

## Review Article

# A comparative study of National Family Health Survey-4 and National Family Health Survey-5 on quality of family planning services and unmet need for family planning indicators in Assam

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## ABSTRACT

Family planning is an important component of health, welfare, family stability as well as the social and economic progress of a community. The purpose of this study is to assess the shifts in the quality of family planning services and unmet needs in Assam based on National Family Health Survey (NFHS) rounds 4 and 5. The study is based on both NFHS-4 (2015-2016) and NFHS-5 (2019-2021) data and compares the major indicators; unmet need for family planning and quality of family planning services. Data disaggregated to district level were considered including total unmet need, demand for spacing, and the communication between health workers and female non-users regarding contraceptives. The current study shows that the overall total unmet need for family planning has declined in most of the districts in Assam when compared. However, when comparing districts large disparities have been found for certain districts demonstrating higher levels of unmet need. Contrary to this, the study established that the quality of family planning services measured by health worker's interaction with non-users had increased in most districts but was still inadequate in the state. It is clear from the analysis that there has been significant improvement in family planning services, however; there are challenges concerning the use and availability of family planning services. Interventions proposed are strengthening interventions for certain groups, improving access, and increasing cultural competence.

**Keywords:** Unmet need, Health workers, Reproductive health, National Family Health Survey

## INTRODUCTION

Family planning services influence maternal and child health, population, and development. In 2021, out of the 1.9 billion women of childbearing age or 15-49 years, 1.1 billion needed family planning services.<sup>1</sup> Employment of contraception is encouraged due to the risks posed by pregnancy; many of these risks impact the lives of women and girls. It has been seen that if children are born within two years of the elder sibling, they die within sixty percent of the total death rate of newborns; if children are born within two to three years of the elder, they die within ten percent of the total death rate of infants and rest ninety percent of the total infant death rate is of those children who are born after three years of the elder sibling dies.<sup>2</sup>

Ensuring universal coverage and access to sexual and reproductive health services will be important to meeting the stakeholders' needs under the 2030 agenda for sustainable development premise of 'leaving no one behind'.<sup>3</sup> The most appropriate source for health corridors and related demographic frequencies, such as family planning services and unmet requirements, is India's National Family Health Survey (NFHS). The program's aim has shifted from providing vertical family planning services to providing efficient and integrated reproductive health services at both the individual and systemic levels.<sup>4</sup> 1952 India established the world's first National Program for Family Planning. Over time, the project has developed in terms of policy and program implementation, and it is currently being repositioned to not only accomplish

population stabilization goals, but also to improve reproductive health and reduce maternal, newborn, and child mortality and morbidity.<sup>5</sup> Since its inception in 1992-93, the NFHS, conducted by the International Institute of Population Sciences (IIPS) under the Ministry of Health and Family Welfare (MoHFW), has helped generate accurate data on family health as well as modified health indicators.<sup>6</sup> According to the World Health Organization (WHO), family planning is “the ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. It is achieved through the use of contraceptive methods and the treatment of involuntary infertility” (the working definition used by the WHO Department of Reproductive Health and Research). Avian Donabedian defined quality of care as “the application of medical science and technology in a manner that maximizes the benefits to health without correspondingly increasing the risk”.<sup>7</sup> The Bruce-Jain paradigm focuses on the clinical provision of family planning and defines six factors of quality: provision of choice, client information and counselling, technical competence, effective interpersonal interactions, continuity of care, and suitable constellation of services.<sup>8</sup> Women with unmet needs are those who are fecund and sexually active but do not use contraception and report not wanting to have any more children or delaying the next child. The concept of unmet need refers to the discrepancy between women's reproductive objectives and contraception use.<sup>9</sup> As per the NFHS 5 (2019-2021) India factsheet, 23.9% of health workers talked to female non-users about family planning, and 62.4% of current users were told about the side effects of the current method (based on current users of female sterilization, IUD/PPIUD, injectables, and pills who started using that method in the past 5 years); the total unmet need for family planning (currently married women aged 15-49 years) was 9.4%, and unmet need for spacing was 4.0%.<sup>10</sup> In the context of Assam, only 21.4% of health workers talked to female non-users about family planning, and 70.0% of current users were told about the side effects of the current method (which is higher than the national average); the total unmet need for family planning (currently married women aged 15-49 years) was 11.0% (higher than the national average), and unmet need for spacing was 4.1% (somewhat similar).<sup>11</sup>

