Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI:10.69980/tp1a0329

ACCESS TO CONTRACEPTION AND REPRODUCTIVE HEALTH EDUCATION IN RURAL VERSUS URBAN AREAS: A COMPARATIVE CROSS-SECTIONAL STUDY

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Abstract

Background: Disparities in access to contraception and reproductive health knowledge between rural and urban people is an area of public health concern in India. Rural regions experience an unmet need for family planning because of low literacy, poor access to health care, and sociocultural factors resulting in inequities. The objective of this study was to compare contraceptive access, knowledge, attitude, practice and reproductive health education among rural and urban women of reproductive ages.

Methods: A total of 200 currently married women aged 15–49 years, selected by multistage random sampling, were studied. Out of them, 100 each were taken from rural and urban areas. We used a pre tested structured questionnaire to assess socio-demographic profile, knowledge, attitude and practice of contraception and access to reproductive health education. The relationships were tested using chi-square test with $p<0.05$ level considered significant.

Results: The contraceptive prevalence rate (CPR) was significantly higher among urban women (74%) than among rural women (54%) ($p=0.004$). About 62% of urban women had adequate knowledge as compared to 38% of rural women ($p<0.001$). The unmet need for family planning among rural women is 28% and 14% among urban women ($p=0.016$). Approximately 71 percent of urban women and 42 percent of rural women reported exposure to any of the reproductive health education ($p < 0.001$). Rural areas exhibited significantly greater partner opposition, fear of side effects, and cultural barriers.

Conclusion: Rural areas and urban areas have great differences regarding contraceptive access, knowledge and attitude as well as reproductive health education. To bridge them, ASHA-based counselling, school-based adolescent reproductive health programmes and male partner engagement need urgent strengthening.

Keywords: Contraception, Reproductive health education, Rural-urban disparity, Unmet need, Family planning, India

Introduction

Access to family planning contraception and reproductive health education are fundamental determinants of women's health, autonomy and demographic outcomes. According to estimates, around 214 million women of reproductive age in developing countries wish to avoid pregnancy but are currently not using any modern contraceptive method. As a result, every year millions of women have unintended pregnancies which lead to preventable maternal deaths [1]. With a population of over 1.4 billion, India is the second most populated country in the world. Most people in India live in rural areas, which differ in many aspects from the urban population. Since the last six decades, progress has been made to expand family planning services that have been a continuing process. However, there is a considerable gap between the rural and urban population, as evident in their access to contraception and reproductive health knowledge [2].

According to the National Family Health Survey-4 (NFHS-4, 2015–16), India's overall contraceptive prevalence rate (CPR) is placed at 53.5%, reflecting a significant rural-urban divide. The national level of unmet need for family planning (i.e., the percentage of married women of reproductive age who want to limit or space childbearing but are not using any contraceptive) was 12.9%. Among rural population, it is found to be high and also is maximum among women with least education and the most economically disadvantaged women [2]. A community-based study from central rural India conducted in 2019 revealed that the unmet need was as high as 31.19% and that illiteracy, joint family structure, and religion were significant determinants [3]. The above figures emphasize the severe structural inequalities that continue to undermine the rural outcomes of India's family planning programme.

There are many essential topics of reproductive health education which includes knowledge on contraceptive methods, sexual health, menstrual hygiene, STIs, maternal health and family planning. Numerous studies indicate that women who are knowledgeable about reproductive health are more likely to use contraceptive services, have less unplanned pregnancies and suffer adverse maternal outcomes [4]. A cross-sectional study conducted in rural Karnataka revealed that while 81% of rural women were aware of family planning methods, only 53% of them were using any family planning method [5]. In a similarly structured study from Himachal Pradesh in 2020, awareness about contraception was in 84% of the rural participants, while only a mere 26% knew the side effects; pointing towards a shallow and incomplete level of reproductive health literacy [6].

