Family Planning in Bangladesh: A mixed method study to investigate the challenges of reducing unmet need for better service provision

A thesis submitted in partial fulfilment of the requirements for the Doctor of Philosophy (PhD)

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Human Geography

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Declaration

I declare that this thesis is my own work and the materials used throughout have been fully and properly acknowledged.

Mohammad Badsha Hossain

Abstract

In recent years, Bangladesh has undergone rapid fertility transition, along with notable progress in various family planning determinants, which is largely attributed to the Government Family Planning programme. Demographic and Health Survey data reveal that despite the formidable success in family planning, the programme has experienced slow progress overall and a plateau situation has been reached, specifically with regard to stagnant fertility, slow progress in unmet need reduction, and contraceptive use in the last decade. This study investigated and analysed potential gaps in family planning programme in order to improve contraceptive services and their provision and delivery, where the aim is to reduce unmet need which highlights the socio-cultural settings of the community and has shed light on the factors behind the slow progress of the current programme. The exploration of the existing gaps in unmet need for family planning has warranted some ways out for the increase of contraceptive use among married women, particularly by upholding their choices and preferences to have an impact on the reduction of maternal and child mortality generally.

The study employed a mixed method approach, with greater emphasis placed on the qualitative online semi structured interviews conducted with 28 diverse stakeholders, including family planning practitioners, local government representatives, teachers, and religious leaders from both field and policy levels. The interviews were conducted between February to April 2022 during the peak time of the Covid-19 pandemic. Critical reviews of various Bangladesh demographic and health surveys with other national and international organization data contributed to the quantitative part of the research. Selected variables from robust BDHS data sets facilitated the initial foundation of the research on which extensive analysis with qualitative data was conducted leading it to a mixed method study. Quantitative data supplement the views and opinions revealed by the respondents in the qualitative interviews.

The findings revealed that needs, preferences, and choices of women regarding access to contraceptives are often impacted by their autonomy along with sociocultural and religious factors embedded in the study settings. The influence within the family of husbands and in-laws and the socio-cultural and economic factors operating beyond the family have been identified as contributing factors in the creation of women's unmet need for family planning. The lack of domiciliary and clinical staff, poor operational functions within the government facilities, and lack of policy initiatives from the organisational point of view, are also revealed as potential factors which have resulted in slow progress in fertility reduction, increased contraceptive use, and reduction in maternal and child mortality. The thesis concludes with recommendations for policy initiatives to address the service provisions and to improve the existing service provision to improve family planning outcomes in the community.

Keywords : Unmet Need, Contraceptives Preferences, Women Autonomy, Challenges, Mixed Method, Service Provision ,Family Planning, Bangladesh

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List of Abbreviations

ANC	Ante Natal Care
BBS	Bangladesh Bureau of Statistics
BCC	Behaviour Change Communication
BDHS	Bangladesh Demographic & Health Survey
BFS	Bangladesh Fertility Survey
BMMS	Bangladesh Maternal Mortality Survey
CAR	Contraceptives Acceptance Rate
CAR	Contraceptives Acceptance Rate
CBD	Community Based Distribution
CC	Community Clinic
CHCP	Community Health Care Provider
CHT	Chattogram Hill Tracts

DDS	Drug & Dietary Supplements
DHS	Demographic & Health Survey
ECP	Emergency Contraceptives Pill
FGD	Focus Group Discussion
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GO	Government Organization
GOB	Government of Bangladesh
HA	Health Assistant
HI	Health Inspector
HNPSP	Health, Nutrition &Population Sector Program
HNSDP	Health & Nutrition Sector Development Program
HPSP	Health & Population Sector Program
ICPD	International Conference on Population & Development
IMR	Infant Mortality Rate
IUD	Intra Uterine Device
KAP	Knowledge, Attitude & Practice
KWV	Kilo Watt Volt
LAM	Lactational Amonaeric Method
LAPM	Longer Acting Permanent Method
MCH	Maternal & Child Health
MCH-FP	Maternal & Child Health Family Planning
MEFWD	Medical Education & Family Welfare Division
MIS	Management Information Service
MMR	Maternal Mortality Rate
MOHFW	Ministry of Health & Family Welfare
NGO	Non-Government Organization
NIPORT	National Institute of Population Research & Training
NPC	National Population Council
NRR	Net Reproductive Rate
PNC	Post Natal Care
SACMO	Sub-Assistant Community Medical Officer
TFR	Total Fertility Rate
UFPO	Upazila Family Planning Officer
UHFWC	Union Health & Family Welfare Centre

UNFPA	United Nation’s Fund for Population Activities
UNICEF	United Nation’s Children’s Emergency Fund
WHO	World Health Organization

Chapter 1 Introduction

1.1Overview of the research topic

Family Planning (FP) programme of Bangladesh is a success story. Fertility decline played a significant role in creating the success story. Fertility is considered to be one of the key factors in determining the country's future demographic outcome. Again, fertility decline is impacted by the effective FP services and provisions. Despite the past success of FP , the present programme is undergoing some of the challenges like slow increase in contraceptives use, almost plateauing situation of the fertility and slow reduction of unmet need. On the backdrop of this situation, the thesis has attempted to highlight the issues of unmet need which are acting as barriers for better FP service provisions.

1.2 Problem and aims

The overall aim of this research is to identify and analyse potential gaps in FP provision across Bangladesh, and to understand factors for improvements to be made in contraception provision and delivery, in order to reduce unmet need for FP as it occurs at the intersection of population and social geographies; an analysis of FP organisation and management is included.

The use of FP services is shaped by offer and demand factors, interlinked within broader complex socio-cultural contexts. Demo-social, cultural, and economic dynamics are shaping geographic diversity and changes, resulting from household power dynamics in decision-making around reproduction and providing influential context. This thesis focuses on contraceptive availability and supply as offer factors and how they match women and families' needs for FP as demands.

Bangladesh is undergoing a very rapid fertility transition, largely attributed to the government FP programme, strongly supported by international development agencies' joint efforts to promote FP. The FP programmes are implemented by the Directorate General of FP (DGFP), under the Ministry of Health. The dominant population policy discourse (national and international) promotes FP as a means to reduce fertility and accelerate economic growth (the demographic dividend), as well as a means to help reduce infant and maternal mortality rates (IMR and MMR, respectively), while global reproductive health and rights discourses emphasise women's needs and freedom of reproductive choice as core concepts. This tension is key to understanding the dynamics of FP provision in Bangladesh. The concept and definition of 'unmet need' for FP are critically analysed within the gender development literature, population policy framework, and the global reproductive health discourse, before identification and analysis of the nature and geography of gaps are made between unmet need and the provision of contraceptive methods.

1.3 Purpose/scope of the research

Bangladesh has shown some tremendous demographic achievements as a result of a rapid decline in fertility (6.3/woman in 1975 to 2.3/woman in 2011), and an increase in contraceptive use (8% in 1975 to 61% in 2011), which have been acclaimed globally (World Bank, 2019; Rahman, 2018, NIPORT et al., 2023). During this phase, despite such success, Bangladesh experienced a decade-long fertility plateau of around 3.3 during 1991-1999. Such fertility decline strongly associates with effective family planning services. Fertility declined from 6.3 to 2.3 per woman between 1975 to 2011.However it has remained stagnant during the Bangladesh Demographic & Health Surveys (BDHS) conducted from 2011 to 2022 (NIPORT et al., 2013; 2016; 2020; 2023) which means that Bangladesh has undergone another plateau. Likewise, contraceptive use multiplied by approximately eight times during this period (1975 to 2011). However, progress from 2011 to 2022 was very slow, contraceptives use rising to just 64% from 61%. Unmet need, often defined as the need for FP services, reduced from14% to 10% after stagnating at 12% for around a decade. The use of the modern FP methods (e.g., implant, Intra Uterine Device (IUD), female and male sterilization) is slow, or fell during this time, even in the case of sterilization. An increase in the use of traditional methods (e.g., withdrawal/abstinence, safe period) shows them hovering between 9% to 10% over last decade. Moreover, fertility and contraceptive use range widely in their variations. Most western parts of the country have already reached, or are close to reaching, the replacement level of fertility (2.1), while the eastern parts of the country lag behind with almost one child more than the replacement level (NIPORT et al., 2023).

Despite the past successes of FP in Bangladesh, as a country it still faces challenges in its FP programme. Greater reliance on less effective short-term methods (e.g., condom, pill, injection) is one of the major characteristics of the programme, whereas long term/clinical methods (implant, IUD, sterilization) are considered to expedite a reduction in fertility. Early marriage, and its outcome one fourth pregnancy with the teenage girls with early childbearing and then switching to short term contraceptive methods to avoid further pregnancies, are some of the existing patterns among couples (El-Saharty, Ahsan & May, 2014; NIPORT et al., 2013, 2016, 2020, 2023).

A key driver to declining fertility is to increase the service provisions of FP. Different policy implementation approaches and service packages can be initiated to address the specific socio-cultural context. For example, as social context and care-seeking behaviours differ in eastern parts (Chattogram and Sylhet), compared to western parts of the country (Rajshahi and Khulna), different campaigns for specific segments of people and FP service delivery components for people in hard-to-reach areas can be implemented to address the differences. Generating demand for FP through a client-segmented approach (e.g., spacers vs. limiters, low-parity vs. high parity), and introducing service packages by region can also be recommended for reducing unwanted pregnancies (NIPORT et al., 2023). Shifting

the programme strategy to respond to the unmet need issues, addressing the regional variations in services, and strengthening partnerships among various government and non-government organizations (NGOs) have created a space to explore the root causes of the issues by providing greater research focus (El-Saharty, Ahsan & May, 2014). Focus on the implementation strategy of FP can help explore the gaps in the existing system.

This research is significant as it aims to highlight policy related issues by examining existing gaps in the FP services. The purpose of this project is to minimise the research gap that exists in implementation issues by investigating the hidden reasons for the gaps in FP services, and also to identify policy implementation strategies to address those gaps.

1.4 The choice of topic

A scrutiny of Bangladesh's FP programme over the last three decades reveals features which may be summed up as: a plateauing situation of fertility (2.3/woman in the last four surveys), slow progress in contraceptive use (61% to just 64% from 2011 to 2022), and unmet need (14% to 10% from 2011 to 2022). Bangladesh has the highest adolescent marriage rate in the Asia and the fourth highest globally. Adolescent pregnancy outcomes as a result of child marriage are also a policy concern for the FP programme as the rate of 128 births/1000 girls aged 15-19 is the highest in the Asia-Pacific region (WHO, 2020). Additionally, high adolescent fertility in the region with high contraceptive use, and low fertility in the region with low contraceptive use have been found, which seems unlikely. Rather, it seems to be a unique and unusual demographically paradoxical situation as, ideally, high fertility prevails in a region with low contraceptive use, and vice versa. This paradox deserves some attention to identify its demographic causes. Moreover, statistical data demonstrates that both child and maternal mortality are two important outcomes of the FP programme and are found to have declined more rapidly in last two BDHS in 2017-18 and 2022, rather than following the slow trend found in BDHS reports over the previous ten years. Slow progress or stagnant situations of some important determinants of the FP programme triggered my interest. My positionality as a FP practitioner also allowed me to monitor and signpost the major changes in FP implementation processes both inside and beyond FP. As the project was endorsed and sponsored by my Government, I also felt professionally obligated to contribute more to my organization with an enhanced focus on knowledge by exploring the gaps in FP services. These phenomena provided my rationale to chase challenges in the implementation process of FP so that they can have a more positive impact on the service provisions, resulting in widening contraceptive choices and the preferences of women inside and outside the family. The initiative to explore the gaps extends to also focus on adolescent pregnancy, which is linked to child and maternal mortality.

