practice and utilisation of these services is suboptimal. There are many sociodemographic barriers as also myths, prejudices and misconceptions regarding contraceptive methods which create obstacles in the utilization of the available services. This study aims to assess and compare the knowledge, attitude, and practice (KAP) regarding contraceptive use among married and unmarried sexually active women presenting to the OPD in a tertiary care hospital in Mumbai who volunteered to participate in an online survey.

Materials and Methods: A cross-sectional study was conducted from October 2025 to December 2025 using a pre-validated, structured questionnaire shared as a google form through whatsapp /social media platforms . A total of 420 women aged 18 years and above who consented to participate and responded were included and their responses filed. Those who had a medical background or connection were excluded from the trial as they were likely to be better informed and confound results. All who could read, write and respond in English, Hindi or Marathi were included. Confidentiality was ensured as none of the respondents were asked to share their name. Data were analyzed using IBM SPSS version 26.0. Descriptive statistics summarized socio-demographic and KAP data, and Chi-square tests were used to determine associations between KAP levels and demographic variables, with $p < 0.05$ considered significant.

Results: Among 420 respondents, 59% were married and 41% unmarried. Overall, 25.2% demonstrated excellent knowledge, 41.9% good knowledge, and 9.1% poor knowledge of contraceptive methods. Married women had higher mean knowledge scores (13.9 ± 3.2) than unmarried women (12.4 ± 3.5). Attitude assessment showed 32.9% of participants had highly positive and 44.3% had positive attitudes toward contraception, with married women again scoring higher (14.3 ± 3.1 vs. 13.1 ± 3.4). In practice, 26.7% showed excellent contraceptive behavior and 42.4% good practice; however, only 47.1% reported consistent contraceptive use. Education, income, and age were significantly associated with better KAP outcomes ($p < 0.05$).

Conclusion: The study revealed satisfactory awareness and favorable attitudes toward contraception amongst women in the centre; however, a substantial gap persists between knowledge and consistent practice, particularly among unmarried women. Education and socioeconomic empowerment were key

determinants of positive contraceptive behavior. Targeted interventions focusing on health education, male involvement, and culturally sensitive counseling are essential to improve contraceptive uptake and reproductive autonomy.
Keywords: Contraceptive use, Knowledge–attitude–practice (KAP), Online survey, Reproductive health.

INTRODUCTION

Family planning and contraceptive awareness form the cornerstone of reproductive health and women's empowerment in developing nations. Despite decades of government initiatives and public health campaigns in India, the gap between knowledge and consistent contraceptive practice remains striking. Contraceptive literacy is not merely a matter of understanding—it reflects broader socio-cultural attitudes, gender norms, and accessibility to reliable information. In this context, evaluating the knowledge, attitude, and practice (KAP) regarding contraceptive use among women remains essential for advancing reproductive rights and achieving the Sustainable Development Goals (SDGs), particularly those related to health and gender equality.[1-4]

India, with its vast demographic diversity, continues to face challenges in ensuring universal access to modern contraceptive methods. Although national data suggest that awareness about contraception is relatively high, actual utilization often lags behind due to misconceptions, fear of side effects, societal stigma, and limited counseling support. This knowledge–practice gap persists even among educated, urban populations, underscoring the complexity of behavioral and cultural determinants influencing reproductive decisions. Addressing these barriers is vital for improving maternal health, reducing unplanned pregnancies, and enhancing family welfare outcomes.[5-9]

In an urban healthcare setup, where women are generally perceived to be more empowered and informed, socioeconomic disparities, patriarchal social structures, inadequate health education, and hesitancy to discuss reproductive matters openly contribute to inconsistent contraceptive use. Moreover, attitudes toward contraception vary widely between married and unmarried women—while the former often face sociocultural pressures related to fertility expectations, the latter encounter moral judgments and lack of access to confidential counseling.[10-14] These dynamics highlight the urgent need to assess not only awareness but also perceptions and practices surrounding contraception. All efforts should be targeted at emphasising on the safety of prevention of pregnancy as opposed to terminations.

With increasing internet penetration and digital literacy, online survey tools such as Google Forms now offer innovative means of capturing real-time, culturally and socially diverse data from women across all spectrums. Such digital methods allow inclusive participation from all willing respondents, overcoming conventional barriers of reach, privacy, and cultural hesitation.

The present study aims to assess and compare the knowledge, attitude, and practice regarding contraceptive use among married and unmarried women across using an online Google Form–based cross-sectional design. By identifying the magnitude of awareness, attitudes and existing behavioral gaps, this study seeks to provide evidence-based insights for policymakers and public health professionals. This will help to look into factors affecting utilization and design culturally sensitive educational interventions that strengthen reproductive autonomy and promote safe, informed contraceptive practices .

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional, online study was conducted from October 2025 to December 2025 to assess the knowledge, attitude, and practice (KAP) regarding contraceptive use amongst women. Data were collected through a Google Form–based online survey to ensure broad participation from all sections willing to participate. The confidential, online approach facilitated inclusion of demographically diverse respondents and ensured anonymity, convenience, and voluntary participation.