The study aims to examine and evaluate changes in two key aspects of family planning which include the ability of the service delivery point to offer quality family planning services and the demand for such services in the population. Attributes like accessibility of the services, different opportunities to use various types of contraceptives, counselling services, and general satisfaction with the family planning services can be put under this aspect. The unmet need aspect probably focuses on the extent of the population that desires to avoid or space childbirth but does not use any contraception method. Comparative analysis of the NFHS-4 and NFHS-5 of Assam permits an understanding of the advancement of family planning service uptake and the remaining

challenges in meeting clients' reproductive health needs. This analysis is particularly important, given India's engagement with the sustainable development goals (SDGs), particularly SDG 3: good health and well-being and, SDG 5: gender equality.

## METHODS

We compared the summary data of NFHS-5 and NFHS-4 with the state and district fact sheets of Assam published by the IIPS. In this study, we included two indicators namely, Unmet need for family planning (currently married women aged 15-49 years) and quality of family planning services. Furthermore, according to NFHS data, two variables were included for calculating the unmet need for family planning (currently married women aged 15-49 years); total unmet need (%) and unmet need for spacing (%). Two variables were evaluated when assessing the quality of family planning services; whether health personnel had ever talked to female non-users about family planning (%) and whether current users had ever been told about the side effects of their current method (%). Data from both NFHS-4 and NFHS-5 were used to prepare maps and figures.

## RESULTS

The differences regarding total unmet needs (%) in different districts of Assam have been shown here. The total unmet need (%) in India as per NFHS-5 was 9.4% and in NFHS-4 was 12.9%. The definition of an unmet need for family planning as described in the NFHS refers to fecund women who are not using contraception but who wish to postpone the next birth (spacing) or stop childbearing altogether (limiting). The NFHS-4 data was not documented for the districts such as Biswanath, Charaideo, Hojai, Majuli, South Salmara, and West Karbi Anglong (Table 1).

There is an overall decrease in the total unmet need for family planning from NFHS-4 to NFHS-5 in most districts, indicating improved access to family planning services. Districts with significant improvement are Dhubri, Lakhimpur, Dhemaji, Goalpara, and Dima Hasao. Districts with increased total unmet needs are Darrang, Bongaigaon, Nalbari, and Udalguri. Persistent discrepancies were discovered when comparing districts, with Kamrup (R) having the largest unmet demand (17.6%), and more than three times the lowest (5.3%) in Biswanath (Figure 1).

There is an overall decrease in the unmet need for spacing between NFHS-4 and NFHS-5 in most districts. The districts with the highest unmet need for spacing are Kamrup (R), Cachar, and Udalguri. The districts with the lowest unmet need for spacing are Biswanath, South Salmara, and Morigaon. The variations in the districts may be due to the factors which were mentioned earlier (Figure 2).