The below section highlights the aspects of geography in relation to this thesis.

1.5 Geographical scope

The role of geography in this thesis is unalienable as health outcomes and behaviours may vary across people and places. In a geographic context where a person lives is as important as who they are in terms of their health (Twigg, 2014). Space and place as geographic contexts have recently been dominant in public health discourse. Moon (1995) argued that the sociologists, public health practitioners, and geographers were keen to explore the importance of place in health outcome. Public health researchers became interested to determine the degree how much of the behaviour of an individual contributes to individual health outcome and how much of space and place can be ascribed (MacIntyre et al.,1993). Displaying statistical data Twigg, Moon & Jones (2000) showed how diseases trend differed basing on the geographical locations or regions escorted with socio cultural status and inequality in Southeast Region in England.

Though both 'space' and 'place' are interchangeably used in general discourse, there lies difference between space and place. Space is often defined as the simple point or area location based on the Euclidean geometry. For example, the distance between a health facility and the populations they serve in the community. Contrastingly, place has a deeper meaning which takes into consideration of the social relations and social construction of space. It is meant to be a core aspect of forming the social relations (Twigg,2014). As this thesis deals with the unmet need in using contraceptives among women, understanding women empowerment in various dimensions, for example, in various geographical locations is important. Though Bangladesh shares a common culture all over the country, the various geographical region of the country possesses its own culture. These regions have variations in their socio-economic and demographic characteristics. Women of different regions have different fertility preference and contraceptives norms (Deb, Kabir & Kawsar,2011). Despite the recent success of Family Planning with increased rate of contraceptives use, accessibility to the healthcare services remains still poor in the rural areas. Apart from the urban-rural disparity, existing gaps in fertility control indicators among various rural areas are still a major problem for the policy makers of Family Planning. Rural women in Bangladesh are seldom familiar with reproductive autonomy and most of them are out of FP decision making (NIPORT et al.,2014;Rahman,Mostofa & Hoque,2014)).Although decision making in fertility is a major concern in reproductive autonomy, it has been evidenced that most of the rural women are not well aware about the rational ways of decision making even among the modern contraceptives users (Rahman, Mostofa & Hoque, 2014).Apart from this discussion, the thesis has provided more information regarding geographical scope in the Literature Review and Quantitative analysis chapters.

1.6 Research questions

The thesis centres on the critical analyses of unmet need for FP and how FP provision may be improved—this is the single overarching aim. The project examines regional and multiscale differences in FP provision and intra-household childbearing decision-making processes to understand women's/families' reproductive health needs and the potential mismatch with contraceptive methods, provision, and delivery, which are the interlinking issues of service provision.

To address the overarching aim, the thesis examines the following research questions:

1- How do the regional differences in unmet needs occur and how can they be minimized?
2- To what extent do the limitations of community based female workers' home visits and the poor functioning of facilities contribute to the unmet need for Family Planning?
3- How are decisions around needs, preferences, and reproduction made and negotiated within and beyond the family?
4- Is adolescent/early pregnancy a significant factor in FP services linking to maternal and child mortality?
5- How can increasing the quality of care narrow the gap between the demand for, and offer of, FP?

An attempt to detail the research questions provides a closer look at the expected outcomes of the project which the research questions investigate. The first research question deals critically with the issue of unmet need (i.e., FP need, or demand not met) with an exploration of regional variations. It also highlights the ways unmet need can be minimized. Community visits by the FP field workers and the limitations in performing home or facility visits could provide greater insights into the existing gaps derived from them. Decisions regarding FP contraceptive choices and preferences of women are pivotal as this impacts their reproductive decisions. The question illustrates the dynamics of decision-making based on women's empowerment and other socio-cultural settings which shape the argumentative discussion. Adolescent pregnancy, a burning issue in the present context, is critically discussed as to whether it has any associations with infant or maternal mortality. The final research question aims to uphold the quality-of-care issues in FP services by focusing on ensuring quality which can narrow the gaps in service provision.

1.7 Chapter synopsis

The thesis has eight chapters. Following Chapter 1 (Introduction), Chapter 2 (Literature Review) conceptualizes the critical views on unmet need issues from various perspectives and shapes the skeleton of the thesis. All other embedded issues, in addition to unmet need, enrich this chapter, linking the research questions to the single overarching aim of the project.

Chapter 3 discusses the contextual issues of the current FP programme in Bangladesh, entailing the historical background of FP as an organization and its present status compared to its sister organization, Health. Discussion of population policy followed by other contemporary issues in FP will make a solid platform for the development of the academic discussion in the next chapter.

Chapter 4 initiated with a discussion of the positionality of the researcher accommodates the in-depth methodological approaches in which I intervened in various phases, justifying the approaches. The methods for designing the online field tour, formulating the relevant questionnaire, the recruiting strategy among stakeholders, and the interviewing technique are included.

Chapter 5 discusses the quantitative findings of the review of the survey reports, mostly in graphical format.

Chapter 6 presents the qualitative findings in narrative form to demonstrate the views and opinions of the stakeholders.

Chapter 7 provides detailed discussion of the findings. It includes my critical evaluation of the findings, accompanied by academic references to the contextual issues.

Chapter 8 accommodates my concluding remarks on the thesis with a summary of the findings. This chapter also records my recommendations to policy makers and practitioners based on the findings of my project

1.8 Summary

The chapter has shaped the research topic with a brief analysis of the problems, purposes, and research questions. Based on this, Chapter 2 critically develops the conceptual foundation of the thesis by discussing the academic materials linked with the research questions.

Chapter 2 Literature Review

2.1 Introduction

In this chapter I attempt to develop a theoretical framework for the research by discussing the key academic literature in the field of FP. This allows exploration of the gaps in the literature that need to be addressed. The chapter also highlights my attempt to define the research issues, what it is that needs to be addressed, and how and why they are significantly related to the potential outcome of my research. This lays the foundations for the purpose, foci, research questions, methodology, data analysis, discussion, and conclusion of my research (Cohen et al.,2018). In addition to a detailed conceptual analysis of unmet need, the chapter discusses other concepts which better address the research questions.

2.1.1 Purpose of the Literature Review

I employ the 'narrative review' approach to analyse the literature review in which I conduct a reasonably comprehensive assessment and interpretation of the key works in the area of my research topic. As my research seeks opinions, views of the respondents, it has more linkages with the social science. Narrative criteria of literature review is found to be well-fitted with my research where the researcher has the flexibility to choose and review the key works unlike the systematic review, restricted by some set protocols in a particular area. Again that doesn't mean that narrative review is not comprehensive rather it gives liberty to the researcher to decide to select the key works without being bound by any external set of criteria . One of the criticisms of the narrative review is that it is a bit unstructured and sometimes difficult to reproduce. However, the criticism is often aimed at poorly conducted literature review which are not representative of non-systematic reviews (Clark et al.,2021).

This allows me to identify relationships with the theory I initiate with the research. Theory does not necessarily denote the concept of 'grand theories', rather theory can also mean the background literature on a specific research area (Clark et al., 2021). The framing of the literature review helps to address the research questions.

The literature review can provide credibility and legitimacy for my research as it displays the extant knowledge on the key issues, theories, and methodological approaches required to conduct a research project (Cohen et al., 2018). It also initiates the temporal, spatial, and political context by setting out the rationale for the direction in which the research moves. It helps identify the key concepts, topics, theories, issues, and ideas in the research, based on which the methodology plan can be established and justified. Finally, based on my chosen area of research, I make the focus of my research with initiating the literature review (Creswell, 2012; Heath, 2009; Wellington, 2015).

Academic materials were consulted in the university library, on the University's library portal and Google Scholar home page. This facilitated access to a wide range of books (both hard copies and electronic), peer reviewed articles, theses, abstracts, academic journal articles, professional societies, pre-print repositories, universities, and other scholarly organizations (Clark et al., 2016). Additionally, the Demographic Health Survey (DHS) website and online resources of United Nations bodies, including the United Nations Fund for Population Activities (UNFPA), the World Health Organisation (WHO), the United Nations International Children's Emergency Fund (UNICEF), and the World Bank (WB) were on my search lists.

2.2 The issue of unmet need for FP

Details of the unmet need issue are conceptually defined from various dimensions. The analysis highlights the global and local perspectives of the issue against the impact of creating gaps in the service provision of the FP programme.

2.2.1 The concept of unmet need for FP

The concept of 'unmet need' has its origin in the first fertility and FP surveys conducted during the 1960s under the label of "Knowledge, Attitude, and Practice" (KAP) gap (Casterline & Sinding, 2000). The term, 'Unmet Need for Family Planning' is often defined by survey data as calculating the percentage of sexually active women who do not desire more children, or who want to prolong the time between births by at least two years, and yet who do not report using any modern or traditional FP contraception methods (Kols, 2008). To be included in the general definition of unmet need, a woman must be sexually active and able to conceive. Pregnant and amenorrhoeic women are also deemed to have an unmet need if their pregnancies are mistimed and/or unwanted and they are not using any FP contraceptive method (Westoff & Pebley, 1981).

The term unmet need is commonly used by personnel running FP programmes in various ways as it indicates whether, or not, they are on track with meeting the needs for FP. Data on unmet need also benefit programme personnel by identifying the number of women at high risk of unwanted or unintended pregnancy and who are thus more likely to adopt a FP method than other non-users. Knowledge of an unmet need upholds women's reproductive choices.

