ORIGINAL RESEARCH ARTICLE

Understanding Contraceptive Utilisation Patterns in Kerala: Insights from NFHS-5

Adwaith Gopan[1*], Binu Kumar BJ[2]

[1]Government College Attingal, University of Kerala, Thiruvananthapuram, India
[2]Mahatma Gandhi College, University of Kerala, Thiruvananthapuram, India

DOI: 10.55489/njcm.150720244039

ABSTRACT

Background: In the past decade, Kerala has witnessed an increase in the number of sexually transmitted diseases and unmet family planning needs. This study examines the knowledge of modern contraceptives, their use, and the current use of modern Keralite contraceptives against selected indicators.

Methodology: The dataset from the fifth round of the National Family Health Survey was used for this study (N=10969). To analyse the factors associated with and affecting knowledge and use of contraceptives (current use of modern and ever use of any), chi-square test and binary logistic regression were used.

Results: Wealth, age, and education level were positively associated with knowledge of modern contraceptives, whereas tribals were less aware than other castes. Wealthier, older, and less educated individuals had higher odds of using any/modern contraceptives than poor, younger, and higher educated individuals (odds<1). Muslims are likely to use contraceptives but are less likely to use modern methods than other religions (odds ratio: 1.67 and 0.78). Tribals had higher odds of using contraceptives (odds: 2.13). Urban respondents had lower odds of using modern contraceptives than rural respondents (odds: 0.751).

Conclusions: The higher odds of older, less-educated respondents using sterilisation over reversible contraceptives are likely due to social insecurities and misconceptions. Awareness and promotion of contraceptive use at the government level would help boost its use.

Keywords: Contraceptives, Knowledge, Utilisation, Sterilisation, NFHS, Kerala

ARTICLE INFO

Financial Support: None declared
Conflict of Interest: None declared
Received: 15-04-2024, **Accepted**: 16-05-2024, **Published**: 01-07-2024
***Correspondence:** Adwaith Gopan (Email: adwaithgopan07@gmail.com)

How to cite this article: Gopan A, Kumar BJB. Understanding Contraceptive Utilisation Patterns in Kerala: Insights from NFHS-5. Natl J Community Med 2024;15(7):511-518. DOI: 10.55489/njcm.150720244039

www.njcmindia.com | pISSN: 0976-3325 | eISSN: 2229-6816 | Published by Medsci Publications

INTRODUCTION

Kerala, a southern state of India, has always been lauded for its effective implementation of family planning services and is one of the first few states to achieve replacement levels of fertility.[1,2] However, over the past decade, the state has faced major setbacks in its family planning implementation. The unmet need for family planning increased from 8.9% to 14.3% from the third to the fourth round of the National Family Health Survey to the fourth round.[3] The state has also witnessed an increase in the number of sexually transmitted diseases, as well.[4]

To understand the depth of Kerala's current paradoxical situation, it is important to understand the history of its family planning. The success of Kerala's family planning services was built on the backdrop of female sterilisation, which began during the period of emergency in India.[5] After the emergency, the southern states took the central stage in implementing family planning measures, and there was an evident change in their demographic structure.[2] Despite witnessing changes in the demographic structure, family planning in Kerala has largely concentrated on sterilisation, and there is an apparent reluctance to use modern reversible contraceptives.[5] The problem with sterilisation is that it is permanent and cannot be used to prevent sexually transmitted diseases (STD) such as condoms.[6]

The latest NFHS data reveal that the number of users of any contraceptive method is less than 50%, and 75% of users of any method use sterilisation.[7] Any method of contraception involves both traditional and modern methods; traditional methods of contraception do not use any foreign objects/medications during intercourse, whereas modern methods involve foreign objects.[8]

The effectiveness of traditional methods in birth control is significantly lower than that of modern methods, and thus less prevalent among Keralites.[7,9] Traditional methods include lactational amenorrhoea (LAM), periodic abstinence, and withdrawal. The current use of modern contraceptives assesses whether they use modern methods of contraception at present.[8] It involves the use of a medical/pharmaceutical agent to prevent pregnancy and sexually transmitted diseases (STD). Condoms, intrauterine devices (IUD), and pills are examples of modern contraceptives.[6,8]

Several factors could influence the decision to use contraceptives. By studying the pattern of utilisation, one can understand the factors that influence a person's decision to use contraceptives and make robust suggestions to overcome potential gaps in its utilisation. This study has three core objectives: to understand the differences in the knowledge of modern contraceptives of people belonging to different socioeconomic categories, and to examine the factors affecting the use of contraceptives, and current use of modern contraceptives.