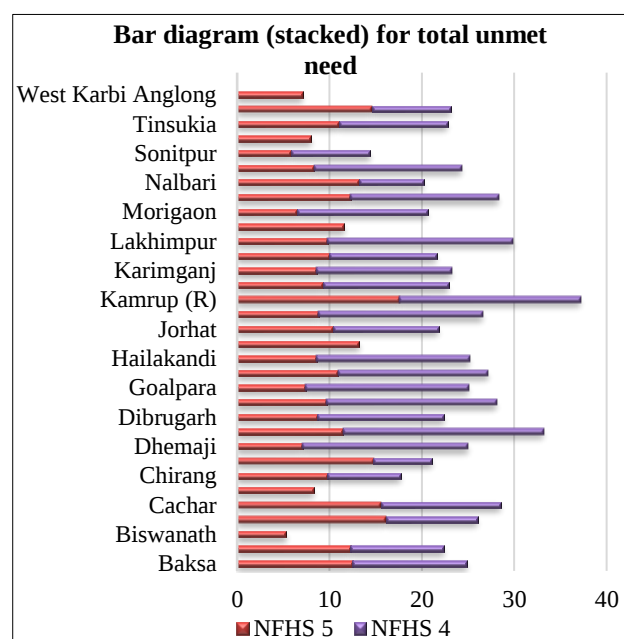
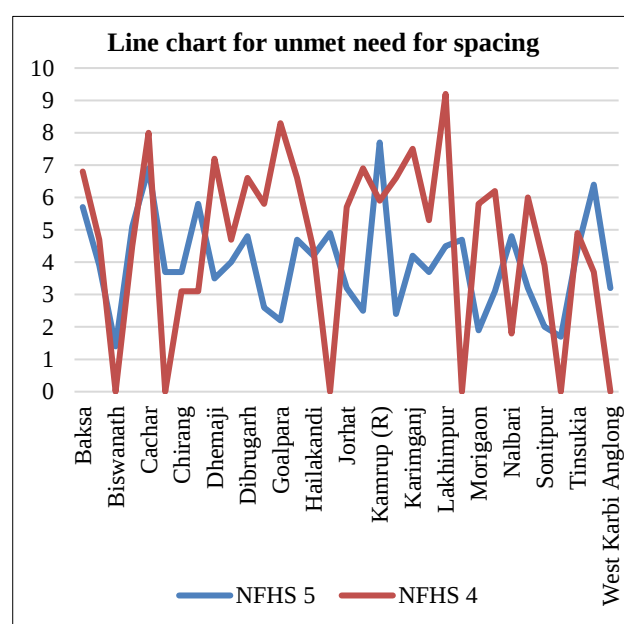
**Table 1: Showing the total unmet need in percentage for all the districts of Assam.**

| District           | Total unmet need (%) |        |
|--------------------|----------------------|--------|
|                    | NFHS 5               | NFHS 4 |
| Baksa              | 12.5                 | 12.4   |
| Barpeta            | 12.3                 | 10.1   |
| Biswanath          | 5.3                  | N/A    |
| Bongaigaon         | 16.1                 | 9.9    |
| Cachar             | 15.6                 | 12.9   |
| Charaideo          | 8.3                  | N/A    |
| Chirang            | 9.8                  | 7.9    |
| Darrang            | 14.8                 | 6.3    |
| Dhemaji            | 7.1                  | 17.9   |
| Dhubri             | 11.5                 | 21.7   |
| Dibrugarh          | 8.7                  | 13.7   |
| Dima Hasao         | 9.7                  | 18.4   |
| Goalpara           | 7.4                  | 17.7   |
| Golaghat           | 10.9                 | 16.3   |
| Hailakandi         | 8.6                  | 16.6   |
| Hojai              | 13.2                 | N/A    |
| Jorhat             | 10.4                 | 11.4   |
| Kamrup (M)         | 8.8                  | 17.8   |
| Kamrup (R)         | 17.6                 | 19.6   |
| Karbi Anglong      | 9.3                  | 13.6   |
| Karimganj          | 8.6                  | 14.6   |
| Kokrajhar          | 10.0                 | 11.6   |
| Lakhimpur          | 9.8                  | 20.1   |
| Majuli             | 11.6                 | N/A    |
| Morigaon           | 6.5                  | 14.1   |
| Nagaon             | 12.3                 | 16.0   |
| Nalbari            | 13.2                 | 7.0    |
| Sivasagar          | 8.3                  | 16.0   |
| Sonitpur           | 5.8                  | 8.6    |
| South Salmara      | 8.0                  | N/A    |
| Tinsukia           | 11.0                 | 11.8   |
| Udalguri           | 14.6                 | 8.5    |
| West Karbi Anglong | 7.1                  | N/A    |