2.2.2 How unmet need is measured

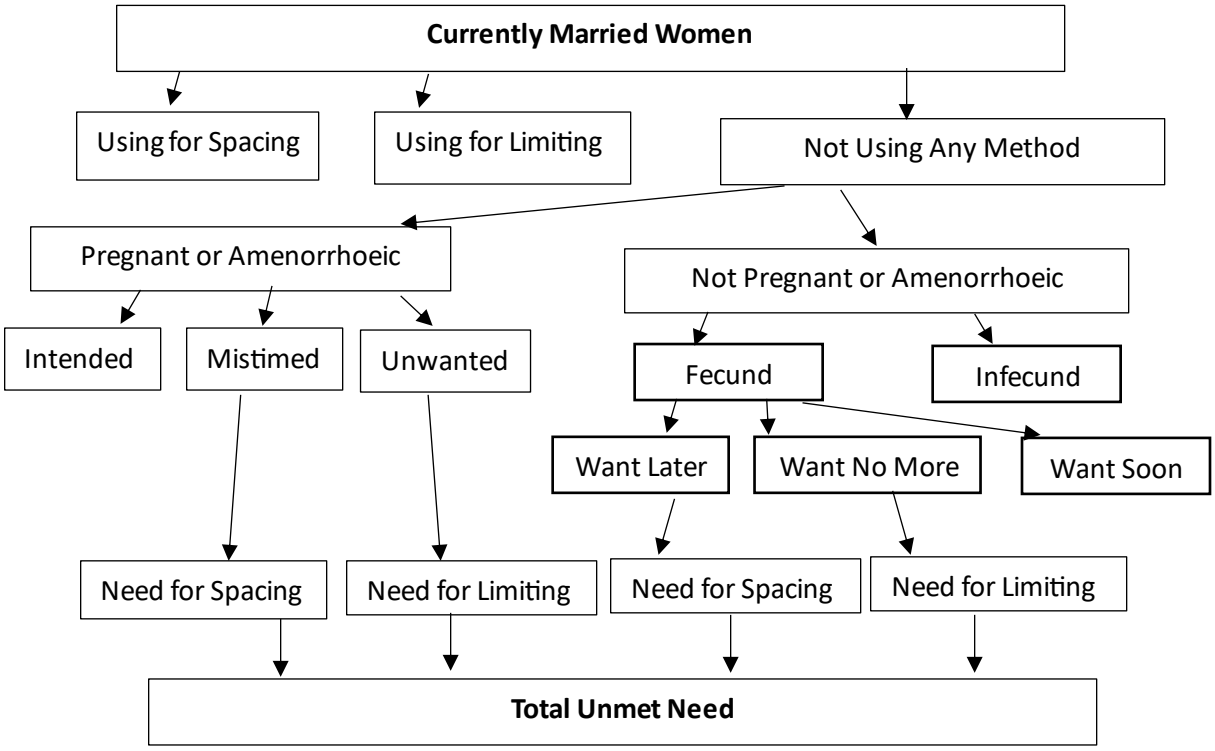

Figure 1: Measurement of unmet need

Source: Westoff (2006,p.41)

As indicated in the above figure 1, unmet need is generally measured in the household surveys in which married women are asked some precisely worded questions. Westoff (2006) used a flow chart which clearly indicates the steps for calculating unmet need. Among currently married women, those who are using contraceptives are excluded from the calculation. Women not using contraceptives are divided into 'pregnant or amenorrheic' and 'not pregnant or amennorheic'. Pregnant women whose pregnancy is mistimed or unwanted are included in unmet need data, but intended pregnancies are excluded. Non-pregnant or amenorrheic fecund women who want no more children, or who want them later, are calculated as having unmet need proportionately. Fecund women who want children soon are not included in unmet need. Mistimed pregnancies are defined as the 'need for spacing' and unwanted pregnancies are termed 'need for limiting'. Non pregnant women who want child later are termed 'need for spacing' and those who want no more children are termed 'need for limiting'. Unmet need is the sum of unmet need for spacing and unmet need for limiting. The measurement of unmet need does not include an assessment of whether women want, or intend, to use contraception, or not (World Bank, 2010).

Demand for FP and contraceptive use are the two factors behind the rise and fall of the levels of unmet need. A low level of unmet need may also reveal the fact that women are not interested in small families,

rather they want larger families. Desired family size and contraception prevalence need to be critically examined to assess the need for small families and well-spaced births.

Casterline and Sinding (2010) and Westoff (2006) deem that data on unmet need may underestimate demand for FP as unmarried women are often excluded, collecting information about them can be difficult. Data also fail to cover the women who want to switch to a different FP method, other than contraception, for greater safety and effectiveness (Dixon-Mueller & Germain, 1992).

Concerns about side-effects of methods, religious stigma or taboos, the fear/belief of failing to have a later pregnancy, the quality of care or services, or the cost might all prevent women from adopting a FP method, even though they want to avoid or postpone pregnancy. Sometimes these situations also explain unmet need. Kols (2008) claims that women's and men's personal decisions regarding family planning can increase unmet need.

2.2.3 Various ways of measuring unmet need

As the exact diction 'unmet need' was first initiated by Westoff (1978), his clarification of its meaning cannot be overlooked. He suggested eight measures to evaluate the unmet need. His definition measured various groups of women as a denominator, varying from currently fecund married women to totally excluding the conceived and amenorrhoeic women from the study. Westoff and Pebley (1981) promulgated different definitions of unmet need by using World Fertility Survey data from 18 countries and demonstrated that each definition differs from others substantially with regard to the proportion of unmet need. They also suggested an expansion of the definition of unmet need to cover both desire to space and desire to limit childbearing.

Nortman (1982) used Contraceptive Prevalence survey data on women's preference for timing or limiting births and further commented to cover pregnant, breastfeeding, and amenorrhoeic women in the unmet need for FP during the survey. Nortman deems that there may be many women giving birth every year who did not want to be pregnant. Rather, they conceive because of the failure to practise any FP, often due to lack of knowledge of contraceptive use.

Westoff and Ochoa (1991) supported Nortman's argument by saying that the women who did not want to be pregnant at that time had a prior need for FP contraception, thus they had a need unmet. They suggest that pregnant woman and postpartum amenorrhoeic women should be in this group based on their retrospective desire for their current pregnancy or last birth.

Westoff's (1988) framework for estimating unmet need with four discrete subsets has been popular until today. Spacing unmet need comprises two subsets: pregnant and amenorrhoeic women whose current or most recent pregnancy was mistimed; and non-pregnant and non-amenorrhoeic fecund woman who

wish to defer their next birth. In the case of limiting as an unmet need, another two subsets emerge: pregnant amenorrhoeic women whose current or most recent pregnancy was unwanted; and, non-pregnant and non-amenorrhoeic fecund women who wish to terminate childbearing altogether.

2.2.4 Unmet need of wives, husbands, and couples

The general definition of unmet need seems to be debatable as it only covers married women (although more recently it has included those who are unmarried). Becker (1999) showed that unmet need can be calculated by taking account of the wives, husbands, and couples' reports. Data from the DHS in Bangladesh, Zambia, and the Dominican Republic have been used to propagate the newly expanded definition of unmet need in which responses of the prospective fertility desires and willingness to use FP contraceptive measures have been considered. Data analysis clearly shows that unmet need calculated for a married woman differs considerably from the unmet need calculated for husbands and couples (Becker,1999). Spousal disagreement, or lack of communication between husbands and wives, regarding the use of contraceptives, or their ultimate reproductive goals, can be a major cause for this difference. Becker (1999) also foreshadows some clarifications of these differences, found by analysing the different sets of data among various cohorts in the three countries. He considers men to be outside of the FP programme as fewer methods were for them and women had been taking the lions portion of the burden, using FP methods individually under the medical model of contraception. So, it is reasonable that an unmet need is always considered for women. Becker (1999) shared a study by Ngom (1997), both argue that the unmet need estimated for women is clearly different from the unmet need of couples. As the difference is large, it is important to acknowledge implications for the programme. The result shows that if one spouse wants no more children, but the other disagrees, adopting a method may satisfy one spouse but at the same time dissatisfy the other. Examining the couple's unmet need, Becker also shows that when there is agreement between spouses about limiting or spacing births or using FP contraception, there lies greater likelihood that one or both will adopt FP methods than when there is the same level of unmet need among wives, but less understanding between spouses. There is no denying the fact that women are bound to agree with their husband's childbearing desires, otherwise they are at risk of domestic violence or divorce. Becker recommends mass media campaigns with special messages targeting the males to encourage their contribution in adopting FP contraception, implicitly acknowledging their poor participation in the sexual reproductive decision-making process and their usual desire for larger families than the women desire. Becker hopes that such campaigns can raise awareness among men and ensure equal decision-making when couples consider the size of family they desire.

The new coverage of unmet need must take into consideration the unmet need of individual couples during programme implementation. Increasing the Contraceptive Prevalence Rate (CPR) cannot be thought of without it.

2.2.5 Revised definition and its impact on fertility

One of the criticisms of the conventional definition of unmet need by Dixon-Muller and Germain (1992) is that it does not include either unmarried women or men despite them being at risk of unintended pregnancy. Therefore, it overlooks the reproductive health needs of women which also supports the argument of Hartman et al., (1987), i.e., that it is not a reproductive health measure as it poorly serves women's health needs. Dixon-Muller and Germain (1992) point out another limitation of the conventional definition, it does not cover women who are pregnant as a result of method failure or those using inappropriate methods.

As unmet need is a valuable concept for the advocacy and development of FP policies, and the implementation and monitoring of the FP programmes; it has received unprecedented levels of scrutiny since it was first used. However, it became more important after it became a Millennium Development Goal (MDG) indicator in 2008 (Bradely et al., 2012). Bradely et al., (ibid.) modified the definition of unmet need with six changes to allow such needs to be calculated consistently over time and across all surveys all over the world. The modifications are as follows:

a) removed calendar data from calculation

b) did not assume an unmet need status for women missing key data

c) simplified classification of spacing versus unmet need for limiting

d) shortened the duration for which women are considered to be postpartum amenorrhoeic

e) standardized the calculation of infecundity

f) explicitly handled the inconsistencies (Bradely et al., 2012, p.14).

The immediate impact of this revised definition has been seen in the overall consistencies of unmet need from the previous definition in almost all the surveys. This happened due to the removal of the calendar data and refinement of the unmet need for spacing and limiting, along with other changes stated. The various previous definitions of unmet need produced various estimates which were not comparable across all surveys. This was considered to be a barrier for tracking the trends in unmet need across the surveys, or among different countries.

One of the commonest queries is how this new understanding of unmet need would affect fertility. Bradely et al., (2012) worked with data from 59 countries from 2000 and tried to answer the query of how much fertility was expected to decline if all the demands of FP were to be satisfied. They found the impact on fertility of satisfying unmet need will work for limiters only (i.e., those who want to stop childbearing). According to them, the earlier approaches using their unmet need calculation would differentiate unmet need for spacing (wanting to continue childbearing, but with space between two children) from unmet need for limiting. Theoretically, there lies a weaker association of using spacing with fertility than using it for limiting. They argued that contraceptive use for spacing is temporary as the spacers become limiters when they want to have another child and discontinue contraceptive use. It was also suggested that the result does not mean that contraception for spacing is irrelevant for future fertility as spacers becomes limiters after some time. Moreover, health-related advantages from being a limiter are also important (Westoff & Koffman, 2010). Finally, it was found that contraceptive use for limiting births can only forecast fertility.

2.2.6 Geography of unmet need

The Sub-Saharan countries have fewer unmet needs for FP as people continue to want large families. These countries do not need FP, in fact. Unmet need has been found to be highest (20%) in countries where rapid fertility transition has outpaced the expansion of national FP programmes, especially among the poor, women, and those less educated. Some sub-Saharan countries, along with Bolivia, Guatemala, Cambodia, and Yemen, are among those countries (Kols,2008). As contraceptive use has been widespread in the developed countries, unmet need for FP seems to be very low there. Unmet need is 10%-12 % in the developing regions outside the sub-Saharan countries (DHS, 2017-18). As unmet need is found to be declining, disparities in the adoption of family planning methods between rural and urban, educated and less educated, rich and poor, tend to get squeezed. Pockets of unmet need may be found among the marginalized groups with limited access to services, such as those living in hard to reach areas, adolescents, or HIV infected persons (Kols,2008).