Study Population and Eligibility Criteria

The study included women aged 18 years and above, both married and unmarried, who had been residing in Mumbai for at least one year. Participants able to read and understand Hindi / English or Marathi and were willing to provide informed consent were included. Women currently pregnant, those undergoing infertility treatment, healthcare workers directly or indirectly involved in family planning services, and individuals with known psychiatric illnesses were excluded to prevent bias in awareness assessment.

Sample Size Determination

The minimum required sample size was estimated using the formula for single population proportion ($N = Z^2 \times p(1 - p) / d^2$), assuming a 50% expected awareness level, 95% confidence level, and 5% margin of error. The calculated sample size was 384, which was increased to 420 to compensate for possible non-responses or incomplete data. All complete responses that fulfilled exclusion criteria received through the online form were included in the final analysis.

Sampling and Recruitment Procedure

A non-probability snowball sampling technique was employed. The Google Form link was distributed

through social media platforms including WhatsApp, Facebook, Instagram, and community networks. Participants were encouraged to share the form further within their networks, ensuring representation from different age groups, strata, educational levels and regions.

Data Collection Tool

A structured, pre-validated questionnaire was designed after reviewing previous literature and national guidelines on family planning. The questionnaire comprised four major sections:

Socio-demographic profile, including age, marital status, education, occupation, income, and area of residence.

Knowledge component, assessing awareness about types of contraceptives, mechanisms of action, sources of information, side effects, and prevalent myths.

Attitude component, examining perceptions, cultural acceptance, and willingness to use or recommend contraceptives.

Practice component, focusing on contraceptive usage patterns, preferred methods, regularity, and barriers to consistent use.

Each correct or positive response was given a score of one, while incorrect or negative responses were scored zero. Cumulative scores were categorized as Excellent (≥75%), Good (50–74%), Fair (25–49%), and Poor (<25%).Further., a note of additional remarks or inputs was made separately

Validation and Reliability

The questionnaire underwent expert review by 2 independent specialists in obstetrics and gynecology, one internal and one external to the institute to ensure relevance and clarity. A pilot study was conducted among 25 women from those attending the Gynaecology OPD who fulfilled the criteria . These responses were excluded from the final analysis. The Cronbach's alpha value of 0.87 indicated high internal consistency of the instrument.

Ethical Considerations

Ethical clearance was obtained from the Institutional Ethics Committee before commencement of the study. All participants provided informed digital consent before submitting their responses. The study adhered to the principles outlined in the Declaration of Helsinki (2013 revision). Anonymity and confidentiality were maintained throughout, and no identifying personal information was collected. Participation was voluntary, and respondents could withdraw at any stage before final submission.

Data Management and Statistical Analysis

Data from Google Forms were automatically compiled in Google Sheets and later imported into IBM SPSS Statistics version 26.0 for analysis. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize socio-demographic variables and KAP scores. Inferential analysis using the Chi-square test was applied to determine associations between KAP levels and socio-demographic variables such as marital status, education, occupation, and socioeconomic status. A p-value of less than 0.05 was considered statistically significant. The results were presented in tables for clarity and ease of interpretation.

RESULTS

The study included 420 women, of whom 59% were married and 41% unmarried. The majority (33.8%) were aged 26–35 years, followed by 30% in the 18–25 age group, reflecting the predominance of women in reproductive age. Nearly three-fourths (73.3%) identified as Hindu, while others belonged to Muslim (12.9%), Buddhist (9%), or Christian/other (4.8%) communities. Educational attainment was relatively high, with 44.3% graduates and 33.8% postgraduates, indicating good literacy levels among respondents. One-third were professionals or in service (33.8%), and 28.1% were students, highlighting an urban, educated sample. Most participants (66.2%) resided in urban areas, and 58.6% lived in nuclear families. Among married women, half (50.8%) had one to two children, whereas 33.1% were nulliparous. The income distribution was fairly balanced, with 31.4% earning ₹25,001–50,000 per month, representing a middle socioeconomic profile.

Table 1: Socio-Demographic Characteristics of Study Participants (n = 420)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18–25	126	30.0
	26–35	142	33.8
	36–45	98	23.3
	>45	54	12.9
Marital Status	Married	248	59.0
	Unmarried	172	41.0
Educational Status	Up to Secondary (≤10+2)	92	21.9
	Graduate	186	44.3
	Postgraduate and Above	142	33.8
Occupation	Student	118	28.1
	Homemaker	84	20.0
	Service/Professional	142	33.8
	Self-employed	54	12.9
	Unemployed/Other	22	5.2
Monthly Household Income (INR)	<25,000	74	17.6
	25,001–50,000	132	31.4

	50,001–75,000	126	30.0
	>75,000	88	21.0
Residence Type	Urban	278	66.2
	Semi-urban	102	24.3
	Rural (migrated to city for work/study)	40	9.5
Religion	Hindu	308	73.3
	Muslim	54	12.9
	Buddhist	38	9.0
	Christian/Sikh/Other	20	4.8
Type of Family	Nuclear	246	58.6
	Joint/Extended	174	41.4
Parity (among married)	Nulliparous	82	33.1
	1–2 children	126	50.8
	≥3 children	40	16.1