Urban married women in India are more educated, have better access to media, have more economic power, and have lower social conservatism. All these factors make them more able than their rural counterparts to access and use contraception [7]. The health services are far away, and women depend on the frontline community health workers. They have little or no decision-making autonomy; there is partner opposition; and there are cultural and religious taboos. Likewise, fear of the side effects and limited access to formal education [8]. The Rashtriya Kishor Swasthya Karyakram (RKSK) launched in 2014, was specially designed for community based outreach and peer led education to plug gaps in adolescent reproductive health. However, it has not been implemented in rural areas consistently [9].

In spite of this evidence, comparable data from rural and urban community samples that were conducted at the same time using standardised tools still remains limited, especially from central India. Accordingly, the present study was undertaken to compare contraceptive prevalence and method mix between rural and urban women; to assess and compare knowledge, attitude, and practice of contraception; to find out rural-urban disparities in access to reproductive health education; and to determine socio demographic factors of contraceptive usage.

Material and Methods

Study Design and Setting

A comparative cross-sectional study was conducted simultaneously in a rural block and an urban locality under the field practice area of a medical college in central India over a period of 12 months.

Study Population and Sample

Inclusion criteria: currently married women aged 15–49 years, residing in the area for at least six months. Exclusion criteria: pregnant women at the time of the study, women with confirmed bilateral tubal ligation or hysterectomy before age 30, and those who declined to participate. A sample size of 100 women each from rural and urban areas (total n=200) was calculated using the formula for comparison of two proportions, based on expected rural CPR of 54% and urban CPR of 67% from NFHS-4 [2], with 80% power, 5% level of significance, and a design effect of 1.2. Multistage random sampling was used in both settings: villages/wards were selected by simple random sampling, followed by systematic random sampling of households.

Data Collection

A pre-tested, structured questionnaire was administered by trained female field investigators through face-to-face interviews in the local language (Hindi). Sections covered: (A) socio-demographic profile; (B) knowledge of contraceptive methods (scored as adequate ≥60% or inadequate <60%); (C) attitude towards contraception (scored as favourable or unfavourable using a 3-point Likert scale); (D) practice/current use, ever use, method preference, and unmet need (defined per standard NFHS methodology); (E) access to reproductive health education including source, type, and content.

Ethical Considerations

Ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants. Confidentiality was maintained. Women identified with unmet need or misconceptions were provided counselling and referred to the nearest health facility.

Statistical Analysis

Data were entered in Microsoft Excel and analysed using SPSS version 21.0. Frequencies, proportions, and cross-tabulations were computed. Chi-square test and Fisher's exact test were used for categorical associations. A p-value <0.05 was considered statistically significant.

Results

The enrolment was of a total 200 women, 100 each from rural and urban areas, with no refusals after enrolment. The average age of rural women was 28.6 ± 6.4 years, whereas that of urban women was 29.1 ± 5.9 years. Urban women had a much higher educational attainment ($p<0.001$). Most rural women were homemakers (82%) and belonged to lower socio-economic class (54%). Table 1 provides a detailed overview of the socio-demographic characteristics. Overall adequate knowledge of contraception was significantly higher among urban women (62%) as compared to rural women (38%) ($p<0.001$). The awareness of emergency contraception was significantly lower in rural areas (18% vs 52% urban; $p<0.001$). Rural respondents were also most ignorant of injectable contraceptives and IUDs. According to statistical analysis findings in reference to socio-demographic characteristics of respondent women were favourable for contraception use in rural and urban areas. Rural women experienced partner opposition at a rate of 38% compared to urban women at 16%. Rural areas were also significantly more likely to fear side effects and cultural/religious taboos. According to the information given in Table 3, the current contraceptive prevalence (CPR) rate is 54% for rural women and 74% for urban women ($p=0.004$). Among rural current users, tubectomy was predominantly used (38.9%) while OCP was most common among urban users (29.7%). The unmet need for family planning was significantly higher in rural areas (28%) versus urban areas (14%) ($p=0.016$). According to Table 4, the urban women who were exposed to any form of reproductive health education was significantly higher (71%) than that of rural women (42%) ($p<0.001$). Only 16% of rural women as opposed to 48% of urban women ($p<0.001$) received school/college-based reproductive health education. ASHA ANMs were the most common source of information from which people got information in rural people. However,

in urban areas, internet and media were the most common sources from which people got information. The findings of the study have been detailed in table 5.