METHODOLOGY

Source of Data: This study was conducted using secondary data from the fifth round of the National Family Health Survey (NFHS). It was jointly collected by the Ministry of Health and Family Welfare of India (MoHFW) and the International Institute of Population Sciences (IIPS) as part of India's Demography and Health Survey (DHS).[7] The NFHS provides insights into the utilisation of antenatal and postnatal services, family planning, immunisation, child health, etc., from the local to the national level.[7,10] The fifth round of the NFHS was published in 2021, and data collection was conducted in two stages: the first stage started from June 2019 to January 2020, covering 17 states and five union territories (including Kerala), and the second stage from January 2020 to April 2021, covering the rest of the states.[7,10]

Sample Size of the Study: In the fifth round of the NFHS there were 10969 respondents from different parts of Kerala. The respondents were women aged 15-49 collected using stratified random sampling[7,11] (the detailed respondent profile is shown in Table 1).

Variables Selected for the study: The study had three outcome variables: knowledge of modern contraceptives and ii. use of contraceptives, and iii. Current use of modern contraceptives. The independent variables were wealth quintiles, age of the respondents, education of the respondents, location (rural/urban), religion, and ethnicity. The outcome variable 'ever use of any contraceptives' is used as an independent variable in the analysis of first outcome variable, and the outcome variable 'knowledge of modern contraceptives is used as an independent variable in the analyses of the second and third outcome variables. All the variables used in the study were categorical, and variables such as 'use of internet/television/radio' and ever married were not selected because of the high rate of missing data.

Statistical Tools Used for the Study: SPSS version 27.0.1 was used for the conducting analyses. Descriptive statistics, such as frequency, percentage, and confidence interval, were used to show the respondent profile. Pearson's chi-square test was used to assess the association between contraceptive knowledge and the selected socioeconomic indicators. The chi-square test is suitable for testing the association between two categorical variables.[12] The variables selected for the analysis were knowledge of modern contraceptives, wealth quintiles, age, religion, ethnicity, education, location, and ever used any contraceptive.

Binary logistic regression was used to analyse the influence of socioeconomic indicators on the use of any contraceptive and modern contraceptives. Binary logistic regression is suitable for predicting dichotomous outcome variables for the selected predictors.[12] The outcome variables in the analyses are, 'use of any method of contraception ever,' and 'current use of modern contraception.' The predic-

tors were wealth quintiles, age, religion, ethnicity, education, location, and knowledge of modern contraceptives. Binary logistic regression was not used for knowledge of contraceptives because of its skewed nature, which will likely result in biased interpretations.[13]

RESULTS

Respondent Profile: Table 1 shows the respondent profile from Kerala as per the NFHS-5 data sheet. There were 10969 respondents in total, and most of them were age 45-49 (16.3%), and 35-39 (16%). The majority of the respondents were Hindus (55.6%) and belonged to castes other than scheduled tribes (ST) (94.9%). Similar to Kerala's actual educational status, the respondents mostly had secondary (63.2%) or higher secondary (32.2%) education. The wealth quintiles are determined on a national scale, where only 6.4% of the people in Kerala fall into the poorer or poorest category and 75% of the total respondents are categorised as richer or richest. Nearly 58.4% of respondents lived in rural areas and 41.6% lived in urban areas.

Table 1: Respondent Profile as per NFHS-5

Variables	Frequency(%)	95% CI of %
Age in 5-year groups		
15-19	1459 (13.3)	12.67-13.94
20-24	1422 (13)	12.34-13.60
25-29	1337 (12.2)	11.58-12.81
30-34	1522 (13.9)	13.24-14.53
35-39	1752 (16)	15.3-16.66
40-44	1690 (15.4)	14.74-16.09
45-49	1787 (16.3)	15.61-16.99
Religion		
Hindu	6094 (55.6)	54.62-56.48
Muslim	3010 (27.4)	26.61-28.28
Christian & others	1865 (17)	16.31-17.71
Ethnicity		
Other Castes	10413 (94.9)	94.51-95.33
Scheduled Tribe	94 (0.9)	0.69-1
No caste / No tribe/ Do not know	462 (4.2)	3.85-4.6
Highest educational level		
No education	115 (1)	0.87-1.25
Primary	392 (3.6)	3.24-3.93
Secondary	6933 (63.2)	62.3-64.10
Higher Secondary and above	3529 (32.2)	31.3-33.05
Wealth Quintiles		
Poorest	112 (1)	0.84-1.22
Poorer	591 (5.4)	4.97-5.82
Middle	2042 (18.6)	17.89-19.35
Richer	4067 (37.1)	36.17-37.98
Richest	4157 (37.9)	37-38.80
Location		
Urban	4564 (41.6)	40.68-42.53
Rural	6405 (58.4)	57.46-59.31

