

# **AWARENESS AND USE OF FAMILY PLANNING METHODS AMONG THE REPRODUCTIVE AGE GROUP OF BODO WOMEN IN NORTH GUWAHATI, ASSAM, INDIA**

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## **ABSTRACT**

India varies greatly not just in geography but also in economy, culture, tradition, and attitudes. It is, therefore, important to identify which cultural factors influence the acceptance of family planning methods (FPM) in specific communities and how. The present paper is an attempt to understand the awareness and use of family planning methods among the Bodo women belonging to the reproductive age group in the North Guwahati area. Additionally, the study seeks to determine how socioeconomic and reproductive factors affect the adoption or non-use of FPM.

A cross-sectional study was done among the reproductive age groups of Bodo women in the North Guwahati area of the Kamrup rural district in Assam. The sample size was 303. The data were collected with the help of a structured schedule.

The majority of women are aware of family planning methods. The share of women who use FPM is higher than that of non-users. Among the different types of FPM used, the permanent method (tubectomy) is highly accepted by them, and among the temporary methods, the male condom is the most common. The main reason for the adoption of FPM is to limit family size. The main reason for the non-adaptation of FPM is a desire to have more children.

The findings showed that age, income, and parity were significantly associated with the use of family planning methods. The higher the age, the higher the use of FPM. Women from high-income families were found to use FPM more often. On the other hand, women with no children or a single child were found not to use FPM.

**Keywords:** *family planning methods; reproductive age group; Bodo women; North Guwahati; Assam*

## INTRODUCTION

Family planning is defined by the WHO as “a way of thinking and living that is adopted voluntarily, upon the basis of knowledge, attitudes and responsible decisions by individuals and couples, in order to promote the health and welfare of family groups and thus contribute effectively to the social development of a country”. In 1952, India established its unique state-sponsored family planning programme, making it the world’s first country to implement population control methods [13]. Family planning services can improve the mother’s health, which contributes to the family’s social and economic well-being. In addition, high parity has a negative impact on both maternal and infant health in terms of nutritional issues, and it can even result in mortality [16, 24, 18], which can be avoided by family planning services.

India is the world’s most populous country [26], and therefore, family planning is more important and necessary in India than in other countries. Family planning methods (FPM) are recognized worldwide as the best way to reduce the population growth rate [4]. India varies greatly not just in geography but also in economy, culture, tradition, and attitudes [6]. The northeast states of India have an incredible ethnic diversity and also encompass large differences in their demographic situation, socioeconomic and cultural conditions [3]. Thus, the awareness and use of FPM by different communities are very important for achieving this goal.

According to the 2011 census, India’s tribal people constituted 8.6% percent of the total population. The north-eastern states account for approximately 25.8% of the tribal population from 145 indigenous communities [20]. Among tribal communities, the use of contraception is regarded a personal concern, and it is very difficult for them to move beyond the family limits when it comes to modern contraception [19, 15]. Previous research has also shown that, among tribes, the major reasons for not utilizing contraception include fear of side effects, lack of education, phobia of adverse health outcomes, religion, and past experiences [14, 10]. According to NFHS-5 (2019–2021) [9], knowledge about family planning methods among the married women of Assam is 99.9%. The data also show that, despite having good knowledge about family planning methods, women in Assam with different background characteristics have a lower percentage of using FPM. The data also reveal that the use of any FPM is higher among the married women of the Kamrup metropolitan area (56.8%) in comparison to the married women of the greater Kamrup district (38.7%). There are still several barriers to the use of contraceptives, particularly among women who frequently experience challenges in acquiring them. It is

crucial to learn about the elements that influence family planning acceptance in specific communities so that appropriate programmes could be developed for them. Thus, the current study focuses on the awareness and practice of family planning methods among the Bodo women of the reproductive age group in North Guwahati. The study also aims to know the effect of socioeconomic and reproductive variables on the use and non-use of family planning methods.

## **MATERIALS AND METHODS**

This is a cross-sectional study of adult Bodo women living in the North Guwahati area of the Kamrup rural district of Assam, India. The data were obtained between January 2021 to December 2021. Participants' consent was asked prior to the data collection. Those who had agreed to participate and were in the reproductive age group (18–45 years) were included in the study. The sample size was estimated using a sample size calculator with a 95% confidence level and a  $\pm 5\%$  margin. The result of the sample size calculation was 358. From the 358 women, women aged 18–45 year were chosen, obtaining a sample size of 303.