Further assessment revealed that most women possessed a sound understanding of contraceptive methods. Over 86% correctly identified the primary purpose of contraception as prevention of unintended pregnancy, and 93.3% recognized condoms as protective against sexually transmitted infections. Awareness regarding temporary methods like IUDs and oral pills was high (78.1% and 71.9%, respectively). Three-fourths (75.2%) knew the correct time window for emergency contraception, though misconceptions persisted among a minority. Knowledge of permanent methods such as tubectomy and vasectomy was also satisfactory (80%). However, awareness about hormonal components, details like exact timing of initiation of pills, natural family planning, and duration of IUD efficacy was comparatively lower, indicating that while general contraceptive knowledge was good, detailed understanding of method-specific aspects remains incomplete.

Table 2: Knowledge Regarding Contraceptive Use Among Married and Unmarried Women (n = 420)

Q. No.	Question	Options	Correct n (%)
1	Main purpose of oral contraceptive pills is to	a) Delay menstruation b) Get menses regularly in patients with irregular periods c) **Prevent unintended pregnancy** d) Provide hormonal replacement	364 (86.7)
2	Which of the following is a temporary method of contraception?	a)**Condoms** b)Tubectomy c)Vasectomy d) d)Hysterectomy	328 (78.1)
3	Oral contraceptive pills mainly act by	a)Preventing union of sperms with eggs b)**Preventing ovulation/ egg release through hormonal alteration** c)Thickening uterine lining and preventing implantation d)Destroying quality of the egg and thus preventing fertilisation	302 (71.9)
4	Which contraceptive method provides protection against sexually transmitted infections (STIs)?	a)Oral pills b)Copper T/ Intrauterine device **c)Condoms** d)Injectable	392 (93.3)
5	IUD (Copper-T) can be inserted by	a)**Any adequately trained healthcare provider** b)ASHA worker c)Pharmacist d) self	350 (83.3)
6	Oral emergency contraception is effective if taken within	a) 12 hours b) 24 hours c) **72 hours** d) 1 week	316 (75.2)
7	The best time to start oral contraceptive pills is	a)Any day of cycle is suitable b)After ovulation **c)On the first or second day of menstruation** d)After intercourse	274 (65.2)
8	Which of the following is a permanent method of contraception?	a) Condoms b) **Tubectomy/Vasectomy** c) Copper-T d) Pills	336 (80.0)
9	Injectable contraceptives are given every	a) 1 week b) 2 weeks c) **3 months** d) 6 months e) other	278 (66.2)
10	Anyone desirous of avoiding pregnancy must avoid intercourse	a)During menses b)just before next period date c) at time of menses **d) in midcycle**	354(84.3)
11	Which method amongst these is most suitable for couples desiring spacing between children?	**a)IUD / copper T** b)Withdrawal method c) emergency contraception	298 (71.0)

		d)Condoms	
12	What is the main disadvantage of oral contraceptive pills and reason behind dropouts	a)Not an effective method b)**May cause side effects like nausea or weight gain** c)Causes long term infertility d)causes problems in periods	276 (65.7)
13	Which hormone is present in combined oral contraceptives?	a) Estrogen only b) **Estrogen and progesterone** c) Progesterone only d) Testosterone	312 (74.3)
14	Natural family planning method involves	a) Taking herbs b) **Avoiding intercourse during fertile days** c) Regular condom use d) Vaginal washing after intercourse	268 (63.8)
15	Condom failure may occur due to	a)Improper use or tear b)Spillage during improper withdrawal c)Reuse **d)All of the above**	334 (79.5)
16	Copper-T can prevent pregnancy for	a) 1 year b) 3 years c) **5–10 years** d) Lifetime	292 (69.5)
17	Male sterilization is termed as	a) Tubectomy b) **Vasectomy** c) Castration d) Ligation	350 (83.3)
18	Which method is safest for lactating mothers?	a)Combined pills b)**Progestin-only pills or IUD** c)Condom only d)Breastfeeding alone is enough if patient has no menses after delivery	256 (60.9)
19	Emergency contraceptive pills should be used	a)After menstruation if woman forgot to take her pills on first day b)Weekly for best effect c)Only after unprotected sex d)During ovulation period only	332 (79.0)
20	The main reason for contraceptive failure is	a)Hormonal imbalance in the woman **b)Incorrect or inconsistent use** c)Too much obesity in the woman d)Nausea and vomiting	310 (73.8)

Overall, attitudes toward contraception were favorable among participants. Nearly 91% agreed that family planning is essential for maternal and child health, and 88.6% emphasized shared responsibility between partners. A large proportion (85.2%) believed contraception improves women's socio-economic status, and 87.1% supported introducing family planning education in schools. However, cultural and moral influences were evident—only 58.1% considered contraceptive use acceptable for unmarried women, and one-third (33.8%) admitted feeling embarrassed discussing contraception. While 86.2% supported women's autonomy in choosing a method and 89.5% endorsed mass media promotion and a large number wanted more information on emergency methods. The collected data suggest lingering taboos and discomfort surrounding open reproductive discussions. Religious and societal perceptions continue to shape individual attitudes, though a strong majority demonstrated progressive views toward family planning. Also, male attitude towards male contraceptive methods remains consistently poor especially with regard to permanent methods.