(Source: NFHS-5), CI – Confidence Interval

Knowledge of Modern Contraceptives: Table 2 shows respondents' knowledge of modern contraceptives against the selected indicators. Of the 10,969 respondents, 123 (1.1%) did not know about modern contraceptives. Among those who were unaware, 5.8% were aged 15-19 and 0.8% were 20-24 years old. Of those aware of modern contraceptives, 48% were 35-49 years old, and only 25.7% were 15-24 years old. A significant chi-square association showed that younger respondents were less aware than older respondents. In terms of education, 2% with primary education and 1.5% with secondary education were unaware of modern contraceptives, indicating lower awareness among less educated groups (significant at 0.01 level).

Ethnic differences were significant at the 10% level, but the tribes had too few samples to definitively confirm lower awareness. For wealth quintiles, 3.6% in the poorest and 2.4% in the poorer groups lacked awareness, higher than 1.2% (richer) and 0.8% (richest), respectively. Remarkably, 39% of participants were aware of modern contraceptive use. No rural, urban, or religious differences emerged in terms of contraceptive knowledge. In summary, younger age, lower education, and poorer wealth status were associated with lower awareness of modern contraceptive methods.

Factors Influencing Use of Any Contraceptives ever, and Current use of Modern Contraceptives

Table 3 presents binary logistic regression results on 'ever used any contraceptives' and 'current use of modern contraceptives.' For 'ever used contraceptives', all variables except location and knowledge were significant predictors. For 'current modern contraceptive use', all variables except ethnicity and knowledge were significant.

The richest wealth quintile had a higher odd of contraceptive use (OR<1 for both regressions). Odds increased with higher wealth status. Compared to ages 45-49, the odds were lower for using any contraceptives or modern methods among ages 15-19 (OR: 0.003 and 0.001), 20-24 (0.072 and 0.046), 25-29 (0.293 and 0.176), 30-34 (0.727 and 0.469). Ages 35-39 and 40-44 had similar odds for any use, but lower odds for modern methods (OR: 0.734 and 0.842).

No rural-urban difference existed for any use, but modern use was rurally higher (OR: 0.751). Primary and secondary education predicted higher odds of any use (OR: 1.376 and 1.787, respectively) and modern use (OR: 1.921 and 1.925, respectively) versus higher education. No education had similar odds to higher education for any use but higher for modern education (OR=1.775). Muslims had higher odds of any use (OR: 1.672) but lower odds of modern use (0.781) than Hindus/Christians/Others. Tribals had higher use (2.331) but insignificantly lower modern use (0.8) than no caste. Knowledge was insignificant in both regressions.

Table 2: The Knowledge of Women on Modern Contraceptives in Kerala during 2019-21

Variable	Don't know any modern method (%)	Knows Modern method (%)	Pearson Chi-Square Value
Age in 5-year groups			
15-19	85 (5.8)	1374 (94.2)	**339.017*** **
20-24	11 (0.8)	1411 (99.2)	
25-29	5 (0.4)	1332 (99.6)	
30-34	6 (0.4)	1516 (99.6)	
35-39	2 (0.1)	1750 (99.9)	
40-44	7 (0.4)	1683 (99.6)	
45-49	7 (0.4)	1780 (99.6)	
Highest educational level			
No education	1 (0.9)	114 (99.1)	
Primary	8 (2)	384 (98)	
Secondary	103 (1.5)	6830 (98.5)	
Higher Secondary and above	11 (0.3)	3518 (99.7)	**32.217*** **
Type of place of residence			
Urban	46 (1)	4518 (99)	
Rural	77 (1.2)	6328 (98.8)	0.907
Religion			
Hindu	71 (1.2)	6023 (98.8)	
Muslim	27 (0.9)	2983 (99.1)	2.299
Christian and others	25 (1.3)	1840 (98.7)	
Ethnicity			
Other Castes	118 (1.1)	10295 (98.9)	
Scheduled Tribe	3 (3.2)	91 (96.8)	
No caste / No tribe/ Do not know	2 (0.4)	460 (99.6)	**5.621***
Wealth Quintiles			
Poorest	4 (3.6)	108 (96.4)	
Poorer	14 (2.4)	577 (97.6)	
Middle	23 (1.1)	2019 (98.9)	
Richer	48 (1.2)	4019 (98.8)	**17.939*** **
Richest	34 (0.8)	4123 (99.2)	
Use of any method			
Yes	0 (0)	6585 (100)	
No	123 (2.8)	4261 (97.2)	**186.848*** **

