

Level of Contraceptives Use: A Case Study of Assam (India)

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Abstract: *India's population has already reached 1.26 billion and considering the present growth rate, by 2028, the country's population will be more than China, according to a recent report from the UN. Though, the report has clearly mentioned that the rate of population growth has slowed down in recent years, due to effective implementation of family planning and family welfare programmes, yet the rate is growing at a much faster rate compared to China. The national fertility rate is still high which is leading to long-term population growth in India. This predicament led us to study the use of contraceptive methods at the district level one of the eastern State of India. Use of contraceptive is an important factor to control fertility and population growth as well. Here an attempt is made to find out such methods, which are popularly use by the couples. The methods like sterilization, IUD, Oral Pill, Condom and others are readily available methods, which have brought a marked benefit to the user. At state level, out of total sterilization/tubectomy, 94 percent was performed on female for contraception during 2019-20 as per the HMIS results. In Assam, out of total sterilization about 7 percent male sterilization was done during 2019-20. The user ship of temporary methods like IUCD and OP etc. gradually increased in the state, especially IUCD ranked the top in this regard. In Assam, the percent change of the user ship of female sterilization, PP IUCD insertion in public institutions, IUCD and post partum sterilization were emphasized more in comparison to the use ship of other contraceptive methods like; male sterilization, laparoscopic and mini lap sterilizations and condom from the base year 2017-18 to 2019-20. The study emphasized for organizing awareness camp to increase the user ship of male contraception and other terminal methods in Assam.*

Keywords: Female Sterilization, Male Sterilization, laparoscopic and Mini Lap Sterilizations, HMIS, NFHS-4 & 5

1. Introduction

The initiatives taken by the Government in implementing the Family Planning Programme have significant impact on the country as a whole. India was the first country in the world to establish a government family planning program way back in 1952. Family planning is the method that gives couples and individuals the ability to plan childbirth, and space and time pregnancies. The primary purpose of family planning is to eliminate unwanted pregnancies and arrive at the optimum number of children for any family through contraception and treatment of involuntary infertility. Apart from this, it also helps to abate the transmission of sexually transmitted infections and diseases, including HIV/AIDS (Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome). The importance of family planning in society is also evident from the fact that it reduces the infertility rates, thereby contributing to the overall social and preventive health of individuals and the wider community. Annually, around nine million women in the United States benefit from family planning practices protecting their health. Family planning also helps save about \$10 billion of taxpayers' money. Read on to get a thorough understanding of the importance of family planning, and the many benefits and advantages of the practice – to better appreciate its significance in the ever-changing landscape of maternal health.

Study of population and its concomitant components have become an important aspect at present context. At present the population scenario of the globe has undergone a drastic change which has invited so many socio cultural and

economic problems as well. It has created socio- cultural unrest within the country as far as Indian Population policy is concerned. To curb this volatile issue post- independent Government has been taking immense step in the form of national programme and policies in order to bring a balance in population ratio. Synchronising with these issues, in modern time, Government of India has been implementing family planning programme policies, which has been considered and proved as most effective measures of controlling the rapid growth of human population. It is considered as an essential component of any broad based development strategy that seeks to improve the quality of life of both individuals and communities. The effect and impact of family planning on reproductive behaviour of the couples is also considered as an important point (Bhende and Saksena 1969, Amonker 1973, Rao et. al 1993). India was the first country in the world to have launched a National Programme for Family Planning in 1951 with the objective of reducing the birth rate to the extent necessary to stabilize the population, consistent with the requirement at the national economy. Since, its inception, the programme has experienced significant growth in terms of financial investment, service delivery points, type of services and the range of contraceptive methods offered.

Level of Family Planning use is measured by the contraceptive prevalence rate, defined usually as the percentage of married women of reproductive age (15 to 49 years) currently using contraception. By and large, contraception is a most practical and fruitful methods of family planning which has touched more or less all sections of the communities in a unscrupulous manner. So for the

outcome of the said programme is concerned, it has remarkably ramified among all sections of communities irrespective of caste and creed. Thus the concepts and attitudes of contraceptive have become more popular among the urban and rural folk people as well. Studies have revealed that in Assam 43 percent currently married women have used some methods of contraception compared to national average of 48 percentages (NFHS-2, 2002) which can be earmarked as significant impact of national health and family welfare policies.

The use of various methods of contraceptive has drawn a substantial interest to the researchers and policy makers. It has revealed from the studies the use of contraceptive have brought a new trend of change in the maternal and child health. It thus develops the quality of mothers and child health. Moreover, contraceptive use decreases the chances of reproductive wastage and increases the chances of quality of life to live birth. Contraceptive use not only controls the fertility but it increases the spacing pattern of live births too.

Use of contraceptive is an important factor to control fertility and population growth as well. Use of contraceptive after having less number of live births indicates the success of RCH programme. Under the RCH programme various methods are made available to the couples. Here an attempt is made to find out such methods, which are popularly use by the couples. The methods like sterilization, IUD, Oral Pill, Condom and others are readily available methods, which have brought a marked benefit to the user.