Understanding how unmet need and desired family size change over time can help the programme personnel to formulate new and effective policies for initiating services. For example, raising awareness by communicating the benefits of smaller and well-spaced family norms is very important. Expanding the FP services throughout the population and improving the quality of services can be a secondary initiative (NIPORT et al., 2023).

2.2.7 Unmet need and funding

In recent times, addressing unmet need has been challenged in different countries as a result of the changing environment in the political arena, in donor assistance mechanisms, and in health systems. Evidence suggests that rapid expansion of FP programmes, alongside social and economic changes, has triggered the pace of contraceptive use in the developing countries, reducing fertility by half, and may result in the misleading belief that public funding for FP is unnecessary (Caldwell et al., 2002). The shift in national and global attention to other emerging issues, such as poverty and HIV/AIDS, has compelled the reallocation of human resources, time, and money to combat them (Solo, 2005). Bongaarts (2009) shows how funding for HIV/AIDS has increased to 300% while funding has been curtailed by up to 30% for FP from 1995 to 2008.

Meeting the ambitious and broader challenges of the International Conference on Population & Development (ICPD) in 1994, related to reproductive health, including FP, has compelled the government to stretch the resources to meet the ICPD commitments, although it is claimed that women have benefitted from a wider range of services for reproductive health care. At the same time, it is alarming that the largest portion of adolescents are now entering their reproductive age with an enormous demand for services and care, which is deemed to be particularly challenging (Barot, 2008).

Frequent access to different service facilities tends to be harder if the infrastructures are weak. These facilities might have a shortage of quality service providers to deal with the entire population of that locality. The developing countries have to face all these limitations of poor infrastructure and quality of services issues.

2.2.8 Ways to reduce unmet need

Rigorous experiments reveal the fact that carefully chosen, and well implemented interventions can reduce the unmet need for FP. Re-designing the service delivery systems can increase contraceptive use, thereby lowering the unmet need, even in rural areas with low literacy rates and high levels of poverty (Philipps, 2007). FP campaigns are found to be successful where they have broad support from all spheres of society, including politicians, policy makers, academics, health professionals, and even the marginalized sections of society (Lee et al., 1998). Reaching a consensus in support for FP is also very important as it is getting less attention and less funding. Mass media campaigns can raise awareness about the positive benefits of a small family. Different channels of communication can raise awareness of reasons why women of reproductive age with an unmet need do not use FP. Effectively chosen, evidence based messages can clarify the risky situations of pregnant mothers breastfeeding a baby. After being offered routine children's vaccinations and check-ups, women can be asked what FP services they require. Examples reveal that 43% of clients have an unmet need for any of the modern contraceptive methods, and 40% of them adopt a method on the very day they attend the check-up (Solo et al., 1999). Integrated health services can be a very convenient way of addressing these women's unmet needs. For

example, if a woman is offered a family planning method after an abortion, that will surely save her from repeat abortions (Gulley et al., 2011). Improving the quality of services not only attracts new clients, but also reduces the discontinuation of contraception (Yeakey et al., 2009). In the midst of public funding deficits, the public sector can collaborate with the NGO clinics and the private sector to give more choices to women and improve the quality of services. It will, at the same time, shed the huge burden on the public sector, encouraging the middle class and more affluent people to enjoy relatively shorter wait times and better-quality services. In this way the government sector can replace more resources and provide quality services to the poor and underprivileged (Dayaranta et al., 2000). The public sector can also encourage the private sector to use private practitioners or to promote initiatives by way of social marketing of condoms and oral contraceptive pills (Phillips et al., 2003). A fine-tuning of public-private collaboration can eliminate the economic disparities in contraceptive use and unmet need (Agha et al., 2008). Community-based Distribution (CBD), first developed in Matlab, Bangladesh, can be effectively used to deliver injectable contraceptives, reducing the burden on clinic-based staff (Robinson, 2007). Recent study shows that contraceptives availability does not guarantee utilization rather policy issues considering underlying factors behind the non-utilization can lead to enhanced utilization of contraceptives to reduce unmet need.(Mulenga 2020). Geographical variance like rural-urban wealth gap contributes in increasing unmet need among the users. Service providers and stakeholders have been suggested to address accessibility and availability of FP methods by raising awareness campaign and home visits (Shabuz et al.,2022).

2.2.9 Causes of unmet need

Although some of Bangladesh's geographically remote areas have unmet needs, the principle causes in most of the developing countries were found to be a lack of knowledge, fear of side effects, and familial and social disapproval (Bongaarts & Bruce,1995). Other reasons, which seem to be minor, or of less importance, are religion, infrequent sex, and lack of access. Lack of knowledge is more prevalent in Africa than in Asia or Latin America. Side effects and health concerns tend to be dominant in Asia and Latin America but are found to be less so in Africa. In Latin American countries, the cost of FP is of more concern than in Asia and Africa.

The surveys conducted in the late 1980s and early 1990s among married women about the frequent causes of unmet need found that lack of knowledge about different FP methods was the dominating cause of the non-use of contraception, especially in Sub-Saharan Africa, and concerns regarding side effects and health hazards were the leading concern in Asia and Latin America (Bongaarts & Bruce, 1995, Westoff & Bankole 1995). The studies conducted between 1995-2005 about unmet need in the developing countries found the side effects of modern methods, along with infrequent sexual activity

and breastfeeding, to be the commonest result of lack of knowledge, leading to a substantial decline in fertility(Sedgh et al.2007).

Sedgh et al., (2014) tried to explore the most frequent reasons for unmet need, analysing data from 51 surveys conducted between 2006-2013 in Asia (13 countries), Africa (31 countries), Latin America (five countries), and the Caribbean region (two countries). Fear of side effects or health risks, opposition to contraception, infrequent sex, lack of awareness of methods, postpartum amenorrhea, or breastfeeding are some of the major reasons given for not using contraception.

Sedgh et al., (2014) noted that most of the women provided only one reason, or women's stated reason, for non-intention to engage in FP. This might reflect the reasons they are comfortable at stating or the most immediate they think or pressing barriers to contraceptive use. They suggest that to understand the specific barriers, such as the nature of a woman's, or her partner's, opposition and specific side effects or health concerns, other qualitative research is required.

Among the six major reasons for not using contraception in the study by Sedgh and Hussain (2014), infrequent or no sex ranks the highest at 58%, side effects or health risks at 20% are the second most important cause in the context of Bangladesh. Post partum amenorrhea or breastfeeding, at 18%, is also notable with 'opposition from society' taking the fourth position among the causes. Lack of access had the least impact (2%) and lack of awareness of methods recorded no response in the survey. Compared to six other South or South East Asian countries (Nepal, India, Pakistan, Indonesia, Cambodia, the Philippines), Bangladesh ranks second highest (58%), after Nepal (73%), for the individual cause reported to be infrequent, or no, sex. Cambodia secures top position, with 51%, reproting the fear of side effects or health risks. For post partum amenorrhoea or breastfeeding, India is second (23%), close to Bangladesh's standing at 20%.

Sedgh and Hussain (2014) found that infrequent sexual activity and fear of side effects or health risks associated with contraceptive use are the major causes of contraceptive discontinuation in most developing countries. Sedgh et al.'s (2007) findings on DHS surveys, conducted in 1995-2005, show that infrequent sex has become a substantially more common reason for non-use in all Asian countries.

The findings of the BDHS in 2014 by NIPORT et al., (2016) regarding the reasons for non-use of contraception mostly complies with the findings of Sedgh and Hussain (2014). The BDHS in 2014 shows that 80% of non-users are non-users for reasons of fertility, amongst these 27% are sub-fecund or infecund, 16% are not planning contraception due to infrequent or no sex, and 9 % are not using contraception mainly due to the complexity of health concerns or side effects. Opposition, or barriers imposed on themselves, by husbands, or by religious prohibitions, account for another 9% not using contraception among the Bangladesh women.

To summarise, it is clear that unmet need is a critical determinant for evaluating the success of FP, but also that it is conceptually complex. However, both conceptual and programmatic dynamics of unmet need discussed above, lay the foundation for linking the other conceptual issues to help expand the conceptual underpinning of the study. For example, unmet need is found to be impacted by various dimensions of women's empowerment, which is discussed in the following section.

2.3 Women's empowerment and FP

Many believe that gender equity is an old, but still challenging, issue throughout the world (Bhasin, 1993). Under this view, the ICPD in 1994 pronounced the aim of "advancing gender equality and equity and the empowerment of women and the elimination of all kinds of violences against women, and ensuring women's ability to control their own fertility are cornerstones of population and development related programs" (United Nations, 1995a, Para 7.2).

Women's empowerment has been elaborated in various ways. Empowerment, autonomy, gender equality in the context of women have different in-depth meanings. However, some of the scholars like Mason (1996), Mason and Smith (2000) have argued that often there lies no major demarcation between these terms. They treat empowerment, autonomy, and gender stratification interchangeably. Jejeebhoy (2000) defines empowerment and autonomy as the gaining control of women's own lives in the family, community, and society. Chattopadhyay (2005) refers empowerment as the expansion of freedom of choices and actions in all spheres of life socially, economically, and politically. She adds, it also implies control over resources and decisions. Sahay (1998) defines empowerment is an active, multi-dimensional process. It enables women to realize their full identity and powers in all spheres of life. Kaber's (1999) definition perhaps has been found to be widely accepted in the context of women empowerment. Kabeer (1999) elaborated empowerment as the ability to make strategic life choices encompassing three inter-related dimensions: resources, agency, and achievements. Kabeer's definition of empowerment is the process of having the agency and resources to make life choices (Kabeer,1999). Resources have not been demarcated by their economical sense, rather various human and social resources are attributed, and this facilitates greater ability to exercise choice. It may include actual present allocations or future claims and expectations. Kabeer (ibid.) shapes resources as the product extracted through the multiplicity of social relationships with various social domains, such as family, market, or community.

The second dimension of empowerment is agency. This represents one's goals and the ability to act upon them. It also entails meanings like motivation and purpose which a person brings to their activity. It can be exercised individually or collectively. Kabeer (1999) claims that agency has both positive and negative meanings. Positive agency can be defined as the will or motivation of an individual or group to achieve its goal or life choices, despite challenges from various oppositions. On the other hand,

agency in its derogatory position can dominate others with the use of violence, coercion, and threatening behaviour.

Capabilities refer to the blending of resources and agency and represent the potentiality with which an individual lives in the world as desired, making their own choices. Sen (1985) introduced the idea of 'functionings' to mean all the possible ways of 'being and doing' that are cherished by an individual in a given context. By contrast, he uses another idea, 'functionings achievement', by which he means the particular ways of 'being and doing' which can be understood by different people in different contexts. If the attempt to achieve valued ways of 'being and doing' is replaced by laziness, inefficiency, individual preferences, and priorities, then the issue of power or capacity becomes irrelevant. Kabeer (1999) argues that when the initiatives of different ways of 'being and doing' of different individuals are being challenged by some deep-rooted causes, barring the individuals' ability to choose, only in such a situation can it be deemed the manifestation of disempowerment.