To collect socioeconomic and reproductive data, a structured schedule was adopted [23]. The socioeconomic factors were age, education, occupation, monthly income, and family type. The reproductive characteristics included the age at marriage, age at first conception and parity. The data related to the practice of family planning methods were also collected with the help of a structured interview schedule.

All statistical analyses were carried out using SPSS software (version 26). Chi-square was used to analyse the association between practice, types and reason for adaption or non-adaption of FPM and other socioeconomic and reproductive characteristics. Logistic regression analysis was done to understand the effect of age, education, income and parity on the practice and types of FPM. For binary logistic regression analysis, socioeconomic and reproductive variables were taken as independent variables, and practice of FPM, types of FPM as the dependent variables with the odds ratio (OR) and 95% confidence interval (CI). For binary logistic regression analysis, dependent variables were categorised into two variables (0 and 1) and the variables with more than two categories were summed up into two.

## RESULTS

Awareness of and barriers to using family planning methods among adult Bodo women are shown in Table 1. The study shows that awareness of FPM among the reproductive age group of adult Bodo women in the North Guwahati area of the Kamrup rural district of Assam, India, is high (98.35%). Although awareness is high, the use of FPM is relatively lower (63.37%). The number of FPM users is lower in the younger age groups, and the number of users increases with an increase of age.

Among the various FPM, the permanent method (tubectomy) is the most popular (56.25%), and its frequency clearly increases with age. Condoms are the most commonly used temporary FPM (18.75%). The most common reason for women to use FPM was to limit their family size (76.04%). In the vast majority of the cases (98.96%), the decision relating to the use of FPM is taken by the couple. However, there are few cases (1.04%) where only the woman has decided to use FPM (Table 1).

As previously mentioned, some women do not use FPM. The reasons why women do not use FPM are desire to have more children, lack of faith in contraception, fear of side effects and lack of information. The most common reason for non-adaption of FPM is the urge for more children (65.77%). 7.21% of women did not explain why they were unable to adapt to FPM. Lack of awareness as a barrier to FPM adaptation is only evident among women aged 36–45 years. Lack of faith in contraceptives as a barrier to FPM adaption was only observed among the women of the 26–35 years and 36–45 years age categories. There is a statistically significant variation by age groups in the use, types, and reasons for adapting FPM (Table 1).

The use of FPM differs significantly depending on the monthly income of the family and parity. Women from high-income families are more likely to use FPM. The number of surviving children has a significant influence on FPM usage. Women with two children are the most likely to use FPM, while those with one child do not use FPM (Table 2).

There is a statistically significant difference between different FPM used according to educational status, monthly family income, and parity. In terms of educational status, the women with a High School Leaving Certificate have the highest frequency of using different FPM. Most users of FPM are homemakers and women from households with a monthly income of  $\geq 7008$  rupees. The highest percentage of FPM users are women with two children. Among the various FPM, the use of oral pills is equally distributed among both income classes.

Condoms are most commonly used by low-income families, whereas copper T is more commonly used by high-income families. The use of tubectomy as an FPM is high among the reproductive age group of Bodo women in the study area irrespective of the category of family income (Table 3).

There is no statistically significant difference between the reasons for adaption and barriers to using FPM according to socioeconomic and reproductive characteristics.

Binary logistic regression shows that women aged 26–35 years are 2.224 times more likely to use FPM than women aged 18–25 years. Women aged 36–45 years are 2.690 times more likely to use FPM than women aged 18–25 years. Women from high-income families ( $\geq 7008$  rupees) show 0.526 times greater likelihood of using FPM. As far as parity is concerned, women with two or more children are 2.045 times more likely to use FPM. The use of FPM is significantly influenced by age, income and parity. When binary logistic regression is examined to see the influence of socioeconomic characteristics on types of FPM, it is found that women aged 26–35 years (6.826 times) and 36–45 years (8.678 times) are more likely to use tubectomy as FPM. Women with two or more children are 2.211 times more likely to use tubectomy as FPM compared to women with one or no children. The types of FPM are significantly influenced by age and parity, while education and income do not show a significant influence on the types of FPM.