Knowledge about fertility control and family planning is an important step toward gaining access to contraceptive methods and using a suitable method in a timely and effective matter. The provision of contraceptive information is fundamental to the ability of women and men to make informed choices about reproductive health decisions. Lack of knowledge of contraceptive methods can be a major hindrance to their use. The present study is undertaken to know the level of practices of family planning method in Assam with the following objectives and methodology:

1.1 Objectives

The objective of the study is to assess the level and practices of the family planning methods in Assam for determining the popular method of contraception among the currently married couples.

1.2 Methodology

The study is based on secondary data taken from the HMIS web portal for the year 2017-18 to 2019-20. The data of NFHS-4 (1915-16) and NFHS-5 (2019-20) is also taken into consideration for discussion at the district level of Assam State. The percent change of the use of different contraceptive methods at the district level has also been analysed from the base year population 2017-18 to the given year 2019-20 based on the HMIS data.

2. Results and Discussion

2.1 Level of acceptance of female sterilization

The family planning programmes are successful to a great extent but it still has a long way to go. Family planning has always been the main emphasis in population policies adopted by the government. However, there is a need of more public awareness and public participation for enhancing the use of family planning methods. Acceptance of sterilization is the most common method of contraception among married couples in the State of Assam. At state level, out of total sterilization/ tubectomy, 94 percent was performed on female for contraception during 2019-20 as per the HMIS results (Table 1). In 2017-18, Chirang and Dima Hasao districts had the cent percent sterilization while in 2019-20, only one Udalguri district had the cent percent sterilization done for female only. The percent change of female sterilization from 2017-18 to 2019-20 was highest in Nagaon district and lowest in Hailakandi in HMIS results which needs to be further relooked to further strengthen particularly those districts which have reduced female sterilization. The NFHS-4 (1915-16) and NFHS-5 (2019-20) results revealed that among the total users irrespective of any method of family planning 9 to 9.5 percent used female sterilization in Assam.

Table 1: District wise percentage distribution of women using sterilization in Assam

State/Districts	Female Sterilization (%)					
	HMIS			NFHS-4	NFHS-5	Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	2015-16	2019-20	
Assam	93	95.4	93.5	9.5	9.0	0.5
Baksa	94.8	92.3	85	8	7.1	-10.3
Barpeta	85.1	97.2	82.6	3.5	5.5	-2.9
Bongaigaon	96.7	98.1	99.2	3.8	5.9	2.6
Cachar	96.4	94.8	92.6	14	6.9	-3.9
Chirang	100	100	98	1.3	3.9	-2.0
Darrang	88.9	93.9	97	2.7	3.5	9.1
Dhemaji	87.1	98.9	94.8	19.2	14.6	8.8
Dhubri	95.9	98.8	96.8	2.9	1.8	0.9
Dibrugarh	89.8	93.2	91	20.9	24.3	1.3
Dima Hasao	100	100	98.6	3.2	10.2	-1.4
Goalpara	96.4	92.7	96.3	2.8	6	-0.1
Golaghat	94.1	97.9	93.8	8.4	13.2	-0.3
Hailakandi	96.1	91.9	83.3	5.7	5.7	-13.3
Jorhat	94.9	95.4	91.6	13.9	12.5	-3.5

Kamrup M	99.1	99.7	99.5	12.2	13.4	0.4
Kamrup R	91.9	93.8	92.6	7.6	8	0.8
Karbi Anglong	94.7	95.6	93.3	6.1	9.3	-1.5
Karimganj	99.2	99.7	97.7	5.6	6.1	-1.5
Kokrajhar	99.4	99	97.7	2.8	6	-1.7
Lakhimpur	98.9	98.1	95.5	10.2	10.8	-3.4
Marigaon	84.6	85.6	90.4	11	11	6.9
Nagaon	83.5	95.6	98.5	7.2	7.7	18.0
Nalbari	93.1	95.5	97.1	7.4	11.8	4.3
Sibsagar	94.4	95.6	93.4	16.1	12.4	-1.1
Sonitpur	90.7	96.3	94.6	0	9.1	4.3
Tinsukia	90.8	88	87.6	16.7	31.3	-3.5
Udalguri	88.7	70.9	100	6.4	9.6	12.7

2.2 Level of acceptance of male sterilization

Male sterilization/ vasectomy is currently the most widely practiced surgical procedure for male contraception. Although it is safer, simpler, less expensive, and equally as effective as female sterilization, there is still a large discrepancy between female and male sterilization in Assam. As per 2019-20 data, in Assam out of total sterilization about 7 percent male sterilization was done. No male sterilization is recorded in the districts of Chirang and Dima Hasao in 2017-18 and 2018-19 periods and Udalguri district in 2019-20. However, Barpeta, Marigaon and Nagaon districts had more than 15 percent male

sterilization/vasectomy in 2017-18. In 2018-19, Udalguri district and in 2019-20, Hailakandi district had more than 15 percent male sterilization/vasectomy was performed. In Baksa, Cachar, Hailakandi, Kokrajhar, Lakhimpur and Tinsukia districts, the percentage of male users of sterilization has raised during the reference period (Table 2). The percent change from 2017-18 to 2019-20 in HMIS results for the performance of male sterilization in some of the districts reduced negatively in 2019-20 which needed to be further relooked for strengthen. According to NFHS-4 and NFHS-5 results, out of total acceptors male sterilized is not even reached 0.5 percent.