(Source: Author's interpretations from NFHS-5 datasheet)
Note: - *** indicates P<0.01, ** indicates P<0.05, * indicates P<0.1, and no asterisks indicate insignificant parameter/variable

DISCUSSION

The analysis of the study is conducted in two sections: the first section of the analysis was focused on socioeconomic differences in the knowledge of modern contraception, and the second section was a regression analysis to determine the socio-economic factors that affect the use of any contraceptive and the current use of modern contraceptives. In Kerala, almost 99% of people are aware of modern contraceptives; therefore, the problem of awareness is not severe, but there are some key takeaways from the analysis. In Kerala, awareness of modern contraception increases as women's wealth, education, and age increase, indicating that people with a better social status (high wealth and education) are more likely to be aware of modern contraceptives than their counterparts, which is supported by similar studies conducted among married women and the urban poor in India.[14,15] Ethnicity has a low but significant association with the awareness of modern contraceptives, where people from scheduled castes are relatively less aware of contraceptives, which is likely due to the lack of education among them compared to others. This was corroborated by studies conducted using the NFHS-2 datasheet and married tribal women in India, in which lack of knowledge about contraceptives was attributed to their overall lack of education.[10,15] Another reason could be cultural barriers (which stem from low education) among tribes in accessing public healthcare systems as they fear that it is less reliable than traditional healthcare, which is supported by studies conducted among tribes in India and Kerala.[16,17] Religion and location of the household were not significantly associated with knowledge of contraception, indicating that personal factors play an important role in interpersonal and cultural factors when determining contraception awareness, which was validated by Sámano et al. in their study on contraception use.[18] None of the participants who were unaware of modern contraception used any method of contraception, which is consistent with the findings of Devaru et al.[19] However, the skewed nature of the knowledge of modern contraception variable resulted in its insignificance in the regression analyses.[13] The lack of knowledge and use of modern contraceptives among the poor and marginalised sections of society is an indicator of the ineffectiveness of public health systems, such as primary care, in providing proper awareness and education.[14,20]

Table 3: Binary Logistic Regression on whether people use contraceptives, and the current use of modern contraceptives

Categories	Ever Used Any Contraceptives (Reference: Yes)		Current Use of Modern Contraceptives (Reference: User of modern contraceptive)	
	Parameter (SE)	Odds Ratio (OR)	Parameter (SE)	Odds Ratio (OR)
Wealth Quintiles (Richest)	18.142***		20.606***	
Poorest	0.011 (0.264)	1.011	-0.247 (0.243)	0.781
Poor	-0.350 (0.124) ***	0.705	-0.424(0.116) ***	0.654
Middle	-0.272 (0.079) ***	0.762	-0.243 (0.073) ***	0.784
Richer	-0.197 (0,061) ***	0.821	-0.188 (0.057) ***	0.828
Age (45-49)	1809.430***		1168.009***	
15-19	-5.710 (0.21) ***	0.003	-6.9997 (0.581) ***	0.001
20-24	-2.625 (0.097) ***	0.072	-3.07 (0.118) ***	0.046
24-29	-1.228 (0.09) ***	0.293	-1.738 (0.086) ***	0.176
30-34	-0.319 (0.093) ***	0.727	-0.7566 (0.077) ***	0.469
35-39	-0.101 (0.091)	0.904	-0.309(0.073) ***	0.734
40-45	-0.097 (0.091)	0.907	-0.172 (0.074) **	0.842
Location (Rural)	0.704		32.679***	
Urban	-0.045 (0.054)	0.956	-0.286 (0.05) ***	0.751
Highest education (Higher secondary and above)	97.888***		126.852***	
No Education	0.152 (0.24)	1.164	0.574(0.218) ***	1.775
Primary	0.319 (0.149) **	1.376	0.653 (0.130) ***	1.921
Secondary	0.58 (0.06) ***	1.787	0.655 (0.058) ***	1.925
Religion (Christian and others)	47.717***		24.287***	
Hindu	0.111 (0.069)	1.118	0.04 (0.066)	1.042
Muslim	0.514 (0.083) ***	1.672	-0.247 (0.076) ***	0.781
Ethnicity (No Caste/No Tribe/Do not Know)	6.267**		1.704	
Other Castes	0.161 (0.132)	1.175	-0.15 (0.118)	0.861
Scheduled Tribe	0.848 (0.341) **	2.331	-0.223 (0.286)	0.8
Knowledge of any method (Knows modern method)	000		000	
Knows no modern methods	-20.79 (3047.86)	0	-19.889 (3033.248)	0
Constant	1.019 (0.16) ***	2.769	0.7425 (0.144) ***	2.101