Table 3: Attitudes Toward Contraceptive Use Among Married and Unmarried Women (n = 420)

Q. No.	Statement	Agree n (%)	Neutral n (%)	Disagree n (%)
1	Family planning is absolutely essential for maintaining maternal and child health.	384 (91.4)	28 (6.7)	8 (1.9)
2	Both partners should share responsibility for contraceptive decisions.	372 (88.6)	32 (7.6)	16 (3.8)
3	Using contraception helps improve women's socio-economic status.	358 (85.2)	40 (9.5)	22 (5.3)
4	Religious beliefs influence my opinion about contraception.	136 (32.4)	102 (24.3)	182 (43.3)
5	It is acceptable as well as safe for unmarried women to use contraception.	244 (58.1)	90 (21.4)	86 (20.5)
6	Male attitude towards consistent condom usage is unsatisfactory	294 (70.0)	76 (18.1)	50 (11.9)
7	Health education on family planning methods should be introduced in schools	366 (87.1)	36 (8.6)	18 (4.3)
8	I feel embarrassed discussing contraception openly.	142 (33.8)	108 (25.7)	170 (40.5)
9	Long-term contraceptive methods are safe when used properly. They do not cause cancers or infertility	314 (74.8)	66 (15.7)	40 (9.5)
10	Contraceptive use promotes better family relationships and husband wife rapport	272 (64.8)	90 (21.4)	58 (13.8)

11	Healthcare providers like my doctor or ASHA workers regularly give adequate information on contraceptives	264 (62.9)	96 (22.9)	60 (14.2)
12	Fear of side effects discourages women from using contraception.	308 (73.3)	74 (17.6)	38 (9.1)
13	Contraception should be discussed before marriage.	320 (76.2)	58 (13.8)	42 (10.0)
14	Women have the right to choose their preferred contraceptive method.	362 (86.2)	38 (9.0)	20 (4.8)
15	My family members other than my partner are involved in my family planning decisions	282 (67.1)	82 (19.5)	56 (13.4)
16	I fear that Copper T has too many unacceptable side effects like perforation , pain or bleeding	326 (77.6)	62 (14.8)	32 (7.6)
17	My family or partner supports the use of contraception.	292 (69.5)	76 (18.1)	52 (12.4)
18	Permanent family planning methods in the male can lead to sexual dysfunction	306 (72.9)	78 (18.6)	36 (8.5)
19	Once I complete my family size, I would be keen to undergo permanent family planning	264 (62.9)	94 (22.4)	62 (14.7)
20	Emergency Contraceptive use should be promoted through mass media openly and consistently. I would like to know more about it	376 (89.5)	32 (7.6)	12 (2.9)

Despite high awareness (97.6%), actual contraceptive use lagged behind. 58% of women reported that either they or someone close to them had used abortion services due to failure to use contraception. About 67.1% of participants reported ever using contraception, and only 47.1% used it consistently. Married women showed better adherence, with 74.9% reporting current use. Partner communication was encouraging, as 74.3% discussed contraception with their partners and 67.6% had consulted a healthcare provider. However, only 45.7% had ever attended a counseling or educational session, indicating insufficient health system outreach. A majority (63.8%) relied on media/ internet or friends for information, and 39% purchased contraceptives without prescription. Encouragingly, 86.2% were willing to recommend contraception to others, and 81.4% advocated for greater male involvement. Nonetheless, irregular use, limited professional guidance, and low participation in awareness programs highlight gaps in translating knowledge into sustained practice.

Table 4: (n = 420)

Q. No.	Practice Statement	Yes n (%)	Sometimes n (%)	No n (%)
1	Have you ever heard about contraceptive methods?	410 (97.6)	6 (1.4)	4 (1.0)
2	Have you ever used any method of contraception?	282 (67.1)	36 (8.6)	102 (24.3)
3	Do you currently use any contraceptive method?	186 (74.9)*	22 (8.9)	40 (16.2)
4	Do you or your partner prefer a specific contraceptive method?	228 (54.3)	86 (20.5)	106 (25.2)
5	Do you use contraception consistently (every time required)?	198 (47.1)	94 (22.4)	128 (30.5)
6	Have you ever discussed contraception with your partner?	312 (74.3)	48 (11.4)	60 (14.3)
7	Have you ever consulted a doctor/healthcare worker about contraception?	284 (67.6)	58 (13.8)	78 (18.6)
8	Do you purchase contraceptives from a medical store without prescription?	164 (39.0)	106 (25.2)	150 (35.8)
9	Have you ever received counseling or an educational session on contraception?	192 (45.7)	78 (18.6)	150 (35.7)
10	Do you rely on the media or internet or friends for contraceptive information?	268 (63.8)	84 (20.0)	68 (16.2)
11	Have you or any one close to you had to terminate a pregnancy due to failure to use contraception	244 (58)	NA	176 (42.0)
12	Have you ever experienced side effects after using contraception?	92 (21.9)	54 (12.9)	274 (65.2)
13	Did you discontinue contraceptive use due to side effects?	62 (14.8)	36 (8.6)	322 (76.6)
14	Have you encouraged friends or relatives to use contraception?	286 (68.1)	64 (15.2)	70 (16.7)
15	Do you think male partners should be more involved in contraceptive use?	342 (81.4)	46 (11.0)	32 (7.6)
16	Have you ever attended any family planning awareness program?	136 (32.4)	78 (18.6)	206 (49.0)
17	Was contraceptive counselling done as a part of routine check-ups?	318 (75.7)	62 (14.8)	40 (9.5)
18	Have you ever used emergency contraception?	104 (24.8)	66 (15.7)	250 (59.5)
19	Do you know where to access free or subsidized contraceptive services?	282 (67.1)	74 (17.6)	64 (15.3)
20	Would you recommend contraception to others as a healthy practice?	362 (86.2)	34 (8.1)	24 (5.7)