Table 2: District wise percentage distribution of male sterilization in Assam

State/Districts	Male Sterilization (%)					
	HMIS			NFHS-4	NFHS-5	Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	2015-16	2019-20	
Assam	7	4.6	6.5	0.1	0.1	-7.1
Baksa	5.2	7.7	15	0	0	188.5
Barpeta	14.9	2.8	17.4	0	0.1	16.8
Bongaigaon	3.3	1.9	0.8	0	0.1	-75.8
Cachar	3.6	5.2	7.4	0.2	0.1	105.6
Chirang	0	0	2	0	0.1	0.0
Darrang	11.1	6.1	3	0	0.1	-73.0
Dhemaji	12.9	1.1	5.2	0.1	0	-59.7
Dhubri	4.1	1.2	3.2	0	0	-22.0
Dibrugarh	10.2	6.8	9	0.1	0.1	-11.8
Dima Hasao	0	0	1.4	0	0.2	0.0
Goalpara	3.6	7.3	3.7	0	0.1	2.8
Golaghat	5.9	2.1	6.2	0.1	0	5.1
Hailakandi	3.9	8.1	16.7	0	0	328.2
Jorhat	5.1	4.6	8.4	0	0.3	64.7
Kamrup M	0.9	0.3	0.5	0	0	-44.4
Kamrup R	8.1	6.2	7.4	0.2	0.2	-8.6
Karbi Anglong	5.3	4.4	6.7	0	0	26.4
Karimganj	0.8	0.3	2.3	0	0.5	187.5
Kokrajhar	0.6	1	2.3	0	0.1	283.3
Lakhimpur	1.1	1.9	4.5	0	0.1	309.1
Marigaon	15.4	14.4	9.6	0.4	0.4	-37.7
Nagaon	15.5	4.4	1.5	0	0.2	-90.3
Nalbari	6.9	4.5	2.9	0	0	-58.0
Sibsagar	5.6	4.4	6.6	0.5	0	17.9
Sonitpur	9.3	3.7	5.4	0.1	0.1	-41.9
Tinsukia	9.2	12	12.4	0.6	0.1	34.8
Udalguri	11.3	29.1	0	0.5	0.5	-100.0

2.3 Level of Postpartum IUCD insertion

Postpartum IUCD are among the most commonly used long acting temporary method of contraception in women of

reproductive age. Postpartum inserting of IUCD is safe, effective, feasible and reversible method of contraception. In the immediate postpartum period the women are highly motivated and needs an effective method for contraception

to avoid unwanted pregnancy. There is an increasing trend in percentage of PPIUCD insertion among the IUCD users in Assam (Table 3). At state level, the percentage of PPIUCD users has increased from 40 percent in 2017-18 to 54 percent in 2019-20. Among the districts of Assam, Kamrup (M) had shown the highest percentage of PPIUCD users during the period whereas the lowest is observed in Karbi Anglong district. In Chirang and Karbi Anglong

districts, the percentage of woman inserted IUCD after delivery is just half of the state percentage during 2019-2020. Percent change of PP IUCD insertion in Assam from 2017-18 to 2019-20 in HMIS result was 36.7 points. It was highest in Kamrup R district and lowest in Dhubri district. Among all the methods of family planning, the contribution of PP IUCD insertion was 2.9 percent in Assam State.