The differences in NFHS-4 and NFHS-5 regarding unmet need for spacing (%) in the districts of Assam in terms of unmet need for spacing (%) have been shown here. The unmet need for spacing (%) in India as per NFHS-5 was 4.0% and in NFHS-4 was 5.7%. The below-mentioned women are considered to have an unmet need for spacing - women who are at risk of pregnancy, do not use contraception, do not want to become pregnant within the next two years, or have not yet decided when they want to become pregnant; pregnant with a mistimed pregnancy; and postpartum amenorrhea for up to two years after a mistimed delivery and no contraceptive use.

Women who are considered to have an unmet need for limiting: women who are at risk of pregnancy, do not use contraception and wish to have no more children; pregnant with an unplanned pregnancy; and postpartum amenorrhea

for up to two years after an unwanted delivery with no contraception.<sup>6,10,11</sup>

**Figure 1: Showing the bar diagram (stacked) for total unmet needs in percentage for all the districts of Assam. The labels (numbers) in black and white are for NFHS-5 and NFHS-4 respectively.****Figure 2: Showing the line chart for the unmet need for spacing in percentage for all the districts of Assam.**

Women who are classified as infecund have no unmet need because they are not at risk of becoming pregnant. The unmet need for family planning is the sum of the unmet need for spacing plus the unmet need for limiting (Table 2).

**Table 2: Showing the unmet need for spacing in percentage for all the districts of Assam.**

| District           | Unmet need for spacing (%) |        |
|--------------------|----------------------------|--------|
|                    | NFHS 5                     | NFHS 4 |
| Baksa              | 5.7                        | 6.8    |
| Barpeta            | 3.9                        | 4.7    |
| Biswanath          | 1.4                        | N/A    |
| Bongaigaon         | 5.1                        | 4.5    |
| Cachar             | 6.9                        | 8      |
| Charaideo          | 3.7                        | N/A    |
| Chirang            | 3.7                        | 3.1    |
| Darrang            | 5.8                        | 3.1    |
| Dhemaji            | 3.5                        | 7.2    |
| Dhubri             | 4.0                        | 4.7    |
| Dibrugarh          | 4.8                        | 6.6    |
| Dima Hasao         | 2.6                        | 5.8    |
| Goalpara           | 2.2                        | 8.3    |
| Golaghat           | 4.7                        | 6.6    |
| Hailakandi         | 4.2                        | 4.4    |
| Hojai              | 4.9                        | N/A    |
| Jorhat             | 3.2                        | 5.7    |
| Kamrup (M)         | 2.5                        | 6.9    |
| Kamrup (R)         | 7.7                        | 5.9    |
| Karbi Anglong      | 2.4                        | 6.6    |
| Karimganj          | 4.2                        | 7.5    |
| Kokrajhar          | 3.7                        | 5.3    |
| Lakhimpur          | 4.5                        | 9.2    |
| Majuli             | 4.7                        | N/A    |
| Morigaon           | 1.9                        | 5.8    |
| Nagaon             | 3.1                        | 6.2    |
| Nalbari            | 4.8                        | 1.8    |
| Sivasagar          | 3.2                        | 6.0    |
| Sonitpur           | 2.0                        | 3.9    |
| South Salmara      | 1.7                        | N/A    |
| Tinsukia           | 4.4                        | 4.9    |
| Udalguri           | 6.4                        | 3.7    |
| West Karbi Anglong | 3.2                        | N/A    |

The differences regarding the percentage of health workers who ever talked to female non-users about family planning in NFHS-4 and NFHS-5 in the districts of Assam have been shown here. The percentage of health workers who ever talked to female non-users about family planning as per NFHS-5 was 23.9% and as per NFHS-4 was 17.7% in India (Table 3).