2.3.1 Measuring resources (pre-conditions)

Kabeer (1999) points out the extensive use of 'access to resources' in the empowerment literature in a more generic way and comments that the relationship between women and resources points towards them making some choices which are automatically possible. It has been suggested that resources are not direct choices, they are actually *potential* rather than *actualized* choices. Kabeer (ibid.) clarifies this in the context of an example of women's 'access' to land in India and Bangladesh. As Hindu law has been reformed since the Independence of India, Hindu men and women inherit equally, while Muslim women inherit half of what men do as Muslim law has not been reformed. Generally, we can say both Muslim and Hindu women inherit land individually and absolutely, but maybe unequally.

Despite the differences of customary and legal positions in land inheritance for women in the two communities, Kabeer (1999) finds both the Muslim and Hindu women tend to be treated as effectively property-less in the literature. Agarwal (1994) presented evidence of how women have to face hurdles when they want to claim legal possession upon the customary possession of land. The Muslim women are also encouraged to withdraw their legal possession in favour of their brothers, often with no, or a token amount of money being exchanged, certainly at less than the average selling cost of the land. It is customary in Islam that brothers take responsibility for their sisters if the sister's marriage breaks down. So, the unequal exchange of land, on one hand, can be seen as due to the subordinate status of women in Muslim society, but on the other hand, it paves a way, on moral grounds, to entitle them to their land for future needs. The situation also upholds their legal entitlement in society, which provides them with bargaining power in time of need. It is also true that Muslim women in Bangladesh are now days claiming their inherited portion of land having pressurised their husbands (Kabeer,1994). Das (1987) studied the Jat kinships of Punjab in India and showed that women have no say in the question of land.

There remains a fair chance of being murdered if a woman claims land equally under civil law (Das, 1992). It has been observed in the literature that *de jure* access of entitlement to land has been replaced by the *de facto* in both communities, placing them in almost the same position of being property-less. The important critical insight of the discussion is that, for any good to come as a measure of empowerment, the 'resource' dimension should be clarified in such ways that it can completely remove the limitations of 'access' indicators.

2.3.2 Measuring agency (process)

Measuring agency entails both positive and negative agency, such as women's mobility in the public domain, participation in public actions, the incidence of violence by males, and so on. Kabeer (1999) pointed out *agency* as the measurement process with links to *decision-making agency* as many say it links to the conceptualisation of power (Lukes, 1974; Townsend & McElroy, 1992). The women's responses to different questions about what role they want to play in making specific decisions, in fact, provides the means to measure the decision-making power of women. Studying the evidence from South Asia, it has been suggested that purchasing food and other household consumptions and decision-making related to children's health care fall under the arena of women, while transactions concerning major household assets and children's marriage fall clearly on the male from a decision-making perspective.

Kabeer (1999) suggests that far less evidence is found regarding women engaged in decision-making around their strategic life choices than there is for women who play a role in decision-making which is of less consequence and assigned to them by predetermined, gender-divided roles and responsibilities. For example, Pahl (1989) differentiated between 'control' or policy-making functions in the decision-making process and the 'management' function, or decisions related to the implementation process. Pahl's distinction of phases of decision-making can be well understood by the findings from an Egyptian survey of males (cited in Ali, 1996) which showed that men were dominant in the decision to adopt the use of contraceptives—a policy decision—but left the choice of contraception largely to the women.

An important study in the South Asian context suggests that the changing shapes of negotiations can be precisely seen in informal decision-making among the women who choose private forms of empowerment, which in fact does not challenge the existing traditional decision-making processes, leaving the women 'backstage' in the process (Basu, 1996; Chen, 1983; Kabeer, 1997).

2.3.3 Measuring achievement (outcomes)

Kabeer (1999) has discussed Kishor's (1997) study in which she selected two valued functioning achievements—infant survival rates and infant immunization—in an attempt to describe the effects of

direct and indirect measures of women's empowerment, using national Egyptian data. Kishor (1997) conceptualized the empowerment of women as 'control' and defined it as the ability of women to 'access information, take decisions, act in their own interests, or the interests of those who depend on them (Kishor, 1997). She argued that as women bear the responsibility of child bearing, the positive health outcomes for the children should be associated with the measurement of empowerment. Other studies also use different criteria for measuring *achievement*.

Prata et al., (2017) believes that the definition of empowerment by Kabeer (1999) is broad enough to accommodate the conceptualisation of women's empowerment. Upadhyay et al., (2014) also recently used the definition in a review of women's empowerment and fertility.

Women's empowerment has been defined as "women's acquisition of resources and capacities and ability to exercise agency in a context of gender equality" by Schuler et al., (2010). They believe that the meaning and salience of empowerment evolve over time. In the context of social, economic, and political changes in Bangladesh, Schuler et al., (2010) measured women's empowerment and proposed some indicators which have been divided into two categories, capacities and resources (see Table 1).

Table 1: Indicators of Empowerment

Resources	Capacities
Access to media and phone: Women can listen to the radio or watch television; they can use a mobile phone either at home or from a shop.	**Legal awareness:** Women can have knowledge and understanding about how much land they own, they can register births and marriages, and they can have knowledge about divorce, desertion, or custody of children, and about domestic violence, amongst others.
Economic security: Women can have a home and/or land, an asset and/or savings of her own.	**Political awareness:** Women can support their preferred political party, can exercise their voting power, and have understanding about their local representatives, amongst others.
Education: Women can have the highest level of education.	**Self-efficacies:** Women can talk about any issue with others independently, they can solve family problems and have the confidence to agree or disagree with their husbands and other family members, amongst others.
	Social support: women can frequently visit their parents' homes, can talk to them in time of sickness or financial problems, someone can even visit her in her sickness.

Schuler et al., (2010) also provided some indicators which represent women's agency. These include: women's engagement in paid work outside the home; participation in major household decisions; maintenance of the family assets; frequent mobility outside the home; involvement in microcredit or savings programmes; and, political participation, such as voting for their own choice of candidate.

Moreover, women can have the access to contraceptives through FP which can increase the likelihood of maintaining the size of their family at their desired level. However, Sedgh et al., (2014) shows that an estimated 40% pregnancies are reported to be unintentional, despite knowledge of the proven benefits of FP. Cleland et al., (2014) show that the unmet need for FP is high despite the availability of FP contraceptives.

In a more recent review on women's empowerment and fertility, Upadhyay et al., (2014) suggest that, in most South Asian and African countries, women's empowerment is associated with lower fertility, longer birth intervals, and lower rates of undesired pregnancy, generally . At the same time, many studies report no relationship between some indicators of women's empowerment and the number of children in a family. The studies that used multiple and multidimensional measures of empowerment found relatively more consistent associations.

In Upadhyay et al.'s (2014) review, empowerment was positively linked with fertility preferences, such as the preferred family size or the desire to have no more children. The desire for fewer children was reported among the South Asian studies when empowerment was gauged by higher spousal communication around fertility. Similarly, the studies related to birth interval suggest that this interval is lengthened if household decision-making power is established. However, two studies found that when a woman has to cope up with education/work and childbearing, birth intervals were reported to be shorter. Again, a woman having her first child at an older age was reported to have shorter birth intervals in order to complete her family before reaching an age when she is unable to have more children (Fricke & Teachman, 1993; Upadhyay & Hindin, 2005).

Prata et al., (2017) reviewed 46 articles published between January 1990 to December 2012, mostly from the developing countries (24 from South Asia), to examine the relationship between women's empowerment and contraceptive use, unmet need for contraception, and other related FP topics. Household decision-making and mobility were two of the most used domains for women's empowerment. Reviewing studies by Prata et al., (2017), it was found that the relationship between women's empowerment and family planning is not a simplified one. It mostly depends on the nature of investigations about the empowerment domain and FP outcomes.

Drioui and Bakass (2021) conducted an empirical examination of empowment's impact on fertility preferences, measured by the ideal number of children.The result shows that empowerment of women is positively associated with in reducing the ideal number of children through increased bargaining

power and spousal communication. They also found educational resources as one of the key factors especially when it comes to fertility planning. Kabir et al.(2024) analysing the BDHS 2017/18 found a robust positive association between women empowerment and intake of modern FP methods. They found the reinforced association between women empowerment and reproductive health outcomes. Acknowledging and promoting collaborative decision-making within households as a pivotal factor in enhancing the modern contraceptives methods.

2.3.4 Gender dynamics and unmet need

Sidanius and Pratto (1999), who are the precursors to social dominance theory, asserted that social hierarchies exist in human society based on certain social categories, such as religion, gender, class, and sexuality. Social hierarchies lead to various discriminations among the marginalized and disadvantaged sections of society, at both personal and institutional levels. Pratto and Walker (2004) identified four bases for gendered power: resource control, consensual ideologies, force, and social obligations. Uddin (2014) believes these can be useful for analysing the ways gendered power dynamics in the household contribute to women's risks of unintended pregnancy and non-use of contraception. Globally, income assets as resources generally favour men over women (Connell, 2005), which demonstrates the structural and institutional inequality in women's subordination (Pratto & Walker, 2004). Income inequality often leads women to be dependent on male partners, which makes it challenging for them to negotiate the use of condoms (Gutierrez, Oh & Gillmore, 2000).

Rosenthal and Levy (2010) define consensual ideologies as the 'gender roles, norms, stereotypes and any other beliefs or expectations about men and women that are generally agreed upon in a society or culture'. In many societies it is believed that women are weaker, and they should be protected by men (Glick et al.,2000). This notion of consensual ideologies tends to denominate women's participation in coitous relationships which endangers their control over their fertility regarding the use of contraception (Pratto & Walker, 2001).

In a male dominant society like Bangladesh, a result of imbalanced power dynamics between men and women is differing opinions regarding contraceptive use and decision-making. Sharan and Valente (2002) claim the situation is more aggravated by male dominance in patriarchal societies.

The Islamic system of purdah is another form of ideology that restricts women in Bangladesh from reaching their reproductive goals and contraceptive behaviour. A number of studies reveal that if the women are given autonomy to move from one place to another, to visit friends and relatives for example, their likelihood of using contraceptives to avoid unintended pregnancies increases (Rahman, Mostafa & Hoque, 2014; Blanc, 2001).

The influence of male dominance in fertility in rural versus urban areas is important as it indicates that traditional ideologies are more pervasive in the rural areas, men can exercise power when shaping fertility desires more than they can in urban areas (Dodoo & Tempenis, 2002). Physical abuse, rape, assault, any other form of violence against women that compromises women's power or status in society can be taken as force (Rosenthal & Levy, 2010). Evidence reveals that physical abuse as a means of force in heterosexual relationships poses a serious barrier to women's ability to use condoms (Molina & Basinait-Smith, 1998).