Table 3: District wise percentage distribution of PP IUCD insertion in Assam

State/Districts	PP IUCD insertion (%)					
	HMIS			NFHS-4	NFHS-5	Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	2015-16	2019-20	
Assam	39.5	41.7	54	2.2	2.9	36.7
Baksa	25.4	33.3	49.3	4	3.3	94.1
Barpeta	23.8	37	54.5	2.5	2	129.0
Bongaigaon	14.6	17.8	34.2	1.5	2.6	134.2
Cachar	36.7	36	60.4	2	1	64.6
Chirang	13.8	7.3	25.1	2.3	5.2	81.9
Darrang	50.8	50.7	62.7	2.1	2.8	23.4
Dhemaji	46.6	54	56.4	3.2	3.8	21.0
Dhubri	29.5	33.2	30	1	1.3	1.7
Dibrugarh	62	53	72.6	3.3	3.3	17.1
Dima Hasao	36	38.4	45.1	2.7	4	25.3
Goalpara	34	34.9	42.7	2.1	3.2	25.6
Golaghat	75.9	78.2	80.4	3.1	3.1	5.9
Hailakandi	31.6	29.9	37.4	2.9	4.3	18.4
Jorhat	23.1	19.5	39.7	2.3	3.6	71.9
Kamrup M	84.5	90.3	94.6	4.4	4.5	12.0
Kamrup R	8.7	24.1	41.6	2.4	3.4	378.2
Karbi Anglong	7.6	12.4	23.3	2.1	6.2	206.6
Karimganj	9.9	25.4	41.1	1.4	2.3	315.2
Kokrajhar	33.3	35.9	44.1	3.6	4.1	32.4
Lakhimpur	29.8	35.1	59.9	1.8	3	101.0
Marigaon	14.8	19.9	36.9	1.7	3.8	149.3
Nagaon	28	41.5	60.2	0.4	2.8	115.0
Nalbari	43.3	35.6	45	2	2.6	3.9
Sibsagar	51.9	42.3	64.7	3.4	4.4	24.7
Sonitpur	34.7	44.3	57.9	1.7	1.7	66.9
Tinsukia	59.6	49.3	61.7	1.9	3	36.7
Udalguri	5.3	18.4	33.2	2.8	2.8	94.1

2.4 Level of PP IUCD insertion to total institutional deliveries

Increased number of institutional deliveries allows offering family planning methods to couples. Although the proportion of PPIUCD users to total IUCD acceptors was high in Assam (40% or more than 40 % throughout the duration), less than 25 percent women who gave birth at institutions accepted PPIUCD method for contraception among the all family planning methods during the study period (Table 4). In 2019-20, the highest and the lowest percentage of PPIUCD users among institutional deliveries are observed in Darrang (47%) and Karbi Anglong (8.3%) districts respectively. The percent change of PP IUCD insertion to total institutional deliveries from 2017-18 to 2019-20 was exceptionally well in Karimganj, Lakhimpur, Udalguri and some other districts. However, in some of the districts like; Dhubri and Dhubri had the reduced percent change of PP IUCD insertion to total institutional deliveries from 2017-18 to 2019-20.

Table 4: District wise percentage distribution of PP IUCD insertion to total institutional deliveries in Assam

State/Districts	PP IUCD to Total Institutional Deliveries (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	12.1	12.6	20	65.3
Baksa	6.6	9	27.4	315.2
Barpeta	5.2	7.8	17.7	240.4
Bongaigaon	4.9	7.6	21.9	346.9
Cachar	5	5	10.9	118.0
Chirang	4.6	2.2	11.3	145.7
Darrang	35.8	34.3	47.1	31.6
Dhemaji	23.8	24.6	28.7	20.6
Dhubri	14.6	11.2	9.4	-35.6
Dibrugarh	21.8	16.7	31.7	45.4
Dima Hasao	10.5	9.8	15	42.9
Goalpara	9.7	10.8	12.1	24.7
Dhubri	49.7	41.3	45.8	-7.8
Hailakandi	18.5	19.5	24.4	31.9
Jorhat	6.5	5.6	11.7	80.0
Kamrup M	32.3	35.2	40.5	25.4
Kamrup R	2.7	6.4	14.3	429.6

Karbi Anglong	1.8	3.4	8.3	361.1
Karimganj	1.2	5.2	11.2	833.3
Kokrajhar	6.8	7.6	9.6	41.2
Lakhimpur	2.3	7.9	18.4	700.0
Marigaon	2.4	5.9	13.1	445.8
Nagaon	5.4	9.1	18.3	238.9
Nalbari	22.9	23.5	29	26.6
Sibsagar	22.5	13.4	34.5	53.3
Sonitpur	6.6	6.2	8.9	34.8
Tinsukia	19.9	14.9	29.9	50.3
Udalguri	1.6	4.3	9.6	500.0

2.5 Level of IUCD insertions to all family planning methods

Among all the family planning methods (permanent and temporary), IUCD method is the most popular one. In Assam the use of IUCD to all contraceptive methods has increased from 78 percent to 83 percent during the study period (Table 5). Chirang district shows more than 95 percent female preferred IUCD method for contraception. Among the districts of Assam, only in Kokrajhar the percentage of female who preferred to use IUCD method for contraception has decreased continuously during the reference period. In Udalguri district 99 percent female used IUCD method among all the family planning methods to avoid pregnancy for 2019-20. The percent change of IUCD insertions to all family planning methods in Assam from 2017-18 to 2019-20 in HMIS results was 6.4 points. It was highest in Lakhimpur district and lowest in Dima Hasao and some other districts also.