From NFHS-4 to NFHS-5, most districts had an increase in the percentage of health workers talking to non-users about family planning, indicating improved outreach and efforts by healthcare providers to educate and raise knowledge about family planning. Chirang experienced a huge growth from 14.3% in NFHS-4 to 34.2% in NFHS-5. Dhubri also improved significantly, going from 6.9% in NFHS-4 to 22.6% in NFHS-5. Biswanath, Charaideo, Hojai, South Salmara, and West Karbi Anglong have no

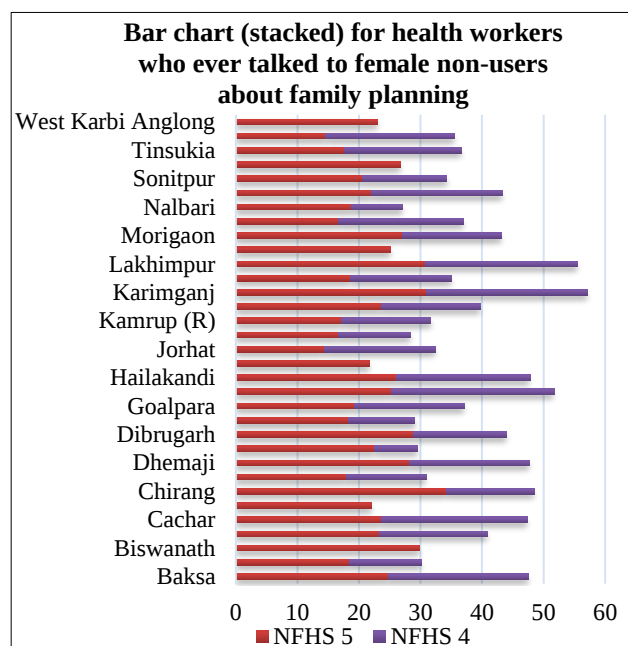
NFHS-4 data but have significant values in NFHS-5, indicating fresh initiatives in these areas. Udalguri and Jorhat have lower NFHS-5 percentages (14.6% and 14.4%, respectively), indicating that these localities may require more emphasis on family planning communication (Figure 3).

**Table 3: Showing the percentage of health worker who ever talked to female non-users about family planning for all the districts of Assam.**

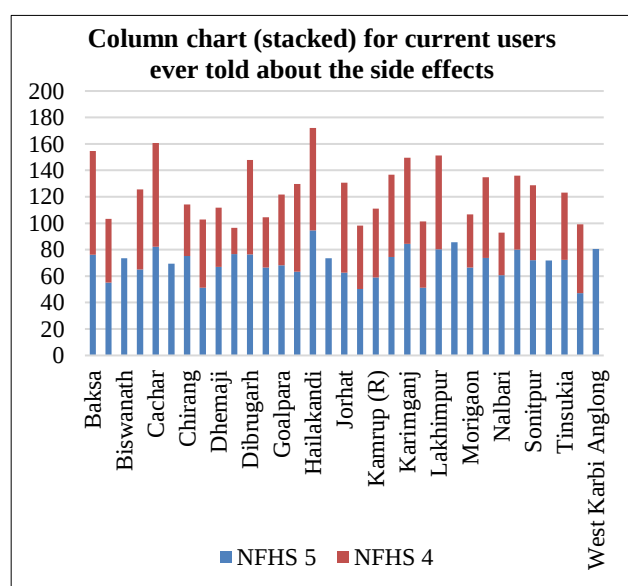
| District           | Health worker ever talked to female non-users about family planning (%) |        |
|--------------------|-------------------------------------------------------------------------|--------|
|                    | NFHS 5                                                                  | NFHS 4 |
| Baksa              | 24.8                                                                    | 22.8   |
| Barpeta            | 18.4                                                                    | 11.8   |
| Biswanath          | 29.9                                                                    | N/A    |
| Bongaigaon         | 23.4                                                                    | 17.5   |
| Cachar             | 23.6                                                                    | 23.8   |
| Charaideo          | 22.0                                                                    | N/A    |
| Chirang            | 34.2                                                                    | 14.3   |
| Darrang            | 18.0                                                                    | 12.9   |
| Dhemaji            | 28.2                                                                    | 19.5   |
| Dhubri             | 22.6                                                                    | 6.9    |
| Dibrugarh          | 28.9                                                                    | 15.1   |
| Dima Hasao         | 18.3                                                                    | 10.8   |
| Goalpara           | 19.3                                                                    | 17.8   |
| Golaghat           | 25.3                                                                    | 26.4   |
| Hailakandi         | 26.1                                                                    | 21.7   |
| Hojai              | 21.7                                                                    | N/A    |
| Jorhat             | 14.4                                                                    | 18.0   |
| Kamrup (M)         | 16.6                                                                    | 11.8   |
| Kamrup (R)         | 17.1                                                                    | 14.6   |
| Karbi Anglong      | 23.6                                                                    | 16.2   |
| Karimganj          | 31.0                                                                    | 26.1   |
| Kokrajhar          | 18.7                                                                    | 16.4   |
| Lakhimpur          | 30.8                                                                    | 24.7   |
| Majuli             | 25.1                                                                    | N/A    |
| Morigaon           | 27.0                                                                    | 16.2   |
| Nagaon             | 16.6                                                                    | 20.4   |
| Nalbari            | 18.8                                                                    | 8.3    |
| Sivasagar          | 22.1                                                                    | 21.2   |
| Sonitpur           | 20.5                                                                    | 13.8   |
| South Salmara      | 26.7                                                                    | N/A    |
| Tinsukia           | 17.6                                                                    | 19.0   |
| Udalguri           | 14.6                                                                    | 20.9   |
| West Karbi Anglong | 23.0                                                                    | N/A    |