(Source: Author's interpretations from NFHS-5 datasheet)
Note: - *** indicates P<0.01, ** indicates P<0.05, * indicates P<0.1, no asterisks indicate insignificant parameter/variable

As stated earlier, the problem of awareness may not be severe in Kerala; however, over 39% of the people who were aware of modern contraceptives did not use any form of contraceptive (traditional or modern). Moreover, people preferred sterilisation as their modern contraceptive (see Table 4 in the supplementary file), and very few used other contraceptives, such as condoms, which shows the weakness of Kerala's public health delivery.

The binary logistic regression was conducted on the variables 'ever using any contraceptive,' and 'current use of modern contraceptive.' The variable 'Wealth Quintile' was significant in both regressions, with the odds of ever using any contraceptive and current use of modern contraceptives increasing with wealth. While referring to the table on current contraceptive use (see Tables 4 & 5 in the supplementary file), sterilisation is used relatively less by the wealthy, and they use other contraceptives such as condoms and IUDs more than the poor and middle class. Studies claim that women with higher wealth can obtain contraceptives because they can afford the costs of buying modern contraceptives (other than sterilisation) and other associated costs such as travel costs.[21,22]

The age group was also significant in both regressions, with older people using modern contraceptives more than younger people, which was supported by national-level studies on contraceptive use[8,11] and contradicted similar studies conducted in underdeveloped countries.[22] The higher use of modern contraceptives among older adults is inflated because 92% of the respondents who are currently using some kind of contraceptive from the age of 44-49 use sterilization, which is reflective of the national trend [20]. The use of temporary methods of contraception was the lowest among older adults aged 35-49, and the highest among adults aged 20-34. On the other hand, sterilizations are permanent method of contraception, which the younger adults do not prefer much as they are still in their reproductive age, this was validated in longitudinal studies conducted on previous rounds of NFHS.[23] Despite being relatively higher than older adults, the use of modern methods of contraceptives, except sterilisation, among young adults aged 15-29 years was 4.3%, and in the same age group, the percentage of non-users of any method was 85%, showing high reluctance to use them. Studies have claimed that this may be due

to financial constraints, social insecurities caused by societal norms, and misconceptions regarding contraceptives.[20,24] The social acceptability of modern contraceptives can be built through public policy, community, and political engagement, as evidenced by the recent initiatives in Andhra Pradesh, which include contraceptives in political campaigns, and the involvement of social and religious figures would help convince people to use modern contraceptives.[24,25]