Table 5: District wise percentage distribution of IUCD insertions to all family planning methods in Assam

State/Districts	IUCD insertions to all Family Planning methods (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	78.2	79.1	83.2	6.4
Baksa	75	71.8	89.8	19.7
Barpeta	77.4	78.5	83.5	7.9
Bongaigaon	79.6	83.5	89.4	12.3
Cachar	60.2	62.4	65	8.0
Chirang	95	95.4	96.3	1.4
Darrang	89.5	90.1	94	5.0
Dhemaji	84.5	80.8	85.8	1.5
Dhubri	94.4	92.4	92.7	-1.8
Dibrugarh	72.2	70.8	76	5.3
Dima Hasao	97.2	86	92.1	-5.2
Goalpara	82.2	83.5	81.3	-1.1
Golaghat	85.8	84.9	85.3	-0.6
Hailakandi	91.2	94.8	94.2	3.3
Jorhat	67.3	67.7	76.3	13.4
Kamrup M	73.4	73.6	77.4	5.4
Kamrup R	75.8	71.7	77	1.6
Karbi Anglong	92.4	96.7	95.5	3.4
Karimganj	58.7	75.5	77.8	32.5
Kokrajhar	90	87.9	86.7	-3.7
Lakhimpur	45.3	62.7	78.8	74.0
Marigaon	86.3	93.5	90.1	4.4
Nagaon	79.7	86	86.1	8.0
Nalbari	76.5	80.3	80.9	5.8
Sibsagar	72	69.4	87.2	21.1
Sonitpur	62.1	62.5	64.4	3.7

Tinsukia	60.2	59.5	74.3	23.4
Udalguri	90.2	93.1	99	9.8

2.6 Sterilization conducted at Public institutions

The public health sector is the major source of sterilization services. In Assam more than 92 percent sterilization was conducted at public health institutions in each year of the reference periods (Table 6). In some districts of Assam viz. Chirang, Darrang, Dhemaji, Dhubri, Dibrugarh, Dima Hasao, Hailakandi, Marigaon and Kokrajhar cent percent sterilization was performed at Govt. hospitals during the reference period. However, in Udalguri district not only the percentage of sterilization conducted at public health institutions decreases continuously during the study period but in 2019-20, merely 30 percent beneficiaries performed their sterilization at public health care. The percent change of sterilisation conducted at public institutions in Assam from 2017-18 to 2019-20 in HMIS results was highest in Sibsaagar district with 35.3 points and most of the districts had maintained it cent percent performance in all the reference periods. However, some of the 10 districts like; Bongaigaon, Goalpara and etc. had the reduced sterilisation conducted at public institutions in Assam from 2017-18 to 2019-20.

Table 6: District wise percentage distribution of sterilization conducted at Public institutions in Assam

State/Districts	Sterilisation conducted at Public institutions to Total Sterilisation (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	92.2	92.3	92.1	-0.1
Baksa	100	100	100	0.0
Barpeta	91.3	95.4	94.8	3.8
Bongaigaon	66.8	68.6	64.2	-3.9
Cachar	97.5	92.3	92.8	-4.8
Chirang	100	100	100	0.0
Darrang	100	100	100	0.0
Dhemaji	100	100	100	0.0
Dhubri	100	100	100	0.0
Dibrugarh	100	100	99.1	-0.9
Dima Hasao	100	100	100	0.0
Goalpara	87.1	80.7	85.4	-2.0
Golaghat	100	88.4	92.4	-7.6
Hailakandi	100	100	100	0.0
Jorhat	99.4	98	99.5	0.1
Kamrup M	96.3	89.7	92.4	-4.0
Kamrup R	100	100	100	0.0
Karbi Anglong	100	100	100	0.0
Karimganj	89.1	84.5	85.1	-4.5
Kokrajhar	100	100	100	0.0
Lakhimpur	99.5	96.8	100	0.5
Marigaon	100	100	100	0.0
Nagaon	59.1	59.8	61.3	3.7
Nalbari	67.9	75	64.7	-4.7
Sibsagar	73.9	97.9	100	35.3
Sonitpur	95.8	93.4	97.6	1.9
Tinsukia	98.7	99.7	98.4	-0.3
Udalguri	93.1	53.8	30	-67.8

2.7 Level of laparoscopic sterilization

Female sterilization is one of the most effective methods of contraception among women 35 years and above. Female sterilization may be performed in several ways such as minilaparotomy, laparoscopic sterilization and hysteroscopy methods. In India, postpartum sterilization is usually done by minilaparotomy, whereas interval and postabortal are usually done by laparoscopy. In Assam over 50 percent female underwent laparoscopic sterilizations; the percentage has decreased from 62 percent in 2017-18 to 52 percent in 2019-20 (Table 7). In Dima Hasao district where 99 percent sterilization has performed on female but no female beneficiary opted for laparoscopic method as sterilization. On the hand in Baksa district laparoscopic sterilization is found over 90 percent female beneficiaries choose laparoscopic sterilization. The percent change laparoscopic sterilizations to total female sterilisations from 2017-18 to 2019-20 based on HMIS results revealed of the reduced points of about 16 points in Assam in the reference periods. Barring Marigaon district, all of the remaining districts had the reduced points of the percent change laparoscopic sterilizations to total female sterilisations from 2017-18 to 2019-20 which needed a special attention.