The differences regarding the percentage of current users ever told about the side effects of the current method in NFHS-4 and NFHS-5 in the districts of Assam have been shown here. The percentage of current users ever told about the side effects of the current method as per NFHS-5 was 62.4% and as per NFHS-4 was 46.6% in India. The current method as per the NFHS is based on current users

of female sterilization, IUD/PPIUD, injectables, and pills who started using that method in the past 5 years (Table 4).



**Figure 3: Showing the bar chart (stacked) depicting the percentage of health workers who ever talked to female non-users about family planning for all the districts of Assam.**



**Figure 4: Showing the column chart (stacked) for the percentage of current users ever told about the side effects of the current method for all the districts of Assam.**

Hailakandi (94.7%), Karimganj (84.5%), and Majuli (85.6%): These districts have high percentages of NFHS-5 and are well facilitated in inter and intra-personal communication regarding family planning. That is why Kamrup (M) has 50.3%, Kamrup (R) 58.9%, and Udalguri

47.2% – all of them significantly lower than the average, proving that the choice of family planning service needs a quality boost. These can be caused by various factors including more trained health workers and health promotion, enhanced physical health infrastructure, health policies and programs and health systems enhancement, and cultural and economic factors (Figure 4).

**Table 4: Showing the percentage of current users ever told about the side effects of the current method for all the districts of Assam.**