Pratto and Walker (2004) believe that social obligations tend to form the basis for gendered power in most societies, certainly in terms of caregiving for the children and satisfying the needs and desires of others. Hindin (2000) shows that married women in Africa are traditionally believed to bear children shortly after their marriage in order to accomplish their responsibility as mothers, this discourages them from negotiating power over the use of contraceptives. On the other hand, greater numbers of children meet their social obligations as mothers, and they are more likely to use contraceptives as they desire (Bass & Richards, 2012).

Any unmet need for FP is interlinked with gender equity and socio-economic development. In a poverty-stricken area, the empowerment of women is found to be low, perhaps as a result of low levels of schooling for girls. In such areas, fertility transition is expected to be late and, reasonably, women cannot have choices concerning their own fertility due to lack of knowledge (Campbell & Bedford, 2009).

2.3.5 Shaping of Women Empowerment

The shaping of the women empowerment is not straightforward rather it is the combinations of various socio-cultural aspects which are embedded in it. Bhatia et al. (2024) has shown how an ever-evolving social relations landscape acts in the context of Family Planning where gender is constantly negotiated. It has been revealed that though Family planning has succeeded in reducing fertility in Bangladesh, yet the much desired hope for gender equality hasn't been resulted (Mahmud,Shah & Becker,2012;Duvendack & Palmer-Jones,2017;Kabeer,Mahmud & Castro,2012;Chesney-Lind & Hadi,2017;Ruthbah,2020).While fertility rates declined, it was assumed lessening fertility would allow the women time reduction in child caring resulting to wider employment opportunities and wealth, elevating women's status in the family. However, declining fertility may have slight impact on decision making, there has been little improvement on other issues like property rights, a term broadly used to capture women's ownership of assets (Mahmud,Shah & Becker,2012;Ruthbah,2020).

A study on the empowerment of rural women in Bangladesh highlighted that women's empowerment can be attained by fostering their level of awareness in ten selected gender issues. They include, under-valuation, educational gap, inheritance of property, timing of marriage, practice of dowry, divorce rights, sex bias, birth registration, political awareness and violence against women (Parveen,2007).Mason and

Smith (2003) also suggested gender relations as heavily influenced by the community norms and values, community, is therefore, a far stronger predictor than individual traits.

The conceptual analysis of the empowerment issue becomes more extensive in the following section as it aims to better understand those needs, choices and preferences of the women which are considered to be burning issues in the context of FP.

2.4 Autonomy and informed choice for women

The autonomous or "informed choice" model has always been a widely discussed issue in the arena of FP (Upadhyay, 2001; Kim et al., 1998). In this process a service provider provides necessary information about a contraceptive method to the client so that the client can make an informed choice, for instance by assessing the side-effects of specific methods. However, the provider may personalise some information in order to clarify what he/she perceives as the most relevant to the needs of the client, thus the provider does not make the decision, it is the sole responsibility of the client.

The framework for healthcare decision-making proposed by Charles et al., (1997) is aligned to clarify different approaches to decision-making. In this framework, the decision-making process is categorised as *information sharing, deliberation,* and *decision-making*. Each of these three phases can be shared between the provider and the client in a shared decision-making approach. However, client-provider sharing is done in the '*information sharing*' phase, not in the other two phases, maintaining the client's responsibility for independent decision-making.

Dehlendorf et al., (2013) suggest that it remains unclear how closely this autonomous model of decision-making can meet women's need. Becker (2009) argues that few studies have asked clients about their preferences, experiences, and values; most have been conducted based on the views of researchers, not those of the clients. It is also indicated by previous qualitative research that clients value autonomy in selecting the contraceptive method best suited to them, but the gap between the level of provider involvement in the process and the details of the autonomous process has not been explored (Becker, 2009). Dehlendrof et al., (2013) argue that the findings of their study also observed a model for contraceptive counselling in which, like the '*shared informed choice'* of decision-making, clients can share some information, within limits, in the '*deliberate*' phase and also in the '*decision-making process*', in some cases.

Dehlendrof et al., (2013) also consider that some may feel uncomfortable with the degree of involvement in contraceptive decision-making by the provider for the simple reason that it is of a highly intimate nature, but also due to prior history of reproductive coercion in some countries (e.g., forced sterilization

in India). However, Stewart's (2001) definition of patient-centred care defends this approach as it highlights the needs and preferences of the individual client. Thus, according to the patient-centred approach, the patient (or client) should be the judge in all the decision-making. The patient may, however, feel challenged to make an autonomous decision and the quality of the information provided may be insufficient to empower the patient to decide.

The behavioural change aspect of contraceptive decision-making is complex due to its highly personalized nature; designing a communication approach, such as motivational interviewing (Emmons & Rollnick,2001) by the provider with the client, could be an appropriate approach in this context. It is a directive, client-centred style of counselling for the behavioural change of clients to explore and resolve problems. Moskowitz and Jennings (1996), however, regarded this type of proposed client-centred approach as directive counselling which aims to promote long-acting contraceptive methods among the women. Dehlendrof et al., (2013) treated this type of provider engagement in persuading clients as problematic because it is not based on women's preferences. In addition, evidence suggests that such a behavioural change approach does not result in good outcomes. A study in the USA showed that women who were pressurised into using implants as a form of contraception had the highest discontinuation rates (Kalmuss et al., 1996). On the other hand, high uptake of long-acting methods assisted by non-directive counselling (Rogers, 1942) by the provider found the reasons for high uptake to be adequate information about the methods and financial motivation (i.e., providing compensation to clients for adopting methods, when they have lost working hours as a result) linked to them (Poldrack et al., 2011), and not by the persuasion of the provider. Rogers (ibid.), the chief exponent of non-directive counselling defined it as a process in which the counsellor creates an atmosphere within which the client may work out their own problem.

In the arena of FP, the patient population who visit the providers are younger when compared to diverse areas of health care and based on quite personal and sensitive issues. Dehlendorf et al., (2013) suggest that clients would be more interested in personal engagements with the providers, therefore, it is suggested that continuity of care can increase trust and comfort among the clients when discussing sensitive, personal/intimate issues. Dehlendorf et al., (2013) suggest that clients will be looking for adequate information about the side effects of various methods and the providers will be less interested in this. This really reinforces the importance of discussing, explicitly, the side effects of contraceptive use, for example the changes in menstrual timings due to the progestin-only methods or weight gain associated with the use of oral contraceptive pill.

Discussing the negative side effects does not deter clients, as shown in Backman et al., (2002). Their study suggests that providers should ask clients if any method has any specific side effects for them so that the clients become convinced that their concems are addressed. Refuting, or not giving proper attention to their say, may interfere with the trust in counselling. At the same time, it is a concern that

discussing the side effects which are not epidemiologically associated with contraceptive use may create the *nocebo* effect (adverse side-effect of medications unrelated to the specific pharmacological action of a drug) among clients (Grimes & Schulz, 2011), and hence it is unnecessary to discuss it with them.

Dehlendorf et al., (2013) suggest that providers must be concerned about the various side-effects of methods among clients so that the clients feel that their concerns have been addressed. Providers failure to do so may breach the trust clients have in them.

It is suggested that FP providers should be accustomed to differences in terms of race, ethnicity, and language among various groups to be able to meet their individual needs regarding contraceptive decision-making, intimacy, and information provision. Asking clients about their preferences and goals for care can address this specific issue.

2.4.1 Women's preference for autonomy of choice

Dehlendorf et al., (2010) found that women are more likely to prefer autonomous decision-making about birth control than about other medical issues. Dehlendorf et al., (2013) assessed clients' choices about the FP decision-making process and found the vast majority of clients believe it to be appropriate to make the final decision by themselves. The clients expect intimacy and adequate information regarding the FP provision from the service providers. With a view to addressing the desires and preferences of the service seekers, the service providers can maintain a client-centred approach to counselling. This can explicitly accommodate and entertain the preferences of the clients. Dehlendorf et al., (2013) also suggest that if the assistance reflects the client's concerns and preferences, the involvement of the provider can be taken as a positive initiative.

Upadhyay (2001) finds a contrast between explicit interaction with the client around preferences and the provision of decision-making and the informed choice model of counselling which is frequently applied in FP. According to the informed choice model, the providers provide information to clients which helps the clients to come to a decision over their choice of method. However, when women look for more engagement from the providers, they find it difficult to choose. A shared decision-making approach which caters to the expertise of the provider as a clinical expert and to the client as the expert of her own values and choices has also been suggested here (Makoul & Clayman, 2006).

Dehlendorf et al., (2016) deem that patient-centred contraceptive counselling can cater for the women's experiences of quality of care and reproductive goals. Women's choices and preferences are found to be diverse and contextualized. Women value the autonomy of undirected choices. At the same time, they encourage personal intimacy and supportive relationships with family planning providers who value the individual preferences of their clients (Dehlendorf et al., 2016).

Oliviera et al., (2014) tried to estimate the impact of socioeconomic factors on contraceptive choices, highlighting the modern and traditional methods versus sterilization in Southern India where sterilization is relatively high amongst other methods. Although the informed choices model of service delivery emphasises individual reproductive and FP rights without any form of discrimination, poorer women with little autonomy within and outside the household have little control over reproductive and contraceptive choices (Moursund & Kravdal, 2003). Studies show that health and FP community-based staff motivate sterilization among clients in order to fulfil their own stipulated targets—even by misleading clients with other options of FP methods (Srinivasaan, 1998). Oliveira et al., (2014) found that caste, religion, education, occupation, and household wealth play a pivotal role in choosing methods among the women. Wealthier sections of clients prefer the use of modern methods over sterilization. The Muslim women, for their religious affiliation, were found to choose more traditional or temporary methods. Despite the increase in the use of modern methods, permanent methods like sterilization still dominate among the poor. Saavala (1999) also finds a consistent diffusion of practice of permanent methods in Indian families across generations among the poor. This debate has led to changes in FP practices.

Reproductive autonomy highlights the decision making of reproductive goals by the women regarding contraceptives use,pregnancy ,childbearing etc.Autonomy in the context of women in Bangladesh is relatively new phenomenon (NIPORT et al.,2014; Rahman,Mostafa & Hoque,2014) where women has to sacrifice a lot (Wyatt et al.,2014) in a patriarchal society.Alam & Shelley(2020) tried to explore the current status of rural women's reproductive autonomy .They found that though women's preference should be given priority in contraceptive and fertility decision making,unfortunately they had to compromise with their male partners' preference for a larger family.It has also been found that few educated women can participate in exercising their roles but still the males are in the main role to give it the final shape.

Women's preferences for autonomy of choice can be summed up by saying that they uphold the value of preferences but at the same time they encourage providers intimacy. So, it is the responsibility of the providers as to how they should demarcate their intimacy while upholding the preferences of their clients. Apart from the service providers, the role of males, as husbands or partners, is influential in the decision-making process about contraceptive uptake which is developed in later sections.