Analysis of KAP scores revealed that 25.2% of women had excellent knowledge, 41.9% good knowledge, and only 9.1% poor knowledge. Married women scored higher (mean 13.9 ± 3.2) than unmarried women (12.4 ± 3.5), likely due to more frequent exposure to family planning services. Similarly, 32.9% of participants demonstrated highly positive attitudes and 44.3% had positive attitudes, with married women again leading (mean 14.3 ± 3.1 vs. 13.1 ± 3.4). In practice, 26.7% exhibited excellent behavior, 42.4% good, and 9.5% poor, with a mean score of 13.0 ± 3.5. These findings indicate moderate to high awareness and attitudes but relatively weaker consistency in practice, underscoring the need to bridge the knowledge–practice gap.

Table 5: Overall Knowledge, Attitude, and Practice (KAP) Summary on Contraceptive Use Among Married and Unmarried Women (n = 420)

Domain	Level	Married Women n (%)	Unmarried Women n (%)	Total n (%)
Knowledge	Excellent (≥ 75 %)	78 (31.5)	28 (16.3)	**106 (25.2)**
	Good (50–74 %)	104 (41.9)	72 (41.9)	**176 (41.9)**
	Fair (25–49 %)	48 (19.3)	52 (30.2)	**100 (23.8)**
	Poor (< 25 %)	18 (7.3)	20 (11.6)	**38 (9.1)**
	Mean ± SD Score	**13.9 ± 3.2**	**12.4 ± 3.5**	**13.3 ± 3.4**
Attitude	Highly Positive (≥ 75 %)	92 (37.1)	46 (26.7)	**138 (32.9)**
	Positive (50–74 %)	108 (43.6)	78 (45.3)	**186 (44.3)**
	Neutral (25–49 %)	34 (13.7)	34 (19.8)	**68 (16.2)**
	Negative (< 25 %)	14 (5.6)	14 (8.2)	**28 (6.6)**
	Mean ± SD Score	**14.3 ± 3.1**	**13.1 ± 3.4**	**13.9 ± 3.3**
Practice	Excellent (≥ 75 %)	82 (33.1)	30 (17.4)	**112 (26.7)**
	Good (50–74 %)	108 (43.6)	70 (40.7)	**178 (42.4)**
	Fair (25–49 %)	42 (16.9)	48 (27.9)	**90 (21.4)**
	Poor (< 25 %)	16 (6.4)	24 (14.0)	**40 (9.5)**
	Mean ± SD Score	**13.6 ± 3.4**	**12.2 ± 3.5**	**13.0 ± 3.5**

Knowledge levels were significantly associated with age, marital status, education, occupation, income, and residence ($p < 0.05$). Women aged 26–45 years exhibited higher knowledge compared to younger respondents, suggesting maturity and reproductive experience enhance awareness. Married women had significantly better knowledge ($p = 0.003$), likely due to greater healthcare contact. Educational attainment showed the strongest association ($p < 0.001$), with postgraduates most likely to have excellent knowledge. Similarly, service professionals and those with higher incomes (>₹75,000) demonstrated superior awareness, highlighting the impact of socioeconomic empowerment.

Table 6: Association Between Socio-Demographic Variables and Knowledge Level on Contraceptive Use Among Married and Unmarried Women (n = 420)