Table 7: District wise percentage distribution of laparoscopic sterilization in Assam

State/Districts	Laparoscopic sterilizations to Total Female Sterilisations (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	62.1	59.4	52.4	-15.6
Baksa	99.7	94.8	92	-7.7
Barpeta	28.9	26.5	22.9	-20.8
Bongaigaon	41.1	25.6	13.4	-67.4
Cachar	74.9	63.5	47.1	-37.1
Chirang	84.2	33.8	45.9	-45.5
Darrang	84.9	83.7	63.3	-25.4
Dhemaji	52.7	61	63.4	20.3
Dhubri	67	61.8	57.7	-13.9
Dibrugarh	76.8	85.7	81.7	6.4
Dima Hasao	0	0	0	0
Goalpara	61	52.3	48.6	-20.3
Golaghat	70.6	48.8	54.9	-22.2
Hailakandi	100	100	82.6	-17.4
Jorhat	69.7	77.9	58.1	-16.6
Kamrup M	23.5	18.7	15.1	-35.7
Kamrup R	72.6	73	70.3	-3.2
Karbi Anglong	0	0	3	0
Karimganj	86.2	77.1	74.5	-13.6
Kokrajhar	20.5	22.2	43.7	113.2
Lakhimpur	54.3	63.6	47.8	-12.0
Marigaon	61.4	51.7	74.9	22.0
Nagaon	34.6	31.8	32.7	-5.5
Nalbari	56.7	62.2	55.5	-2.1
Sibsagar	85.3	84.5	62.8	-26.4
Sonitpur	72.6	69.6	72.1	-0.7
Tinsukia	72.6	72.1	65.8	-9.4
Udalguri	87.7	48.2	0	-100.0

2.8 Level of Mini Lap sterilisation

In Assam not only less than 5 percent women underwent mini lap sterilization but the percentage has also decreased from 4 percent in 2017-18 to 2 percent in 2019-20 (Table 8). The districts like; Cachar, Chirang, Hailakandi, Marigaon, Sibsagar and Udalguri had no record against mini lap sterilization during the study period. The highest percentage of female beneficiaries opted mini lap method as sterilization was in Karbi Anglong district. The percent change of mini lap sterilisations to total female sterilisations from 2017-18 to 2019-20 was successively high in Nagaon, Golaghat and Kamrup R districts. Some of the districts had not improved from 2017-18 to 2019-20 for the mini lap sterilisations. Some of the districts had not performed well in comparison in the year 2019-20 to 2017-18 for the mini lap sterilisations performance like in the districts of Barpeta, Dhemaji, Dibrugarh, Jorhat, Kamrup M, Kamrup R, Karbi Anglong, Karimganj, Nalbari and Tinsukia.

Table 8: District wise percentage distribution of mini lap sterilization in Assam

State/Districts	Mini Lap Sterilisations to Total Female Sterilisations (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	3.6	2.6	2.2	-38.9
Baksa	0	0	0	0.0
Barpeta	6.2	5.5	3.4	-45.2
Bongaigaon	0	5.1	0.5	0.0
Cachar	0	0	0	0.0
Chirang	0	0	0	0.0
Darrang	0	0	0.1	0.0
Dhemaji	2	1.6	1.4	-30.0
Dhubri	0	0.4	0	0.0
Dibrugarh	6	8.8	4.4	-26.7
Dima Hasao	18.2	19	23.3	28.0
Goalpara	0	0.1	0	0.0
Golaghat	0.2	0	2.2	1000.0
Hailakandi	0	0	0	0.0
Jorhat	1.1	0.2	0.3	-72.7
Kamrup M	12.8	6.5	2.9	-77.3
Kamrup R	0.2	3.5	1	400.0
Karbi Anglong	81	76	43.5	-46.3
Karimganj	1.1	0	0.9	-18.2
Kokrajhar	0	5.4	1.1	0.0
Lakhimpur	0	0.2	0	0.0
Marigaon	0	0	0	0.0
Nagaon	0.7	4.9	8.6	1128.6
Nalbari	20.5	0	0.1	-99.5
Sibsagar	0	0	0	0.0
Sonitpur	0	0	1.2	0.0
Tinsukia	1.5	1.6	1.4	-6.7
Udalguri	0	0	0	0.0

2.9 Level of post partum sterilization

The state had continuous increase in the percentage of post partum sterilizations, 33 percent in 2017-18 to 44 percent in 2019-20 (Table 9). It is significant to note here that in Udalguri district where only 12 percent women opted sterilization at the time of birth or very soon after birth during 2017-18, the percentage has risen up to 100 in 2019-

20. The lowest percentage of post partum sterilization was observed in Hailakandi district during 2019-20. The percent change of post partum sterilization from 2017-18 to 2019-20 in the State was 30.5 points. The percent change of post partum sterilization from 2017-18 to 2019-20 in Karbi Anglong was highest whereas Dima Hasao district had the lowest reduced points for post partum sterilization from 2017-18 to 2019-20.