Table 1. Awareness and use of and barriers to family planning methods

Are you aware of FPM	Number= 303(%)	18–25(63)	26–35(134)	36–45(106)	Chi²
Yes	298(98.35%)	63(100%)	134(100%)	101(95.28%)	–
No	5(1.65%)	–	–	5(4.72%)	
Have you ever used FPM					
Yes	192(63.37%)	26(41.27%)	89(66.42%)	77(72.64%)	0.0001*(17.71)
No	111(36.63%)	37(58.73%)	45(33.58%)	29(27.36%)	
Type of FPM used	Number= (192%)	18–25(26)	26–35(89)	36–45(77)	
Not specified	10(5.21%)	1(3.85%)	3(3.37%)	6(7.79%)	0.0001*(30.29)
Oral pill	24(12.50%)	6(23.08%)	13(14.61%)	5(6.49%)	
Condom	36(18.75%)	9(34.62%)	15(16.85%)	12(15.58%)	
Copper T	14(7.29%)	6(23.08%)	5(5.62%)	3(3.90%)	
Tubectomy	108(56.25%)	4(15.38%)	53(59.55%)	51(66.23%)	
Reason for adaption of FPM					
To limit family size	146(76.04%)	7(26.92%)	69(77.53%)	70(90.91%)	<0.00001*(29.83)
For effective child-rearing/ spacing	27(14.06%)	10(38.46%)	11(12.36%)	6(7.79%)	
For the health of mother	7(3.65%)	1(3.85%)	5(5.62%)	1(1.30%)	
Newly married	12(6.25%)	8(30.77%)	4(4.49%)	–	
Decision-making for the adaptation of FPM					
Couple	190(98.96%)	26(100%)	88(98.88%)	76(98.70%)	–
Wife	2(1.04%)	–	1(1.12%)	1(1.30%)	
Barriers to using of FPM	Number= 111(%)	18–25(37)	26–35(45)	36–45(29)	
Fear of side effects	8(7.21%)	1(2.70%)	5(11.11%)	2(6.90%)	–
Lack of awareness	5(4.50%)	–	–	5(17.24%)	
Desire for more children	73(65.77%)	36(97.30%)	30(66.67%)	7(24.14%)	
Lack of faith in contraceptive	17(15.32%)	–	8(17.78%)	9(31.03%)	
Others	8(7.21%)	–	2(4.44%)	6(20.69%)	

**Table 2.** Use of family planning methods by socioeconomic and reproductive characteristics

Education	Number=303(%)	Practice of FPM		Chi²
		Yes (192)	No (111)	
Illiterate	9(2.97%)	7(3.65%)	2(1.80%)	0.65(0.84)
HSLC	250(82.51%)	157(81.77%)	93(83.78%)	
HS and above	44(14.52%)	28(14.58%)	16(14.41%)	
Occupation				
Homemakers	272(89.77%)	170(88.54%)	102(91.89%)	0.35(0.85)
Economically engaged	31(10.23%)	22(11.46%)	9(8.11%)	
Monthly income				
3504–7007	128(42.24%)	93(48.44%)	35(31.53%)	0.004*(8.23)
≥7008	175(57.76%)	99(51.56%)	76(68.47%)	
Family types				
Nuclear	163(53.80%)	102(53.13%)	61(54.95%)	0.75(0.09)
Joint	140(46.20%)	90(46.88%)	50(45.05%)	
Age at marriage				
<18	21(6.93%)	13(6.77%)	8(7.21%)	0.71(0.67)
18–22	234(77.23%)	151(78.65%)	83(74.77%)	
≥23	48(15.84%)	28(14.58%)	20(18.02%)	
Age at first conception				
<18	2(0.66%)	2(1.05%)	–	–
18–22	219(72.28%)	145(75.52%)	74(66.67%)	
≥23	70(23.10%)	33(17.18%)	37(33.33%)	
Not conceived	12(3.96%)	12(6.25%)	–	
Parity				
0	28(9.24%)	12(6.25%)	16(14.41%)	0.0002*(19.58)
1	96(31.68%)	49(25.52%)	47(42.34%)	
2	169(55.78%)	125(65.10%)	44(39.64%)	
3	10(3.30%)	6(3.13%)	4(3.60%)	