Table 1: Socio-demographic Characteristics of Study Participants (n=200)

Characteristic	Category	Rural (n=100) n (%)	Urban (n=100) n (%)	p-value
Age (years)	15–24	22 (22.0)	20 (20.0)	0.712
	25–34	48 (48.0)	50 (50.0)	
	35–49	30 (30.0)	30 (30.0)	
Education	Illiterate	38 (38.0)	10 (10.0)	<0.001
	Primary/Middle	34 (34.0)	22 (22.0)	
	Secondary and above	28 (28.0)	68 (68.0)	
Occupation	Homemaker	82 (82.0)	58 (58.0)	<0.001
	Employed/Other	18 (18.0)	42 (42.0)	
Parity	0–1 children	28 (28.0)	44 (44.0)	0.021
	2 children	42 (42.0)	40 (40.0)	
	≥3 children	30 (30.0)	16 (16.0)	
Socioeconomic class	Lower	54 (54.0)	22 (22.0)	<0.001
	Middle	36 (36.0)	46 (46.0)	
	Upper	10 (10.0)	32 (32.0)	
Religion	Hindu	76 (76.0)	72 (72.0)	0.521
	Muslim	18 (18.0)	20 (20.0)	
	Other	6 (6.0)	8 (8.0)	

Table 2: Knowledge Regarding Contraceptive Methods (n=200)

Knowledge Parameter	Rural (n=100) n (%)	Urban (n=100) n (%)	p-value
Adequate overall knowledge (≥60% score)	38 (38.0)	62 (62.0)	<0.001
Aware of condom	88 (88.0)	96 (96.0)	0.043
Aware of oral contraceptive pill (OCP)	74 (74.0)	90 (90.0)	0.004
Aware of IUD/Cu-T	58 (58.0)	76 (76.0)	0.006
Aware of female sterilisation (tubectomy)	70 (70.0)	82 (82.0)	0.054
Aware of injectable contraceptives	32 (32.0)	56 (56.0)	0.001
Aware of emergency contraception	18 (18.0)	52 (52.0)	<0.001
Knowledge of at least one spacing method	46 (46.0)	72 (72.0)	<0.001
Aware of contraceptive side effects	24 (24.0)	54 (54.0)	<0.001

Table 3: Attitude Towards Contraception (n=200)

Attitude Parameter	Rural (n=100) n (%)	Urban (n=100) n (%)	p-value
Favourable attitude towards contraceptive use	52 (52.0)	74 (74.0)	0.001
Partner opposes contraceptive use	38 (38.0)	16 (16.0)	0.001
Fear of side effects as main barrier	54 (54.0)	32 (32.0)	0.002
Religious or cultural taboo cited as barrier	30 (30.0)	12 (12.0)	0.002
Believes contraception is woman's responsibility only	62 (62.0)	38 (38.0)	0.001
Favours male partner involvement in family planning	44 (44.0)	64 (64.0)	0.004

Table 4: Practice of Contraception and Unmet Need (n=200)

Practice Parameter	Rural (n=100) n (%)	Urban (n=100) n (%)	p-value
Current contraceptive use (CPR)	54 (54.0)	74 (74.0)	0.004
Ever use of contraception	62 (62.0)	82 (82.0)	0.001
Tubectomy (among current users)	21 (38.9%)*	10 (13.5%)*	<0.001
Male condom (among current users)	14 (25.9%)*	21 (28.4%)*	0.743
Oral contraceptive pill (among current users)	12 (22.2%)*	22 (29.7%)*	0.305

IUD/Cu-T (among current users)	5 (9.3%)*	15 (20.3%)*	0.071
Injectable/other modern (among current users)	2 (3.7%)*	6 (8.1%)*	0.281
Total unmet need for family planning	28 (28.0)	14 (14.0)	0.016
Unmet need for spacing	16 (16.0)	8 (8.0)	0.094
Unmet need for limiting	12 (12.0)	6 (6.0)	0.148

*Percentages calculated among current contraceptive users only

Table 5: Access to Reproductive Health Education (n=200)