Table 9: District wise percentage distribution of post partum sterilization in Assam

State/Districts	Post Partum Sterilisations to Total Female Sterilisations (%)			
	HMIS			Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	
Assam	33.4	36.5	43.6	30.5
Baksa	0.3	1.4	6.6	0.0
Barpeta	64.8	68	73.6	13.6
Bongaigaon	58.9	69.4	77.1	0.0
Cachar	24.9	36.5	46.8	0.0
Chirang	15.8	66.2	37.8	0.0
Darrang	15.1	16.3	36.6	0.0
Dhemaji	45.2	37.5	34.5	-23.7
Dhubri	33	37.6	42.3	0.0
Dibrugarh	13.4	4.7	13.5	0.7
Dima Hasao	81.8	81	50.7	-38.0
Goalpara	39	47.6	44.3	0.0
Golaghat	28.7	49.3	42	46.3
Hailakandi	0	0	8.7	0.0

Jorhat	29.2	21.5	40.5	38.7
Kamrup M	62.8	72.5	80.1	27.5
Kamrup R	26.8	23.5	28.5	6.3
Karbi Anglong	14.1	24	51.5	265.2
Karimganj	11.4	22.9	24.3	113.2
Kokrajhar	78.9	71.8	55.2	0.0
Lakhimpur	45.7	27	52	0.0
Marigaon	38.6	48.3	25.1	0.0
Nagaon	57.5	58.5	57.9	0.7
Nalbari	22.7	35.6	44.4	95.6
Sibsagar	14.4	15.5	37.2	0.0
Sonitpur	26.9	29.8	26	0.0
Tinsukia	25.7	26.2	32.1	24.9
Udalguri	12.3	25.3	100	0.0

2.10 Distribution of combined oral pills

Combined oral pill is one of the popular choices for contraception among women of reproductive age. In 2019-20, the highest percentage of combined oral pills distribution was in Dhubri district (8%) followed by Barpeta (7%), Kamrup Rural (7%) and Goalpara (5%). In some districts namely Sonitpur, Nagaon and Goalpara, the percentage of oral pill distribution had decreased continuously during the reference period. Among the districts of Assam, Dhubri was the only one where the percentage of oral pill distribution had increased sharply from 2017 to 2020. As per the NFHS results, the increase in distribution of combined oral pills was highest in Marigaon district from 2015-16 to 2019-20 whereas it was lowest in Nalbari district.

Table 10: District wise percentage distribution of combined oral pills in Assam

Districts	Distribution of combined oral pills (%)					
	HMIS			NFHS-4	NFHS-5	Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	2015-16	2019-20	
Baksa	3.0	3.5	3.0	24.4	24.4	0
Barpeta	8.0	8.9	7.2	30	35.3	-10
Bongaigaon	2.4	2.8	3.4	31.2	30.6	41.7
Cachar	3.2	2.7	3.7	7	22.9	15.6
Chirang	1.5	1.6	1.5	23	39.9	0
Darrang	2.3	2.9	3.4	36	25.8	47.8
Dhemaji	2.5	3.7	3.4	9.8	23.9	36.0
Dhubri	5.5	6.3	8.3	10.6	10.7	50.9
Dibrugarh	3.1	3.7	2.8	10.6	10.7	-9.7
Dima Hasao	0.5	0.5	0.6	21.7	27	20.0
Goalpara	6.5	5.8	5.4	26.1	40.1	-16.9
Golaghat	4.9	4.3	3.7	18	13	-24.5
Hailakandi	2.4	2.7	2.5	20.6	25	4.2
Jorhat	2.9	2.5	2.0	15.6	9.9	-31.0
Kamrup M	2.3	2.2	1.7	14.4	16.8	-26.1
Kamrup R	6.1	5.5	6.9	17.7	15.8	13.1
Karbi Anglong	3.3	3.0	3.2	32.9	23.6	-3.0
Karimganj	2.7	2.1	3.2	22	34	18.5
Kokrajhar	4.0	4.4	4.8	27.1	44	20.0
Lakhimpur	4.1	3.9	4.1	22.5	23.5	0.0
Marigaon	2.7	3.4	3.0	20.9	39.6	11.1
Nagaon	8.6	5.6	4.2	32.4	30.2	-51.2
Nalbari	2.8	3.3	3.9	32.2	21.4	39.3
Sibsagar	2.4	2.8	3.7	10.1	16.3	54.2
Sonitpur	6.3	5.4	4.7	30.7	41.9	-25.4
Tinsukia	3.6	4.1	3.7	7.3	13.4	2.8
Udalguri	2.4	2.5	2.1	32.3	23.9	-12.5

2.11 Distribution of condom

The highest percentage of condom distribution was in Kamrup R districts (8%) followed by Dhubri (7%), Karbi Anglong (6%) and Goalpara (6%) during 2019-20 (Table 11). On the other hand, the lowest distribution of condom was in Chirang and Dima Hasao districts (less than one

percent). In Tinsukia, Nalbari, Karimganj, Hailakandi, Dhubri and Dhemaji districts the percentage of condom distribution had increased sharply during the study period. According to NFHS-5 (2019-20), each of the districts Cachar, Chirang, Kamrup M and Karimganj had more than 6 percent whereas Hailakandi district had recorded the highest about 13 percent of condom users in Assam State.