Similar to the age of the respondents, the education of the respondents in Kerala is a significant variable in both regressions, but contrary to other studies, the odds of using contraceptives (modern or any) is lower among people with higher secondary education or more.[8,14,22] However, modern contraceptive users with primary and secondary education predominantly use sterilisation rather than temporary contraceptives, and the use of temporary/reversible contraceptives is higher among the higher educated respondents, which was corroborated by a pooled data study on sterilisation in India.[23] Awareness of modern contraception is also higher among the highly educated; thus, it can be inferred that the highly educated are more aware of modern contraceptives and are more likely to use them, which is supported by Ewerling et al.[11] An interesting result was found in the rural-urban differences in the current use of modern contraceptives in Kerala. The odds of using modern contraceptives were higher in rural areas than in urban areas. While looking a step Furthermore, 87% of the current users of modern contraceptives in rural areas use sterilisation compared with 73% of urban users, which is reflective of national-level studies.[23] However, there were no significant rural-urban differences in the use of any method of contraception ever, indicating that people have used contraceptives (traditional/modern) at least once, irrespective of the location of their house, which is consistent with the findings of Adebowale et al.[22] These studies suggest that a lack of accessibility to services, awareness, and differences in fertility preferences are the driving factors for people living in rural areas to use sterilisation.[21–23] In an attempt to solve the inaccessibility of modern contraceptives, the government of Kerala started providing them through family health centres at an affordable rate.[26] However, Keralites are mostly unaware of this, and they largely prefer private tertiary hospitals to public primary health facilities.[27]

Religion is also significant in both regressions, where Muslims in Kerala have higher odds of using contraceptives (traditional/modern), but their odds of using modern contraception are low, indicating that they prefer traditional contraceptives to modern alternatives. Corroborating the results of regression, the current use of contraception revealed that Muslim women have the lowest rate of sterilisation as well as a relatively higher use of traditional contraceptives, such as periodic abstinence, withdrawal, and LAM; similar findings were reported by national and international studies on modern contraceptive use.[8,21] Singh et al. claimed that the cultural barriers associated with Islam might be the reason for the low rates of sterilisation among women since it is frowned upon in Islam.[23] The ethnicity is significant predictor in the 'ever use any contraceptive,' but insignificant in 'current use of modern contraceptive.' The odds of Scheduled Tribes (ST) using any type of contraceptive are higher than those of other castes, but the odds of using modern contraceptives, though insignificant, are still less than those of other ethnic categories [the insignificance is likely due to the lower sample proportion for tribes compared to other castes (N=94)]. The use of any kind of contraceptive is higher among tribals, as the use of traditional methods of family planning, such as periodic abstinence and withdrawal, is more prevalent.[28] Like other castes, sterilisation is the most popular method of modern contraception currently used among tribals, but the use of temporary/reversible contraceptives is much lower than that of others, with only 2.2% of the respondents from the tribal category using them. Similar findings have been reported by studies conducted at the national level.[10,23] Studies have provided several reasons for tribal reluctance to use reversible contraception over traditional methods and sterilisation, such as lack of awareness and education about contraception, misconceptions due to a lack of trust in modern medicine, lack of accessibility to contraceptives, and financial barriers.[10,16,28,29]

Strengths and Limitations

The NFHS data provide a representative sample of the state of Kerala, which helps generalise the findings to the population. To the best of our knowledge, no other studies have used the fifth round of the NFHS datasheet to investigate the gaps in the knowledge and awareness of modern contraception among Keralites. Despite these strengths, potential weaknesses involving the use of secondary data should be acknowledged, as there were limitations in selecting the indicators. Future research on this topic should further analyse the patterns of contraceptive use over the years, and how to overcome the potential gaps in the system. This study focused only on overall contraceptive use patterns in Kerala, and further research on different ethnic/age/wealth groups would provide valuable insights for addressing the shortcomings of contraceptive use.

Conclusion and Policy Recommendations

This study investigated the knowledge and use of contraceptives among people in Kerala. Keralites are highly aware of modern contraceptives, but over 50% do not use any methods of contraception. The use of modern contraception in Kerala was higher among the wealthy compared to the poor, secondary,

and primary educated compared to respondents with more than secondary education, older adults compared to younger adults, Hindus and Christians compared to Muslims, and people living in rural areas compared to urban areas. Aside from the variable wealth, all other variables' use of modern contraceptives were inflated by sterilisation. Sterilisation is preferred by people because they are more financially and physically accessible to them compared to other contraceptives, and the social insecurities in purchasing reversible contraception also prevent people from using it. However, sterilisation is effective only in preventing pregnancies and not in controlling sexually transmitted diseases. The reluctance in the use of reversible contraceptives such as condoms will thereby increase the risk of STDs such as chlamydia, syphilis, and HIV. Thus, their promotion would help to control the latter.