2.4.2 Male Involvement in decision making

It is true that females are burdened with the responsibility of adopting FP methods as most methods are for females. The males' methods are limited to the temporary method of condom use and the permanent method of sterilization. However, the programme of action adopted by the ICPD (1994) in Cairo, demonstrated the broad nature of male involvement in FP (Hossain, 2003). The ICPD highlighted men's

shared responsibility and upheld their active involvement in taking responsibility for parenthood by involving themselves in sexual and reproductive health issues, especially in FP, and infant, maternal and child health, along with the prevention of Sexually Transmitted Diseases (STDs) and unwanted and high-risk pregnancies.

Men's active participation in FP has multi-faceted advantages. It can benefit fertility regulation by either balancing the reproductive health care more evenly between men and women, or by increasing the overall level of active contraceptive users in fertility regulation (Martinez et al., 1991). Again, male involvement has been evidenced as significant for two distinctive but inter-related reasons: the programmatic goals encourage the use of male contraceptive methods and, at the same time, increase the participation of males in the contraceptive decision-making process (Donahoe,1996).
Hossain (2003) suggests that condom use and vasectomy are considered to be two easy and cost-effective methods for males. He also emphasises the urgency of actively involving men in FP, in Bangladesh this should be materialised on social and medical grounds. The social reasons, in this context, are deemed to be that males have a shared responsibility of parenthood and sexual and reproductive behaviour with women as wives. With the male as a supportive partner in a decision-making process, couples share decision-making, or a husband can allow his wife to make a decision which best suits her. Supportive couples not only educate themselves about using the contraceptives, but also help the partners, especially the wives, to make informed choices. Another important aspect that can be an advantageous side of male contraceptive use is based on medical grounds. Although the prevalence of HIV/AIDS is very low in Bangladesh, yet growing concern about STDs has been intensified with the increasing mobility of men for their work. Males' increased share in contraceptive use, especially of condoms, can decrease the possibility of STDs. Kamal et al., (2013) reveal that the age, education, and occupation of both the husband and the wife, spousal communication, and knowledge of contraceptives and STDs, are all found to be significantly associated with male involvement in FP and reproductive health. Wondiam et al.(2020) found that educated men are likely to have more knowledge on contraceptives which initiates them to be involved in the family planning .Moreover, educated women may initiate their partners to discuss the contraceptives use,so the partners become a part of the involvement process (Egbe,2016).

The BDHS in 2017-18 reveals that the male share in the use of FP contraceptives is around 11% among 100% both by male and female (condom 7.2%, sterilization 1.1, withdrawal 2.8%) (NIPORT et al., 2020), including all modern and traditional methods. Compared to the overall use of contraceptives at 62%, the male share is found to be too low. This dismal picture of male's low level use of contraceptives not only implies the failure of the FP programme to include the male, but also indicates a further increase in contraceptive use cannot be made possible without male involvement in FP (Hossain, 2003).

2.4.3 Husbands concordance or discordance matters in decision-making measures

Uddin et al., (2016) revealed some findings from their study of household decision-making power dynamics which show that views represented by both partners are not same. They found a high level of discordance on couple-level measures regarding household decision-making. Findings show that couples' joint decision-making measures are associated with lower risk of an unmet need for contraception.

Substantial differences have been found in the responses of couples' decision-making measuring based on the context of 'who decides what'. For example, some decisions are made by women in most of the settings concerning cooking food, buying household goods, and so on. However, a notable level of discordance (48.5% to 62.8%) among the couples is supported by previous findings as the reason for a lack of communication (Mullany,2010); certainly, inbuilt gender roles in some common settings under-report women's participation in decision-making (Ghuman et al., 2006). It has been suggested that in these settings women tend to be passive as an accepted social norm which is a cause of under-reporting.

Uddin et al., (2016) explains that husbands' absolute control over decision-making may limit wives' authority over financial resources, as a consequence this may bar their access to reproductive health care services, resulting in poor use of contraception. In the context of the success of micro-credit as a means of empowerment for women, Kabeer (1999) showed that joint decisions by husband and wife have potentially positive outcomes compared to single partners independent decision-making. It is also suggested that in the context of South Asia, women's autonomy does not fully work alone, rather it is embedded with the cultural values of mutual dependence within the families.

Involvement of others, especially mothers-in-law, in the decision-making processes in the context of Bangladesh is another significant finding from Uddin et al.'s (2016) research. It is a tradition in the rural areas for mothers-in-law to live with the couples, giving them relatively more control over the daughters-in-law reproductive decision-making. Son preference is another trait in the agrarian families as sons are viewed as a potential labour force and future financial shelter for the parents as they age. As a result, mothers-in-law also act as a barrier in their daughters-in-law's desire to limit their childbearing, longing for a son.

If women have to negotiate with their husbands and their mothers-in-law inside the home, peers outside the home are no less influential in their impact on contraceptive use among women, this is discussed in the following section.

2.4.4 Peer effect on the decision-making process in FP

Generally, it is believed that people tend to depend on themselves in a decision-making process. However, the behaviour of an individual can be significantly changed by the influence of others within the same group, this is 'peer effect' (Darmawan & Dartanto, 2019). Xiong et al., (2016) believe that peer effect plays a pivotal role in human behaviour around decision-making, where noticeable information is not otherwise found in people's actions. It has been observed that decision-making is imitated under the influence of peers and powerful community personalities known as patronages (Bariagaber, 2013).

Xiong et al., (2016), in their study, suggested three fundamental mechanisms to explain the role of peer effect in the decision-making process. They are: *the information effect, experiment effect,* and *externality effect*. Transmission happens in the information stage by which the individual is informed about the adoption of a new method by peers. In the *experiment effect*, the individual becomes prepared, psychologically or materially, to adopt the new innovation or the method learnt from peers who have already experienced or adopted it. The new knowledge about methods received from peers saves individuals searching for a new method, ensuring a reduction in terms of cost or uncertainty about a method. The last stage is *externality effect,* this is when an individual is pressured or forced by peer behaviour to adopt, or not to adopt, the new method because, in the meantime, a notable number of peers have already adopted it, making it almost a compulsion for others among the peers. The peer effect is also accompanied by the bandwagon tendency, a psychological phenomenon in which an individual primarily tends to behave in the same way as others.

Darmawan and Dartanto (2019), in their study in Indonesia, showed that household decisions about whether or not to use contraception have been influenced by the peer effect, or by the behaviour of the surrounding people. They explored two possible reasons. Firstly, they identified that the bandwagon effect compels users to come in line with others within their group. If most of the group members have already adopted a contraception method, the other members do not want to be left out, so they also adopt the method. Secondly, they think that users learn from their neighbours (peers) through social learning to reduce the costs of searching for a contraceptive method, or to enjoy better quality of information regarding the adoption of a method.

Findings from Darmawan and Dartanto (2019) are in line with earlier studies. Dehlendrof et al., (2016) showed that discussing the use of contraceptives with supportive peers encourages people's motivation in their contraceptive choices. Women who frequently discuss the use of condoms with their peers, girlfriends, or mothers, have a high likelihood of being consistent users of condoms with their partners (Forrest & Frost,1996).

Bhatia et al.'s (1980) has shown how husbands, mothers-in-law, or traditional religious beliefs can persuade women to change their minds in adopting contraceptive sterilization in rural Bangladesh. Among 275 women sterilized at Matlab, Bangladesh between January and May 1978, more than 80%

claim that when they were informed about the female sterilizations camps in the area by a FP worker, they talked with other women in the same locality for support and reassurance. The remaining 20% said they got approval from their husbands (87%) and mothers-in-law (95%).

The study showed that of the sterilized women, 50% were concerned about the health outcomes of the surgery, 22% were concerned about the attitudes of their peers and relatives. Meanwhile, 81% of the non-sterilized women were concerned about the reaction of others, while 19% worried about the after-effects of surgery.

The comprehensive discussion was able to address the influencing factors of contraceptive uptake behaviour among women, both inside and outside family. The detailed analysis also highlighted women's preferences and choices in such a way that it has opened avenues for them to see how they are affecting adolescent marriage and pregnancy in FP programmes, a burning issue which is discussed in the following section.

2.5 Child marriage and teenage pregnancy

WHO defines girls of 15-19 as teens (WHO, 2012). Pregnancy in a girl aged between 10-19 years is called adolescent or teenage pregnancy (Dangal,2004). Teenage pregnancy is detrimental to both the mother and the child's health. It has become one of the concerning issues of women's reproductive health, not only in the developing countries but also in the developed countries (Papri et al., 2016).

Teenage pregnancies in the developed countries often occur outside marriage and bear social stigma. On the other hand, teenage pregnancies in the developing countries happen within marriage and do not often involve social stigma (Sulaiman et al., 2013). Low socio-economic background, low educational attainment, disrupted family structure, and poor sexual health practices have been identified as the risk factors for teenage pregnancy in South Asian countries, such as Bangladesh, India, and Nepal (Dulitha, 2012).

Marriage before the age of 18, both formally and informally, has been defined as child marriage (UNICEF,2014). Child marriage (below 18) and early age marriage (below 16) are a global concern, irrespective of their occurrence in developed, developing, or the least developed countries. However, child marriage situations are more prevalent in the Global South (sub-Saharan Africa), South Asia, and parts of Central America (ICRW, 2007), due to poverty and other socio-cultural reasons. One in every seven girls in the developing countries is married at fifteen or younger (UNICEF, 2014). Despite a declining trend of child marriage all over the world, it is still reported that about 12 million girls are married before they reach 18 every year (UNICEF, 2017). Sub-Saharan Africa (38%), followed by South Asia (30%), and Latin America (25%), have been reported to have the highest number of child marriages recently (UNICEF, 2017). Brazil and the Dominican Republic have the highest number of under 18

marriages in the region, but other Latin American countries also have an alarming percentage of child marriages. Among the South Asian Muslim countries, 39% of young girls in Pakistan were married before 18, while in Indonesia and Afghanistan the figures are 11% and 33%, respectively.

Various studies provide evidence that child marriage not only affects adolescent girls' economic, social, and health status, but also leads to further numerous adverse health outcomes among the adolescent girls with high fertility rates, maternal morbidity, stillbirth, and miscarriage (Kamal & Hassan, 2015).

2.5.1 Child marriage in the Bangladesh context

Like most other countries, the legal marriage age in Bangladesh is fixed at 18 years for girls, however, the recent Child Marriage Restraint Bill, 2017 allowed some flexibility, now those under 18 years old may marry with parental consent. Despite the rapid advancement of some socio-demographic determinants, such as enrolment of girls in education and declining fertility levels among women, Bangladesh still has the highest percentage of child marriage in Asia and the fourth highest globally (UNICEF, 2019). Although age at marriage is found to be decreasing slowly, still 50% of adolescent girls in the population are married by the age of 18, 27% of those adolescents by the age 16 (BDHS 2022) (NIPORT et al., 2023). However, the decreasing trend in child marriage over the past decade seems slow (decreasing from 65% to 50% in the BDHS of 2011 to the BDHS in 2022), teenage pregnancy (women aged 15-19) has reduced to 24% in 2022 from 30% in 2011, which meets Bangladesh's 4th Health, Population, and Nutrition Sector Programme (HPNSP) aims to reduce the teenage pregnancy to 25% by 2023.