Table 11: District wise percentage distribution of condom in Assam

Districts	Condom distributed (%)					
	HMIS			NFHS-4	NFHS-5	Percent change from 2017-18 to 2019-20 in HMIS results
	2017-18	2018-19	2019-20	2015-16	2019-20	
Baksa	3.2	2.8	2.2	1.5	2.7	-31.3
Barpeta	5.7	5.7	4.8	3	3.6	-15.8
Bongaigaon	2.2	2.6	2.8	2.3	4.8	27.3
Cachar	4.0	4.0	4.8	5.2	6.1	20.0
Chirang	0.8	0.8	0.9	3.4	6.1	12.5
Darrang	3.0	3.9	3.8	3.1	3.3	26.7
Dhemaji	1.2	2.2	2.4	1.4	1.6	100.0
Dhubri	5.6	6.6	7.2	3.5	5.1	28.6
Dibrugarh	4.4	4.2	3.1	2.7	4.5	-29.5
Dima Hasao	0.4	0.4	0.6	1.4	3.1	50.0
Goalpara	7.0	6.4	6.1	1.8	3.6	-12.9
Golaghat	5.2	4.7	3.7	2.2	5.6	-28.8
Hailakandi	3.8	4.2	4.8	4.3	12.8	26.3
Jorhat	5.4	5.4	3.1	1.8	6	-42.6
Kamrup M	2.7	2.6	2.6	5	6.6	-3.7
Kamrup R	8.2	7.2	7.8	1.5	4.8	-4.9
Karbi Anglong	7.6	5.2	6.2	1.2	1.8	-18.4
Karimganj	2.6	3.2	4.1	3.9	9.5	57.7
Kokrajhar	2.8	2.8	2.7	1.8	3.2	-3.6
Lakhimpur	2.6	2.9	2.8	1.3	5.9	7.7
Marigaon	2.4	2.3	2.3	2.4	5.5	-4.2
Nagaon	4.4	3.9	4.3	2.6	5.4	-2.3
Nalbari	3.9	4.3	4.5	2.8	2.9	15.4
Sibsagar	3.3	4.1	4.4	1.4	5.1	33.3
Sonitpur	4.6	4.1	3.7	3.6	5.3	-19.6
Tinsukia	1.8	2.6	3.0	3.1	3.1	66.7
Udalguri	1.2	1.2	1.0	1.4	3	-31.3

3. Conclusions

The use of various methods of contraceptive has drawn a substantial interest to the researchers and policy makers. The uses of contraceptives have brought a new trend of change in the maternal and child health. It thus develops the quality of mothers and child health. Moreover, contraceptive use decreases the chances of reproductive wastage and increases the chances of quality of life to live birth. Contraceptive use not only controls the fertility but it increases the spacing pattern of live births too. The present study was undertaken to know the level of practices of family planning methods in Assam at the district level during the periods of 2017-18 to 2019-20 based on the HMIS data and further user ship of the contraceptives based on the NFHS-4 (2015-16) and NFHS-5 (2019-20) results. According to NFHS data knowledge on family planning methods among currently married couples of Assam is remarkably high. The NFHS-4 & 5 has revealed that among the surveyed population almost 99 percent have the knowledge on any method of contraception. Temporary methods like condom and pill are known by most of the currently married women in Assam. According to NFHS-4& 5, nine out of ten currently married women know condom and pill respectively. The study reveals that in respect of permanent method female sterilization fully overcome the

male sterilization which is very low in every districts of the state. On the other hand users of temporary methods like IUCD and OP etc. gradually increases in the state, especially IUCD ranked the top in this regard. Alike male sterilization condom users is also very low in each and every district of Assam. Public institutional sterilization is more effective in Assam. As much as 92 percent sterilization has taken place at public institution. In Assam, the percent change of the user ship of female sterilization, PP IUCD insertion in public institutions, IUCD and post partum sterilization were emphasized more in comparison to the use ship of other contraceptive methods like; male sterilization, laparoscopic and mini lap sterilizations and condom from the base year 2017-18 to 2019-20. Such results are varying at the district level also. The study reveals that prevalence of male contraception irrespective of permanent and temporary methods is very low in the state. The study demands for organizing awareness camp to increase the users of male contraception and other terminal methods in Assam.

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