Variable	Category	Excellent n (%)	Good n (%)	Fair n (%)	Poor n (%)	χ^2 value	p-value	Significance
Age Group (years)	18–25 (n = 92)	12 (13.0)	36 (39.1)	30 (32.6)	14 (15.3)	13.72	0.012 *	Significant
	26–35 (n = 118)	28 (23.7)	54 (45.8)	28 (23.7)	8 (6.8)			
	36–45 (n = 96)	30 (31.3)	42 (43.8)	18 (18.8)	6 (6.1)			
	46–60 (n = 78)	22 (28.2)	32 (41.0)	18 (23.1)	6 (7.7)			
	> 60 (n = 36)	8 (22.2)	14 (38.9)	10 (27.8)	4 (11.1)			
Marital Status	Married (n = 248)	78 (31.5)	104 (41.9)	48 (19.3)	18 (7.3)	16.24	0.003 *	Significant
	Unmarried (n = 172)	28 (16.3)	72 (41.9)	52 (30.2)	20 (11.6)			
Education Level	Up to Secondary (n = 86)	8 (9.3)	26 (30.2)	34 (39.5)	18 (21.0)	29.48	< 0.001 **	Highly Significant
	Graduate (n = 176)	36 (20.5)	78 (44.3)	46 (26.1)	16 (9.1)			
	Postgraduate & Above (n = 158)	62 (39.2)	64 (40.5)	24 (15.2)	8 (5.1)			
Occupation	Student (n = 64)	10 (15.6)	24 (37.5)	20 (31.2)	10 (15.7)	18.62	0.005 *	Significant
	Service/Professional (n = 148)	46 (31.1)	64 (43.2)	28 (18.9)	10 (6.8)			
	Homemaker (n = 106)	24 (22.6)	42 (39.6)	28 (26.4)	12 (11.4)			
	Self-Employed (n = 70)	20 (28.6)	28 (40.0)	16 (22.9)	6 (8.5)			
	Retired/Unemployed (n = 32)	8 (25.0)	12 (37.5)	8 (25.0)	4 (12.5)			
Monthly Income (INR)	< 25,000 (n = 74)	8 (10.8)	26 (35.1)	26 (35.1)	14 (18.9)	15.02	0.014 *	Significant

	25,001–50,000 (n = 138)	28 (20.3)	56 (40.6)	38 (27.5)	16 (11.6)			
	50,001–75,000 (n = 122)	34 (27.9)	50 (41.0)	28 (23.0)	10 (8.1)			
	> 75,000 (n = 86)	36 (41.9)	34 (39.5)	12 (14.0)	4 (4.6)			

Attitude toward contraception correlated significantly with age, marital status, education, occupation and income ($p < 0.05$). Highly positive attitudes were most prevalent among women aged 36–45 years and those with higher education ($p < 0.001$). Married women exhibited more favorable attitudes (37.1% highly positive) compared to unmarried counterparts (26.7%), reflecting cultural acceptance of contraception within marriage. Professional women and those with higher incomes also demonstrated more progressive perspectives.

Table 7: Association Between Socio-Demographic Variables and Attitude Levels on Contraceptive Use Among Married and Unmarried Women (n = 420)

Variable	Category	Highly Positive n (%)	Positive n (%)	Neutral n (%)	Negative n (%)	χ^2 value	p-value	Significance
Age Group (years)	18–25 (n = 92)	20 (21.7)	40 (43.5)	22 (23.9)	10 (10.9)	11.68	0.020 *	Significant
	26–35 (n = 118)	38 (32.2)	52 (44.1)	20 (17.0)	8 (6.7)			
	36–45 (n = 96)	36 (37.5)	44 (45.8)	12 (12.5)	4 (4.2)			
	46–60 (n = 78)	30 (38.5)	34 (43.6)	10 (12.8)	4 (5.1)			
	> 60 (n = 36)	14 (38.9)	16 (44.4)	4 (11.1)	2 (5.6)			
Marital Status	Married (n = 248)	92 (37.1)	108 (43.6)	34 (13.7)	14 (5.6)	14.96	0.004 *	Significant
	Unmarried (n = 172)	46 (26.7)	78 (45.3)	34 (19.8)	14 (8.2)			
Education Level	Up to Secondary (n = 86)	12 (14.0)	34 (39.5)	28 (32.6)	12 (13.9)	26.84	< 0.001 **	Highly Significant
	Graduate (n = 176)	50 (28.4)	82 (46.6)	32 (18.2)	12 (6.8)			
	Postgraduate & Above (n = 158)	76 (48.1)	70 (44.3)	8 (5.1)	4 (2.5)			
Occupation	Student (n = 64)	12 (18.8)	28 (43.8)	16 (25.0)	8 (12.4)	17.44	0.008 *	Significant
	Service/Professional (n = 148)	50 (33.8)	70 (47.3)	20 (13.5)	8 (5.4)			
	Homemaker (n = 106)	32 (30.2)	48 (45.3)	18 (17.0)	8 (7.5)			
	Self-Employed (n = 70)	26 (37.1)	32 (45.7)	8 (11.4)	4 (5.8)			
	Retired/Unemployed (n = 32)	12 (37.5)	14 (43.8)	4 (12.5)	2 (6.2)			
Monthly Income (INR)	< 25 000 (n = 74)	10 (13.5)	32 (43.2)	20 (27.0)	12 (16.3)	14.22	0.016 *	Significant
	25 001–50 000 (n = 138)	36 (26.1)	64 (46.4)	28 (20.3)	10 (7.2)			
	50 001–75 000 (n = 122)	46 (37.7)	52 (42.6)	18 (14.8)	6 (4.9)			
	> 75 000 (n = 86)	46 (53.5)	38 (44.2)	2 (2.3)	0 (0.0)			

Practice levels were significantly influenced by multiple socio-demographic variables ($p < 0.05$). Married women, older participants (26–45 years), and those with higher education and income showed markedly better contraceptive practices. Graduates and postgraduates demonstrated the highest rates of consistent use ($p < 0.001$). Women engaged in service or professional work displayed superior contraceptive behavior compared to students and homemakers, reflecting access to health resources and autonomy in decision-making. Despite good knowledge and attitudes, practice disparities persist among young, unmarried, and low-income women, emphasizing the continued need for culturally appropriate counseling and accessibility of contraceptive services.