\*p < 0.05

**Table 3.** Family planning methods used according to socioeconomic and reproductive characteristics

Education	Number=192(%)	FPM					Chi²
		Not specified (10)	Oral pill (24)	Condom (36)	Copper T (14)	Tubectomy (108)	
Illiterate	7	–	1(4.17%)	2(5.56%)	–	4(3.70%)	<0.00001*(100.98)
HSLC	157	8(80%)	18(75%)	30(83.33%)	11(78.57%)	90(83.33%)	
HS and above	28	2(20%)	5(20.83%)	4(11.11%)	3(21.43%)	14(12.69%)	
Occupation							
Homemakers	170	10(100%)	21(87.50%)	30(83.33%)	12(85.71%)	97(89.81%)	0.766(1.14)
Economically engaged	22	–	3(12.50%)	6(16.67%)	2(14.29%)	11(10.19%)	
Monthly Income							0.014*(12.38)
3504–7007	93	2(20%)	12(50%)	22(61.11%)	2(14.29%)	55(50.93%)	
>7008	99	8(80%)	12(50%)	14(38.89%)	12(85.71%)	53(49.07%)	
Family types							
Nuclear	102	4(40%)	13(54.17%)	17(47.22%)	7(50%)	61(56.48%)	0.781(1.74)
Joint	90	6(60%)	11(45.83%)	19(52.78%)	7(50%)	47(43.52%)	
Age at marriage							0.324(4.65)
<18	13	2(20%)	2(8.33%)	5(13.89%)	–	4(3.70%)	
18–22	151	6(60%)	16(66.67%)	25(69.44%)	11(78.57%)	93(86.11%)	
≥23	28	2(20%)	6(25%)	6(16.67%)	3(21.43%)	11(10.19%)	
Age at first conception							–
<18	2	–	1(4.17%)	1(2.78%)	–	–	
18–22	145	6(60%)	14(58.33%)	23(63.88%)	9(64.28%)	93(86.11%)	
≥23	33	3(30%)	8(33.33%)	2(5.56%)	5(35.72%)	15(13.89%)	
Not conceived	12	1(10%)	1(4.17%)	10(27.78%)	–	–	
Parity							0.0001*(31.04)
0	12	1(10%)	4(16.67%)	1(2.78%)	4(28.57%)	2(1.85%)	
1	49	4(40%)	5(20.83%)	16(44.44%)	2(14.29%)	22(20.37%)	
2	125	4(40%)	13(54.17%)	19(52.78%)	7(50%)	82(75.93%)	
≥3	6	1(10%)	2(8.33%)	–	1(7.14%)	2(1.85%)	

\*p&lt;0.05



**Table 4.** Binary logistic regression odds ratio (95% confidence interval) of use and methods of family planning according to age, education, income and parity

Use of FPM			
Age groups (years)	Exp(B)	Adjusted OR (CI 95%)	p value
18–25	Ref	1	
26–35	2.224	1.159–4.270	0.016
36–45	2.690	1.316–5.501	0.007
Income			
< 7008	Ref	1	
≥ 7008	0.526	0.315–0.878	0.014
Parity			
0–1	Ref	1	
≥ 2	2.045	1.208–3.460	0.008
Types of FPM			
Age groups (years)			
18–25	Ref	1	
26–35	6.826	2.127–21.903	0.001
36–45	8.678	2.634–28.592	0.000
Education			
Illiterate	Ref	1	
Up to HSLC	1.379	0.265–7.166	0.702
HS and above	0.937	0.155–5.644	0.943
Income			
< 7008	Ref	1	
≥ 7008	0.905	0.482–1.701	0.758
Parity			
0–1	Ref	1	
≥ 2	2.211	1.114–4.388	0.023

## DISCUSSION

The current study provided a brief overview of the awareness and use of family planning practices among Bodo women of the reproductive age group. For comparative analysis, the findings of the present study are compared with findings from similar studies. In a study by Bharali et al. (2016) among both tribal and non-tribal women of the Kamrup district, awareness was found to be higher among the non-tribal women (90.6% among tribal and 94% among non-tribal) [2]. Among the women in the present study, most women were aware of family planning methods, similarly to a study (98%) by Medhi & Saikia (2019) [12]. In terms of awareness, the findings of the current study were found to be similar to the National Family Health Survey (NFHS-5, 2019–21) Assam findings [9]. Among the Bodo women of the North Guwahati area, awareness of FPM was found to be higher compared to the Karbi women of Guwahati (45%) [11] and slightly higher than Boro Kachari women of Goalpara district (96%) [7]. In women from the Tea Garden areas under Dholai Block Primary Health Centre, Cachar District, awareness was found to be much lower (49%) [5]. Hazarika (2021), in his study of Singpho women of Arunachal Pradesh, found awareness to be 76.2%, which is lower than in the present study [8]. Similarly, a study of women from the Hatta area, Imphal, found awareness to be relatively lower (52.5%) [21]. A study of women patients at the Obstetrics and Gynaecology Department of the Sir Thutob Namgyal Memorial Hospital and the Central Referral Hospital in Gangtok found awareness to be 94.2% [22]. Barman et al. (2021), in their study of women patients at the Department of Obstetrics and Gynaecology of Fakhruddin Ali Ahmed Medical College and Hospital, Assam, found awareness to be 92% [1], while the awareness of women at the Obstetrics and Gynaecology Outpatient Department and the Emergency Department of the North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences was 82.5% [24]. Hospital-based studies have shown less FPM-related knowledge than the Bodo women of the present study.