| District           | Current users ever told about side effects of the current method (%) |        |
|--------------------|----------------------------------------------------------------------|--------|
|                    | NFHS 5                                                               | NFHS 4 |
| Baksa              | 76.2                                                                 | 78.4   |
| Barpeta            | 55.1                                                                 | 48.2   |
| Biswanath          | 73.5                                                                 | N/A    |
| Bongaigaon         | 65.1                                                                 | 60.4   |
| Cachar             | 82.2                                                                 | 78.5   |
| Charaideo          | 69.5                                                                 | N/A    |
| Chirang            | 75.3                                                                 | 38.9   |
| Darrang            | 51.2                                                                 | 51.7   |
| Dhemaji            | 67                                                                   | 44.8   |
| Dhubri             | 76.7                                                                 | 19.9   |
| Dibrugarh          | 76.5                                                                 | 71.3   |
| Dima Hasao         | 66.6                                                                 | 37.9   |
| Goalpara           | 68.1                                                                 | 53.5   |
| Golaghat           | 63.3                                                                 | 66.4   |
| Hailakandi         | 94.7                                                                 | 77.4   |
| Hojai              | 73.5                                                                 | N/A    |
| Jorhat             | 62.6                                                                 | 68.0   |
| Kamrup (M)         | 50.3                                                                 | 47.9   |
| Kamrup (R)         | 58.9                                                                 | 52.1   |
| Karbi Anglong      | 74.6                                                                 | 62.1   |
| Karimganj          | 84.5                                                                 | 65     |
| Kokrajhar          | 51.3                                                                 | 50     |
| Lakhimpur          | 80.3                                                                 | 70.9   |
| Majuli             | 85.6                                                                 | N/A    |
| Morigaon           | 66.4                                                                 | 40.4   |
| Nagaon             | 73.7                                                                 | 61.0   |
| Nalbari            | 60.6                                                                 | 32.2   |
| Sivasagar          | 80.1                                                                 | 56.0   |
| Sonitpur           | 72                                                                   | 56.8   |
| South Salmara      | 71.8                                                                 | N/A    |
| Tinsukia           | 72.2                                                                 | 51     |
| Udalguri           | 47.2                                                                 | 52.1   |
| West Karbi Anglong | 80.5                                                                 | N/A    |

## DISCUSSION

### Unmet need for family planning

The reduction of the total unmet need for family planning in most of the districts of Assam over NFHS-4 and NFHS-

5 is appreciable which indicates that the female population has proper access to family planning services which is vital in improving their maternal and child health as well as in attaining our set targets in population regulation.

However, the prosecution of inequalities in the districts has been contentious. Thus, Kamrup Rural has a much higher unmet need, almost 3 times Biswanath, which shows great disparities in the need for and the uptake of family planning services. This disparity could be due to a variety of factors, including

Population mobility and changes in other demographic indicators that affect fertility include a high number of migrants, or refugee-like populations, with different family planning needs, and cultural practices, together with the increase of women of childbearing age.

### ***Accessibility to healthcare facilities***

Some families because of geographical barriers won't be able to access family planning.

Challenges faced by the health systems such as logistic issues regarding contraceptive supply chain, and a short supply of qualified health staff.

Culture and religion can play their part in people being reluctant to use modern forms of contraception.

Family planning implementation and outreach initiatives vary per district.

The COVID-19 outbreak may have hindered the availability to family planning services.

The existing unmet requirements of women in districts such as Darrang, Bongaigaon, Nalbari, and Udalguri, among others, are increasing. This may be due to the following reasons: population dynamics which refers to changes in a country's age structure and influx of migrants; health system challenges including disruptions in the supply chain for contraception and a shortage of skilled human capital in the area; and the COVID-19 outbreak may have negatively impacted family planning services in these countries.

### ***Quality of family planning services***

Health workers are increasingly discussing family planning with female non-users, indicating increased advocacy for education and awareness among women. However, the differences in this aspect indicate that the quality of services provided to women in each district is not comparable to that of other districts in the state. The fact that some districts have a drop in this statistic is problematic and could signal the following - resource constraints: some districts may have limited health staff and budgets for health campaigns; health workers in some districts may lack training on how to effectively handle

family planning concerns with non-users; and cultural barriers: some people may be sensitive to family planning topics, particularly non-users.

Women with the greatest level of education had larger unmet needs than women in other educational attainment categories, it must be noted that the unmet need for spacing grew with education level, but the unmet need for limiting remained relatively constant.<sup>12</sup> This shows that women with greater education are more interested in spacing rather than limiting; nonetheless, limiting procedures are more widespread in India, particularly female sterilization.<sup>13</sup>

The National Family Planning Program has undertaken several projects, including Mission Parivar Vikas, which was started in 2016 to enhance access to contraception and family planning services in seven states with high total fertility rates.<sup>14</sup>

### ***Implications***

#### ***Progress towards SDGs***

As a result of the overall decreasing trend in unmet demand for family planning, Assam is on track to meet SDGs 3 and 5, which are good health and well-being and gender equality, respectively. However, it should be highlighted that the districts' performance remains lopsided, implying that this advancement does not apply uniformly.