Parameter	Rural (n=100) n (%)	Urban (n=100) n (%)	p-value
Exposure to any reproductive health education	42 (42.0)	71 (71.0)	<0.001
ASHA/ANM as source (among those with exposure)	28 (66.7%)**	18 (25.4%)**	<0.001
Television/radio as source (among those with exposure)	20 (47.6%)**	32 (45.1%)**	0.814
Internet/social media as source (among those with exposure)	4 (9.5%)**	30 (42.3%)**	<0.001
School/college-based reproductive health education	16 (16.0)	48 (48.0)	<0.001
ANC-based family planning counselling received	38 (38.0)	56 (56.0)	0.009
Discussed contraception with husband/partner	40 (40.0)	62 (62.0)	0.002
Discussed reproductive health with female friend/peer	24 (24.0)	46 (46.0)	0.001

**Percentages calculated among those with any exposure to reproductive health education

Discussion

The current comparative study was conducted using cross-sectional design among 200 married women from rural and urban areas respectively. The study took 100 subjects each from rural and urban areas whose age ranges from 15 to 49 years. It was found that all the rural-urban disparities were consistent and statistically significant in all the domains under study like access, knowledge, attitude, practice, and reproductive health education.

The study found that 54% of rural women were using any form of contraception compared to 74% urban women, resulting in a 20-percentage-point gap between the two groups. This corroborates the NFHS-4 (2015–16) finding of 57.7 CPR in rural and 65.1 in urban India [2]. According to the NFHS-5 (2019–21), on a national scale, the modern contraceptive prevalence rate (mCPR) has increased from 47.8% to 56.5%. At the national level, female sterilisation continues to be the most commonly used method, which is 37.9% [10]. In this context, the present finding of 38.9% tubectomies as current method among rural users is in line with the national scenario. The popularity of terminal method is very common among the rural family planning users. Incentive-based sterilisation programme and inadequate counselling on reversible spacing methods are the main reason for this. In this study, the majority of urban users were using the OCPs (29.7%). It indicates the availability of a wider mix of methods and higher uptake of reversible contraceptives. In a similar study conducted in rural Karnataka by Singh et al. (2017), it was reported that about 32% of rural women were using permanent sterilisation. However, spacing methods were not as popular even though there was a high level of awareness regarding them [5].

In the present study, the unmet need of family planning was found to be 28 per cent in rural areas and 14 per cent in urban areas. The national rural figure is higher than the NFHS-4 estimate for India, which is 12.9%. However, it is consistent with subnational estimates from the central part of India. This part of India had a community-based study in 2019 which reported a rural unmet need of 31.19%. Furthermore, significant correlates of this estimation were illiteracy, joint family structure, and Muslim religion [3]. A research in urban and rural settings of central India similarly found the unmet need to be 15.4% in urban cohort and 25.6% in rural cohort [11]

In the present study, knowledge of contraception was adequate in only just 38% of rural women as compared 62% of urban women ($p<0.001$). The disparity was most significan in their understanding of emergency contraception (18% in rural areas and 52% in urban areas) and side effects. A cross-sectional study from Himachal Pradesh conducted in 2020 states that though 84% of rural women

were aware of at least one method, only 26% were aware of the side effects of contraceptives [6]. This is quite similar to the present findings. Ramaiah and Jayarama – 2017 conducted a similar study in the rural area of Karnataka on 200 reproductive aged women. They reported that 81% of them had awareness about family planning methods. Moreover, 76% of them had a positive attitude. However, only 53% of them were practising contraception [5]. This shows the gap between the knowledge and practice which is witnessed in many studies conducted in various parts of India.

In a KAP study from Jammu with 200 married women, 50% of the respondents felt side effects as a serious reason for not using contraceptives, and lack of knowledge was the most common reason for non-use of contraceptives in 50% of non-users [12].Which is exactly similar to present study findings.