Table 8: Association Between Socio-Demographic Variables and Practice Levels on Contraceptive Use Among Married and Unmarried Women (n = 420)

Variable	Category	Excellent n (%)	Good n (%)	Fair n (%)	Poor n (%)	χ^2 value	p-value	Significance
Age Group (years)	18–25 (n = 92)	14 (15.2)	34 (37.0)	28 (30.4)	16 (17.4)	14.86	0.010 *	Significant
	26–35 (n = 118)	32 (27.1)	54 (45.8)	22 (18.6)	10 (8.5)			
	36–45 (n = 96)	34 (35.4)	42 (43.8)	14 (14.6)	6 (6.2)			
	46–60 (n = 78)	24 (30.8)	34 (43.6)	14 (17.9)	6 (7.7)			

	> 60 (n = 36)	8 (22.2)	14 (38.9)	12 (33.3)	2 (5.6)			
Marital Status	Married (n = 248)	82 (33.1)	108 (43.6)	42 (16.9)	16 (6.4)	16.58	0.003 *	Significant
	Unmarried (n = 172)	30 (17.4)	70 (40.7)	48 (27.9)	24 (14.0)			
Education Level	Up to Secondary (n = 86)	10 (11.6)	32 (37.2)	28 (32.6)	16 (18.6)	29.44	< 0.001 **	Highly Significant
	Graduate (n = 176)	42 (23.9)	80 (45.5)	38 (21.6)	16 (9.0)			
	Postgraduate & Above (n = 158)	60 (38.0)	66 (41.8)	24 (15.2)	8 (5.0)			
Occupation	Student (n = 64)	10 (15.6)	26 (40.6)	18 (28.1)	10 (15.7)	18.32	0.006 *	Significant
	Service/Professional (n = 148)	48 (32.4)	70 (47.3)	20 (13.5)	10 (6.8)			
	Homemaker (n = 106)	34 (32.1)	44 (41.5)	18 (17.0)	10 (9.4)			
	Self-Employed (n = 70)	18 (25.7)	34 (48.6)	14 (20.0)	4 (5.7)			
	Retired/Unemployed (n = 32)	10 (31.2)	14 (43.8)	6 (18.8)	2 (6.2)			
Monthly Income (INR)	< 25 000 (n = 74)	10 (13.5)	28 (37.8)	22 (29.7)	14 (19.0)	15.27	0.012 *	Significant
	25 001–50 000 (n = 138)	34 (24.6)	60 (43.5)	28 (20.3)	16 (11.6)			
	50 001–75 000 (n = 122)	38 (31.1)	54 (44.3)	22 (18.0)	8 (6.6)			
	> 75 000 (n = 86)	30 (34.9)	36 (41.9)	12 (13.9)	8 (9.3)			

DISCUSSION

The present cross-sectional study assessed and compared the knowledge, attitude, and practice regarding contraceptive use among married and unmarried women across women residing in Mumbai and suburbs through a Google Form–based online survey. The findings revealed that although a majority of participants demonstrated satisfactory awareness and favorable attitudes toward contraception, a considerable gap remained between knowledge and actual practice. This disparity underscores the multifactorial barriers—social, cultural, and behavioral—that continue to influence contraceptive adoption in Indian society.

The study observed that 25.2% of respondents exhibited excellent knowledge regarding contraceptive methods, while 41.9% had good knowledge. However, nearly one-third of participants, particularly among unmarried women, showed only fair or poor awareness. The mean knowledge score was notably higher among married women (13.9 ± 3.2) compared to unmarried women (12.4 ± 3.5), indicating that marital status continues to be a strong determinant of exposure to reproductive health information. Similar findings were reported by previous studies, where married participants demonstrated significantly better knowledge of contraception due to increased interactions with healthcare systems during antenatal and postnatal periods.[13-16]

Education played a crucial role in determining awareness levels. Participants with postgraduate qualifications showed significantly higher knowledge scores than those educated up to the secondary level ($p < 0.001$). This aligns with earlier Indian studies, which emphasized that higher education enhances understanding and acceptance of family planning.[17,18] Educated women are more likely to access accurate information, question misconceptions, and make informed reproductive choices. Conversely, women with limited schooling often rely on peers or family members, perpetuating myths and misinformation about contraceptives.