#### ***Maternal and child health***

Increased access to family planning services will improve maternal and child health by allowing women to space their pregnancies and avoid difficulties during pregnancy.

#### ***Women's empowerment***

Family planning services empower women by allowing them to make their own decisions about reproduction.

#### ***Population dynamics***

Improving family planning services will help regulate population increase, which has policy implications for economic growth and development, as well as resource management.

#### ***Health system challenges***

These discrepancies identify possible areas of vulnerability in the district's health system that must be addressed.

#### ***Policy implications***

Based on the findings, a new policy should be developed that will address the needs of a specific district rather than the entire state.

## CONCLUSION

It is reasonable to compare NFHS 4 and 5 data on the quality of family planning services and unmet family planning needs in Assam. It holds the key to providing a serious understanding of the level of its progress in the domain of reproductive health, areas of concern that still require attention, and strategic planning for equal access to the best array of family planning services to people and couples in Assam.

### Recommendations

#### Targeted interventions

Conducting comprehensive needs assessments at the district level is crucial for identifying barriers to family planning service utilization. A 'High-impact practice' plan should be developed, which involves prioritizing effective practices and coordinating and adapting them to each district. Peer education initiatives can be organized in target communities to encourage members to use family planning services.

#### Improve accessibility

Mobile clinics can visit underserved communities to extend family planning approaches. E-health systems can be created to focus on family planning.

#### Cultural sensitivity

It is also important to enshrine the support of religious leaders and community elders in the family planning promotional crusade. The other important recommendations are to train the health workers on aspects of communication and handling of the people and their cultural beliefs.

#### Strengthen health systems

Creation of awareness by conducting meetings as well as improving seminars and training for the health care personnel with regards to the family planning methods and counseling interventions. Implementation of a concept of sharing skills where there will be a pairing of skilled family planning service providers with less skilled individuals in a facility. There is a possibility to develop a well-fixed supply chain concerning the supply of contraceptives which would minimize the problem of stock out. This must be part of other health care services such as postnatal care and child immunization. Marketing the work of quality assurance and providing check-ups of the family planning services that clients are receiving at an agreed time can also pave the way for achieving success at the grassroots level.

#### Information and awareness

Mass awareness creation initiatives for family planning should be organized via television, radio, and social media

platforms. To guarantee that people are taught the correct components of family planning, it is best to design and develop age-appropriate family planning and sex education programs for school implementation. Participation in some activities, such as hosting community events and health fairs focused on family planning, is also required. People will receive information on family planning via once-daily SMS messaging.

#### Increased male involvement

Expanding the campaign to encourage males to use family planning services can also be taken into consideration. Creating male-friendly techniques to encourage males to participate in family planning counseling at health institutions can greatly contribute towards achieving the goal of family planning services. Teach male CHWs how to involve other male community members in topics related to family planning. Improve father-sensitive prenatal and postnatal care, including family planning components. Increase the use of role models in the media to promote family planning plans among men.

#### Policy and governance

Coordinating and improving present family planning policies in light of current national and international norms and regulations. A steering committee should be formed at the state level to oversee all family planning initiatives and communicate with other departments. Introduce a performance-based bonus for districts that meet the established family planning targets. Collaborate with NGOs and private organizations to increase access to family planning services.

#### Research and innovation

Sponsor studies to identify new contraception options for usage in the country. Establish, test, and scale up operational innovations such as social marketing for family planning. Also, conduct an operational study to identify the difficulties that impede the flow of service delivery. Identify emerging trends in the use of artificial intelligence and big data analytics to analyze unmet family planning requirements.

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*Ethical approval: Not required*

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