The unfavourable attitude toward contraception was found in 48% of rural women compared to 26% of urban women. It was reported that 38% of the rural women while 16% of the urban women had partner opposition ($p=0.001$). Furthermore, 62% of the rural women were of the view that contraception is the sole responsibility of the woman and this was found only in 38% of the urban women. The evidence of women's low autonomy and dependence on men as household decision-makers is documented in the literature on patriarchal social norms in rural India [7]. A research conducted in rural India mentioned that, 14% of rural women experienced direct opposition from their partners as a barrier to contraceptive use, limiting their independent choice of family planning method. According to the NFHS-4 data, only 24 percent of currently married women independently made decisions about their own healthcare in rural India as compared to 36 percent in urban India [2]. Targeted male engagement programmes are required within community health programmes and village health and nutrition days (VHNDs).

Access to reproductive health education fully and partially shows huge differences as only 42 % rural women received any form of reproductive health education and 71 % urban women. Further, the channel that had been most systematic and sustained i.e. school or college-based education had been accessed by only 16 per cent of rural women, as against 48 per cent of urban women ($p<0.001$). The overall knowledge and research done on ASRH (adolescent sexual and reproductive health) suggest that formal school-based SRH programmes improve contraceptive knowledge, delay sexual debut and increase use of health services [13]. The rural government schools haphazardly implement school-based reproductive health curricula. A research study conducted in rural India reported that at menarche, more than 50% of rural girls did not know anything about sex and reproductive health care. Moreover, sex education in schools was largely non-existent in rural India [13]. The NHM community health worker based, delivery model shapes the present finding wherein ASHA workers (66.7% of women who had any exposure) were the most important source of reproductive health information to rural women. Nonetheless, ASHAs face challenges due to being overburdened, less technically capable on newer contraceptive methods, and social pressures in a conservative environment.

The rural-urban divide was widened further by access to digital sources: 9.5% of rural women with any exposure to reproductive health chose the internet or social media as a source as against 42.3% of urban women ($p<0.001$). This indicates the digital divide in India where internet penetration is low in rural areas compared to urban areas. A KAP study from Jammu reported that 45% of urban respondents were getting information primarily from media (television and internet) [12]. This is in contrast to ASHA dominated information landscape in rural area as observed in the present study. To bridge this gap, investment in rural digital health literacy and mobile health solutions on reproductive health must be made besides strengthening facility-based counselling under the fixed-day static approach (FDSA).

The contraceptive outcomes are greatly associated with socioeconomic and demographic factors. The CPR among females with secondary education or above was significantly higher than that with illiterates ($p<0.001$). This finding is consistent with NFHS data on the CPR among females across three rounds of surveys [2]. Rural women were more likely to have a parity of three or more (30%) and were engaged with terminal method use rather than spacing method use. Both groups had a

strong association between non-use of contraception and lower socio-economic class. This was also reported by Jain et al. in an urban-rural comparison study in India [11]. Rural women (15-34 years) are inadequately counselled about reversible contraception during the inter-pregnancy period which is why they have higher unmet need for spacing.

The strengths of this study were simultaneous data collection from rural and urban areas with a standard tool, a gender-sensitive interview approach and the assessment of supply-side and demand-side determinants of contraceptive access. Some constraints are the cross-sectional study design that precludes causation, social desirability bias, a small sample size (200) and a single district of study which makes the findings not generalisable to a wider population.

The collective findings of the ethnographic study demand an extensive strategy comprising – (i) RKSK-based expansion of school-based ASRH education in rural areas; (ii) capacity-building of ASHAs in counselling on reversible and spacing contraceptive methods, especially OCPs, injectables and IUDs; (iii) mobile-based reproductive health platforms for rural women; (iv) structured male partner engagement modules in VHNDs; and (v) regular community-level screening camps to identify and fulfil the unmet need especially among younger, less educated, and lower socio-economic status women.

Conclusion

This study shows disparities between rural and urban areas on all dimensions of contraceptive access, such as method mix, prevalence, knowledge, attitude, practice, and reproductive health. The CPR of rural women is significantly lower than urban women and they have higher unmet need, poor knowledge, unfavourable attitudes caused by partner opposition and cultural barriers and very low exposure to reproductive health education than urban women. These conclusions indicate the urgent need for targeted community interventions, enhancement of frontline health worker capabilities, comprehensive school-based reproductive health programs, engagement of male partners, and digital outreach to close the persistent rural-urban divide in reproductive health equity in India.

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