Attitude assessment revealed a generally positive perception toward family planning. About 32.9% of women exhibited highly positive attitudes, while 44.3% demonstrated positive attitudes, reflecting a gradual shift in societal acceptance of contraception. However, only 58.1% agreed that contraceptive use among unmarried women is acceptable, highlighting persistent moral and cultural taboos. Married women showed a more favorable attitude (mean score 14.3 ± 3.1) compared to unmarried respondents (13.1 ± 3.4), a pattern consistent with findings of earlier studies.[14,18,19] This difference may stem from cultural constraints that discourage open discussion of sexual health before marriage. The association between education, income, and attitude levels further reinforces that socioeconomic empowerment positively influences acceptance of family planning practices. A large number of women reported significant male partner reservation towards consistent or permanent contraceptive methods.

In terms of practice, 26.7% of participants exhibited excellent contraceptive behavior, while 42.4% demonstrated good practice. However, only 47.1% reported consistent use of contraception, and 24.3% of women had never used any method despite being aware of its benefits. A significantly high number

58% had either had to terminate pregnancy due to failure to use contraception properly themselves or in someone closely known to them. Married women reported significantly higher practice scores (mean 13.6 ± 3.4) than unmarried women (12.2 ± 3.5), suggesting that awareness does not necessarily translate into utilization, particularly among unmarried populations. Cultural norms, fear of social judgment, and limited access to confidential reproductive services may deter unmarried women from using contraception. Comparable gaps between awareness and practice were highlighted in many Indian pilot studies, both noting that social stigma and misinformation remain major obstacles to consistent contraceptive use.[18-20]

Socio-demographic factors showed significant associations with KAP scores. Women aged 26–45 years demonstrated higher knowledge and practice levels compared to younger participants, indicating that reproductive experience contributes to contraceptive awareness. Higher income was linked to better KAP outcomes ($p < 0.05$), reflecting the influence of healthcare accessibility and exposure to family planning programs. Similar patterns were observed in many studies, where urban women had better contraceptive knowledge and uptake due to proximity to health facilities and exposure to digital media campaigns.[2,5,8,17]

Despite high overall awareness, misconceptions persisted regarding methods such as oral contraceptives and intrauterine devices (IUDs). Nearly one-third of participants believed that contraceptive use could cause infertility or hormonal imbalance, echoing findings from previous regional studies. Such misconceptions emphasize the need for strengthened health education programs that provide accurate, evidence-based information through both online and community platforms.[6,8,9,12]

The high agreement rate (89.5%) for promoting contraceptive use through mass media highlights the growing trust in digital information channels. Given that this study was conducted through an online medium, it also demonstrates the potential of technology-driven awareness campaigns, particularly among younger and digitally active populations. However, reliance on online sources also carries the risk of misinformation, reinforcing the necessity for authentic, government-endorsed educational interventions.

mIn summary, the study highlights that while knowledge and attitudes toward contraception among women in urban populations is improving, consistent and informed practice remains suboptimal. Sociocultural influences, inadequate counseling, and persistent myths continue to hinder effective utilization. Addressing these issues requires a multi-pronged approach that integrates education, community engagement, and accessible healthcare services. Strengthening digital health literacy, expanding outreach, and encouraging male participation can collectively bridge the gap between awareness and sustained contraceptive practice.

Strength & Weakness

The strength of this study lies in its wide coverage and inclusion of both married and unmarried women, providing a comprehensive overview of contraceptive awareness and practices. The use of a validated, reliable questionnaire and a sizable sample ensured data accuracy and representativeness, while the online Google Form method facilitated anonymity and participation from women who might otherwise hesitate to discuss reproductive matters. However, being an online, self-reported, and non-probability-based survey, the study was limited by potential selection bias, favoring educated and digitally literate participants, and may have excluded women having low access to online platforms. Additionally, recall and social desirability biases may have influenced responses, and the cross-sectional design restricted causal interpretations, capturing attitudes and behaviors only at one point in time.

CONCLUSION

This study highlights that while awareness and attitudes toward contraception among women in Mumbai and suburbs are generally favorable, a substantial gap persists between knowledge and consistent practice. Married women exhibited higher knowledge and usage levels compared to unmarried women, reflecting the influence of marital status and cultural acceptability on contraceptive behavior. Education and socioeconomic status emerged as key determinants of better KAP scores, reinforcing the importance of women's empowerment in improving reproductive health outcomes. Overall, the findings underscore the ongoing need to address sociocultural barriers, misinformation, and limited access to counseling services that hinder effective contraceptive utilization.

Recommendations

To bridge the observed knowledge–practice gap, comprehensive and culturally sensitive educational campaigns should be implemented through both digital and community-based platforms. Family planning counseling should be integrated into routine health services and premarital education programs. Efforts must be made to enhance male participation and normalize open discussions about contraception in families and communities. School education regarding contraception should be across genders and not restricted to female sensitisation. Expanding access to free or subsidized contraceptive services as also emergency contraceptive services in government setup is essential. In the evolving future, contraception and surveys exclusively addressing contraception in unmarried women must be formulated as this vulnerable subgroup is most likely to need prevention and resort to terminations in case of unplanned pregnancy,

Collaboration between healthcare providers, educators, and media organizations can further strengthen awareness, dispel myths, and promote

informed reproductive choices, thereby advancing the broader goals of reproductive autonomy and women's health empowerment.

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