This study suggests certain policy recommendations to promote modern reversible contraceptives. Reluctance to use reversible contraception stemming from social insecurity can be prevented through government and community interventions. The government can create advertisements, public-service announcements, and election campaigns using condoms, as in Andhra Pradesh. Community engagement revolves around the involvement of social and religious figures in promoting modern contraceptives.[24,25]

The government of Kerala has started distributing reversible contraceptives at Family Health Centers (erstwhile Primary Health Centers) to resolve the financial and physical inaccessibility of reversible contraceptives, but the utilisation of family health centre (FHC) services is suboptimal. Therefore, the government should create more visibility for FHC services through decentralised campaigns and advertisements to promote its services.[26,27]

The lack of awareness and cultural barriers among tribes, the less educated, and older adults can be overcome by providing training and awareness classes to educate them about STDs and reduce misconceptions about temporary contraception. The awareness classes should be conducted by trained professionals at the local level.[20,24,29]

Acknowledgement

The premium version of Paperpal was used for proofreading, and the authors acknowledge its contributions. The authors thank their peers, family, and friends for their valuable suggestions and support.

Data Availability Statement

The secondary data for this study were taken from the demographic and health surveys after obtaining prior approval from the latter. The reader can access the data by visiting the link: https://dhsprogram.com/Data/terms-of-use.cfm.

References

1. Nair PS. Understanding Below-replacement Fertility in Kerala, India. J Health Popul Nutr [Internet]. 2010 [cited 2024 Apr 15];28(4):405. Available from: /pmc/articles/PMC2965333/
2. Sreenivasan K. Population Policies and Family Planning Programmes in India : a. International Institute of Population Sciences (IIPS) [Internet]. 2006;1–39. Available from: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=dbe4b9f209cd170a31c10d739b568eafe90108a0
3. International Institute for Population Sciences (IIPS) and ICF, Ministry of Health and Family Welfare. National Family Health Survey (NFHS-4) Factsheet. 2016.
4. Nair A. Sex and the State. The New Indian Express [Internet]. 2024;1. Available from: https://www.newindianexpress.com/cities/kochi/2024/Mar/25/sex-and-the-state#:~:text=KOCHI : Kerala is witnessing a worrying,marked increase from 15%2C296 in the previous
5. Thulaseedharan JV. Contraceptive use and preferences of young married women in Kerala, India. Open Access J Contracept [Internet]. 2018 Jan [cited 2024 Apr 15];9:1. Available from: /pmc/articles/PMC5804019/
6. Pruitt SL, von Sternberg K, Velasquez MM, Mullen PD. Condom Use among Sterilized and Non-sterilized Women in County Jail and Residential Treatment Centers. Womens Health Issues [Internet]. 2010 Nov [cited 2024 Apr 15];20(6):386. Available from: /pmc/articles/PMC3068599/
7. International Institute for Population Sciences (IIPS) and ICF. National family health survey(NFHS-5) India 2019-21 [Internet]. Vol. Volume I, Demographic and health surveys. 2021. Available from: https://dhsprogram.com/methodology/survey/survey-display-541.cfm
8. Ram F, Shekhar C, Chowdhury B. Use of traditional contraceptive methods in India & its sociodemographic determinants. Indian J Med Res. 2014;140(November):17–28.
9. Namasivayam V, Dehury B, Prakash R, Becker M, Anand P, Mishra A, et al. Understanding the rise in traditional contraceptive methods use in Uttar Pradesh, India. Reprod Health [Internet]. 2023 Dec 1 [cited 2024 Apr 15];20(1):1–14.
10. Panda SN, Barik M, Acharya AS, Kanungo S, Pati S. Spatial distribution and factors influencing modern contraceptive practice among tribal married women in India: evidence from National Family Health Survey 5 (2019–2021). BMC Womens Health [Internet]. 2023 Dec 1 [cited 2024 Apr 10];23(1):1–11.
11. Ewerling F, McDougal L, Raj A, Ferreira LZ, Blumenberg C, Parmar D, et al. Modern contraceptive use among women in need of family planning in India: an analysis of the inequalities related to the mix of methods used. Reprod Health [Internet]. 2021;18(1):1–12. Doi: 10.1186/s12978-021-01220-w
12. Kothari C. Research Methodology. 2nd ed. New Delhi: New Age International; 2004. 414 p.
13. Harris JK. Primer on binary logistic regression. Fam Med Community Heal [Internet]. 2021 Dec 23 [cited 2024 Apr 15];9(Suppl 1):1290.
14. Rattan S, Kalia M, Rohilla R, Grover PK, Dandona S, Sharma MK, et al. Contraceptive awareness and practices in reproductive age couples: A study from urban slums of Punjab. J Fam Med Prim Care 2022;11(7):3654.
15. Narzary PK. Knowledge and Use of Contraception among Currently Married Adolescent Women in India. Stud Home Community Sci 2009;3(1):43–9. Doi:

10.1080/09737189.2009.11885275

16. George MS, Davey R, Mohanty I, Upton P. "Everything is provided free, but they are still hesitant to access healthcare services": why does the indigenous community in Attapadi, Kerala continue to experience poor access to healthcare? Int J Equity Health. 2020 Jun 26;19(1).
17. Podder D, Dasgupta A, Dobe M, Paul B, Bandyopadhyay L, Pal A. Health Care Seeking Behavior in a Scheduled Tribe Community in India: A Mixed Methods Research Using the Framework of Andersen's Behavioral Model. Asia-Pacific J Public Heal. 2021;33(4):369–77.
18. Sámano R, Martínez-Rojano H, Chico-Barba G, Sánchez-Jiménez B, Sam-Soto S, Rodríguez-Ventura AL, et al. Sociodemographic Factors Associated with the Knowledge and Use of Birth Control Methods in Adolescents before and after Pregnancy. Int J Environ Res Public Health [Internet]. 2019 Mar 2 [cited 2024 Apr 10];16(6):1022.
19. Devaru JS, Jabeen B, Puttaswmy M. A Study on Knowledge, Attitude and Practice Regarding Family Planning Methods among Women Residing in Peri-Urban Area of Bangalore City. Natl J Community Med. 2020;11(2):80–6.
20. Ghule M, Raj A, Palaye P, Dasgupta A, Nair S, Battala M, et al. Barriers to use contraceptive methods among rural young married couples in Maharashtra, India: Qualitative findings. HHS Public Access. 2018;5(6).
21. Budu E, Dadzie LK, Salihu T, Ahinkorah BO, Ameyaw EK, Aboagye RG, et al. Socioeconomic inequalities in modern contraceptive use among women in Benin: a decomposition analysis. BMC Womens Health. 2023;23(1):1–11.
22. Adebowale SA, Adedini SA, Ibisomi LD, Palamuleni ME. Differential effect of wealth quintile on modern contraceptive use and fertility: Evidence from Malawian women. BMC Womens Health [Internet]. 2014 Mar 7 [cited 2024 Apr 11];14(1):1–13.
23. Singh P, Singh KK, Singh P. Factors explaining the dominion status of female sterilization in India over the past two decades (1992-2016): A multilevel study. PLoS One [Internet]. 2021;16(3 March):1–18.
24. Dioubaté N, Manet H, Bangoura C, Sidibé S, Kouyaté M, Kolie D, et al. Barriers to Contraceptive Use Among Urban Adolescents and Youth in Conakry, in 2019, Guinea. Front Glob Women's Heal. 2021;2(July):1–11.
25. News Desk. Lok Sabha campaign heats up in Andhra Pradesh as condoms with YSRCP, TDP symbols go viral | India News - Times of India. Times of India [Internet]. 2024 Feb 22 [cited 2024 Apr 14];1. Available from: https://timesofindia.indiatimes.com/india/lok-sabha-campaign-heats-up-in-andhra-pradesh-as-condoms-with-ysrcp-tdp-symbols-go-viral/articleshow/107919980.cms
26. Krishnan A, Varma RP, Kamala R, Anju R, Vijayakumar K, Sadanandan R, et al. Re-engineering primary healthcare in Kerala. Public Heal Action [Internet]. 2023 [cited 2024 Jan 27];13(1):19–25. DOI: 10.5588/pha.22.0033
27. Nair MR, Varma RP. Availability, Distribution and Utilisation of Health Care Services in Kerala [Internet]. 2021. Available from: https://spb.kerala.gov.in/sites/default/files/inline-files/AvailDistribUtilisationHSKerala.pdf
28. Prusty RK. Use of contraceptives and unmet need for family planning among tribal women in India and selected hilly states. J Heal Popul Nutr. 2014;32(2):342–55.
29. Kumar V, Nagar AK, Meena V, Jain M, Dubey DK, Shukla US. Knowledge, attitude and practices regarding family planning among the currently married men in a rural area of Jhalawar district, Rajasthan. Natl J Community Med. 2018;9(11):803–8.