Despite being aware of many family planning methods, 36.63% of women do not use them for varying reasons. However, among the currently researched women, FPM users outnumber non-users, implying that they are both aware of and use FPM. The current findings are consistent with previous studies [22, 2, 7, 12, 1] in which FPM users are more frequent than non-users. However, some other research reveals that the frequency of FPM non-users is higher than that of users (non-users 60.2%, Mazumder and Mukherjee 2018 [11]; non-users 54.10%, Chutia and Barman 2020 [5]; non-users 62.97%, Shullai et al. 2023 [24]). Regarding the age categories, the younger age group (18–29 years) had

the highest percentage of FPM non-users, which is consistent with previous surveys [5]. According to Bharali et al. (2016), non-users are more common among people aged 36–40 years (tribal 28.09%) and 41–45 years (non-tribal 29.73%) [2], indicating a conclusion opposite to the current study. On the other side, the majority of FPM users are between the ages of 30–45 years. As per NFHS-5 (2019–21), the 30–39 year range also has the highest proportion of FPM users (71.8%) [9].

Tubectomy is the most popular type of FPM among the current study population, while condoms are the most commonly used temporary FPM. In various earlier studies, the practice of tubectomy was found to be lower (5.43%, Gogoi 2018 [7]; 27%, Renjhen 2008 [22]; 17.6%, Medhi and Saikia 2019 [12]; 5.5%, Barman et al. 2021 [1]) than in the present study. Male condoms are the more commonly used temporary FPM (18.75%) than oral contraceptive pills (OCP) (12.50%) among the women in the present study. However, in some studies, the use of OCP is higher than the use of male condoms (OCP 37.9%, condom 31%, Renjhen 2008 [22]; OCP 42.4%, condom 21.73%, Gogoi 2018 [7]; OCP 47.1%, condom 21.6%, Medhi and Saikia 2019 [12]; OCP 73.3%, condom 20%, Chutia and Barman 2020 [5]; OCP 39%, condom 6%, Barman et al. 2021 [1]).

In the current study, the primary reason for FPM adaptation is limiting the size of the family, followed by proper childcare. The result has similarities with a previous study by Gogoi [7]. The main motive for adapting FPM among scheduled caste women from NFHS-4, Assam, was avoiding unwanted birth (35.3%) and spacing (35.3%). Couple-based decision-making on family planning is more prevalent among the study population compared to scheduled caste women from NFHS-4, Assam (32.8%) [12].

However, in the current study, the main cause for FPM non-adaption is the urge for additional children, followed by a lack of faith in contraceptive treatments. The ideal family size and effective child raising [7], lack of knowledge [11], and the urge for more children [22, 12] are the primary reasons for not using FPM in other research as well.

The current study demonstrates that FPM practice is associated with age, family monthly income, and parity status. Other studies have also shown a similar association between the use of FPM and age and occupation [8, 2, 12, 5]. Education of the women was found to have an influence on the use of FPM in some studies, but in the present study, the level of education did not appear to have an influence. In the present study, monthly family income and parity influenced the use of FPM among the Bodo women of North Guwahati area.

## CONCLUSION

The current study demonstrates that awareness regarding different family planning methods is very high, and so the percentage of users of family planning methods is higher than that of non-users. The most common reason behind the non-adoption of family planning methods is the desire to have more children. Desire for more children appears to be higher among the younger age group of women who have not been married for long time and, consequently, the use of FPM is lower among them. Women employ family planning methods to achieve their preferred family size. They are particularly concerned about the size of their family, which is a crucial aspect of community development. According to the current findings, people use a variety of family planning methods and prefer the permanent method (tubectomy) most. However, women who lack information and faith in contraceptive methods have also been identified, which makes it vital to educate them about safety and reliability of various options of FPM. The use of vasectomy, on the other hand, is not common among them; this can be identified as a crucial dimension that needs to be explored.

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## CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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