With the background of this statistical information, numerous studies have investigated the influencing factors of child marriage, they are found to be diverse in social, cultural, economic, and religious aspects.

High incidences of child marriage have been mostly evidenced to be associated with a lack of employment and economic opportunities, themselves outcomes of widespread poverty (Kamal et al., 2015). The median age of marriage of those girls from the poorest background is found to be 15, while it is 18 for those from the richest backgrounds. It has been revealed that families want to dispose of the financial burden of the dowry tradition, the cost of marriage increases as the age of the bride increases (Plan International, 2015). Illiteracy and lack of access to formal education is a direct outcome of financial capability and is linked to a negative correlation with child marriage the most recent BDHS report in 2022. Most girls with a secondary school, or higher, education are married at or after 18, while those with no secondary education, or no education at all, marry at a relatively low age. Mahmud and Amin (2006) also showed most of the early marriages result in girls dropping out of school immediately, or soon after, their marriage. Gender inequality is found to be another driving force of child marriage as girl children are considered to be an economic burden, unlike the boy child, parents can become restless to release this burden (Nasrin & Rahman, 2012). Societal taboos embedded with cultural norms in

society also aggravate the scenario of child marriage as parents feel it is their responsibility to ensure their girls are married as puberty starts (Plan International, 2013). Religion also has an impact on child marriage and early pregnancy. The influence of religious affiliation, especially in the context of Bangladesh, has been found to be instrumental in shaping views and opinions on child marriages controlled by the patriarchy. This happens at individual, family, and community level, existing laws are often ignored, this restrains social change, including women's development (Talukder et al., 2020). Ali et al., (2020) also found a high level of pregnancies among the Muslim women after an early marriage. Religious values and practices, alongside the lack of legal initiatives and enforcement of laws, also contribute to increasing numbers of child marriages. Legally it is compulsory to present a birth certificate before the registration of a marriage. However, because of the weak enforcement of the law, this is not ensured (Akhter, 2019; Plan International, 2015).

Child marriages have far reaching adverse impacts not only on the reproductive health of the women, but also on their children (Kamal, 2012). In addition to having more likely outcomes of fistula, pregnancy complications, and/or even death during the delivery than older women, young mothers experience greater risk of obstructed labour and pregnancy-induced hypertension because their physiological growth is unprepared due to their young age (Mathur, Greene & Malhotra ,2003; Save the Children, 2004). Young adolescents aged 15-19 are twice as likely as older women to die from childbirth or pregnancy. Godha et al., (2013) also revealed that child marriage has been significantly correlated with poor use of contraceptives, poor fertility outcomes, and poor mental well-being. Adverse fertility outcomes, such as termination of a pregnancy or an unplanned pregnancy, can be a result of poor fertility control. Rahman et al., (2018) also found an association between child marriage and pre-term births. They also revealed that adolescent girls were not well aware of the need for maternal health services as most had the incorrect notion that because pregnancy is a natural phenomenon, they did not understand the importance of a hospital delivery and regular medical check-ups, unless they experience major delivery related complications (Shahabuddin et al., 2017). Girls aged 10-15 years are highly prone to vulnerability as their pelvis is not big enough to carry a child. They have a high chance of fistula (approximately 88%), resulting in faecal or urinary incontinence which then leads to humiliation, an unhappy conjugal life, ostracism, and depression. These girls can only return to normal life with successful fistula repair, surgically (UNICEF, 2005). The psychological impact of child marriage on adolescent girls cannot be ignored. As they are still in puberty, they lose their childhood and struggle to cope with a new atmosphere and new responsibility. Societal pressure to prove reproductive capability is a common phenomenon and if the bride is not able to conceive, the husband may threaten to remarry or barely hesitate to marry again (Nour, 2006). The psychosocial and emotional development regarding forced sex and denial of free will often have an adverse effect on the life of the adolescent bride (UNICEF, 2005). Hossain et al., (2022) found an association between the mortality and morbidity of children under five (U-5) and the mothers married as children.

Almost all the studies have shown that the prevalence of child marriage and adolescent motherhood remains persistently high in the context of Bangladesh (Bhowmik, Biswas & Hossain, 2021; Kabir, Ghosh & Shawly, 2019; Kamal & Hasan, 2015). With this background of the reality of child marriage and its outcome of adverse adolescent motherhood, deferring the age of marriage is crucial and can be attained by retaining the girls at school and by enforcing the ordinance of the legal age of marriage. However, most studies have emphasised upholding societal and cultural changes by expanding economic capability, widening girl's education, and raising awareness among the community against the adverse effect of child marriage on girl's health, side by side with enforcing the legal age of marriage.

2.5.2 Impact of FP programmes on maternal and child mortality

There remains less debate that adopting family planning methods has a contributory effect on the reduction of maternal mortality by reducing the number of births. As contraceptive use reduces the number of times a woman is prone to pregnancy, it automatically reduces the risk of both maternal and child death. Antarsh (2004) reports the generally acknowledged relationship of contraceptive use and maternal mortality as it provides health benefits for the women by averting exposure to unintended pregnancies, the risk of unsafe abortions, miscarriages, and stillbirths. Stover and Ross (2010) provided evidence of how contraceptive use reduces the risk per birth and the maternal mortality ratio by discouraging high-risk, high-parity births. Winikoff and Sullivan (1997) have shown FP programmes with increased use of modern contraceptives can reduce maternal death rates in two ways. Firstly, the overall births are reduced as the women's risks are lowered and the total number of deaths are fewer. Secondly, by reducing high-risk births particularly, an increase in modern contraceptive use reduces the average risk of mortality associated with each birth (Winikoff & Sullivan, 1997). Using data from 146 demographics from 1990 to 2005, a period of rising FP uses all over the world, they have shown that there has been a reduction in maternal mortality as fertility in the developing world has dropped. They found that the transition from low to high level of contraceptive use by the use of modern contraceptives can contribute, and has contributed, to reducing maternal mortality in the developing world.

Child mortality is also a growing public health concern in the context of the growing importance of designing the FP programme to identify the determinants and trends of child mortality (Sayem, Nury & Hossain, 2011). A high fertility rate is often boosted by high infant and child mortality as the parents fear for the deaths of their children at an early age (Khan & Awan, 2017). Some important demographic variables, such as maternal age at marriage and first birth, birth spacing pattern, parity, maternal height and size of the child at birth, are some of the factors contributing to child mortality (Hobcraft, McDonald & Rutstein, 1985; Bairagi, Sutradhar & Alam, 1999; Kabir et al., 2001). Mothers pregnant at an early age (i.e., under 20) are more at risk than relatively older mothers (20-24 years). Moreover, mothers in the last phase of their reproductive age (i.e., after 35, with greater risk after 40) are at greater risk of

mortality. It has been evidenced in many studies that child mortality is higher for the first birth compared to second or third births. The greater the length of the birth interval, the lower the association with child mortality, thus the smaller the birth interval, the greater the risk of child mortality (Ronsmans, 1996; Ghubaju, 1985; UNFPA and IPEA, 2007; Chandrasekhar, 2010).

Evidence shows that both maternal and child mortality are reduced with the increased use of modern contraceptives. The greatest effect is on high parity births which are virtually averted with contraceptive use. Moreover, a decline in maternal deaths is found to be greater than the corresponding decline in births in almost all countries due to the specific use of the contraceptives eliminating high-parity and high-risk births first. All the evidence categorically suggests that a reduction in high-risk births has been made as a result of the use of modern contraceptives, averting maternal mortality (Stover & Ross, 2010).

Increased use of contraceptives in a religious setting is another important issue which is linked to the reduction of adolescent pregnancy. The next section highlights the dilemma of the permissibility of FP contraception under Islam.

2.6 FP and Islam

Bangladesh, a Muslim majority country, is said to have struggled during the early stages of the FP programme in the 1970s/80s due to religious belief. It is true, religious beliefs are commonly perceived to be barriers for the acceptance of FP practices (Raja et al., 2012). There remains a constant debate about the permissibility of FP contraceptives according to Islam among the religious jurists. As Muslims are supposed to be guided by the preaching of the religious scholars, there remains debate about the acceptance of FP in Islam.

The reference sources of any permissibility or prohibition according to Islamic law are the Holy Quran and the tradition (*Sunnah*) of the prophet. The legality of contraception in Islam has been thoroughly discussed by Omran (1992), referring to the views of famous Islamic jurist Sheikh Jadel Haq, the Grand Imam of Al-Azhar. Omran (ibid.) shows that a close scrutiny of the Quran reveals no direct text prohibiting the prevention of pregnancy or limiting the number of children. However, the traditions found in the *Sunnah,* with which most Islamic jurists agree, accept *Al-Azl* (coitous interruptus/withdrawal). In this process the husband ejaculates outside the wife's vagina with a view to avoiding too many children or avoiding pregnancy altogether. The *Al-Azl*, the temporary prevention of pregnancy, is permissible as the followers of Prophet practiced it at that time. Above all, the jurists' consensus has been reached with the principle fact that abortion after a period of four months from the date of conception amounts to taking a life.

Apart from the *Al-Azl,* other modern FP methods like the oral pill, IUD, implant, or others, were not mentioned as they were not known to them in that period. By analogous reasoning (*qiyas*) from the various schools of Islamic thought, contraceptives were found to not be harmful if they were used by men or women or were prescribed by physicians for temporary contraception. The jurists unanimously agreed that as long as the barriers do not destroy the fecundity or the ability to procreate, they are permitted. Actually, the modern methods are found to be better than *Al-Azl* as they allow normal and complete marital relationships, blocking the pregnancy for a short period of time and making no permanent impairment to fertility, the jurists argued.

Omran (1992) also reveals the views of the Islamic jurists about the legality of sterilization as a permanent FP method. The jurists argued that sterilization, either by surgery or by taking medicines, is not permissible other than for pressing health concerns, such as a parent's hereditary disease that could transmit to the child. The jurists made this verdict based on the principle that a minor injury can be inflicted to avoid a major injury. It has also been clarified that any such disease be proved to be incurable by taking into consideration the help of modern medical technology.

In one of the popular schools of thought, Hanafi considers abortion is permissible if it is materialized within 120 days of conception. It is believed that the fetus does not have a human soul during this period of time. Early abortion has been discouraged (but not forbidden) when it lacks valid reasons or justifications, such as the mother's physical inability to breastfeed the child or the family's inability to employ a wet nurse. Another school of thought, such as Shafeei, favours this stance, while Al-Ghazali does not. The Zahiri and Maliki schools of thought disfavour abortion under any circumstances, however, some Hanboli jurists permit it up to 40 days from conception. Again, this strong stance can be overruled if it is medically advised that the life of the mother is definitely endangered. The mother's life takes precedence over the child's life on this basic juristic ground, 'the root is more valuable than the branch'.

Roudi-Fahimi (2004) highlighted the permissibility of contraception in Islam when detailing various schools of thought. A small number of Islamic jurists also oppose the use of contraception on two major grounds. Firstly, they believe withdrawal, or any practice that bars procreation, is infanticide, which is repeatedly prohibited and condemned in Islam. Secondly, they believe a larger Muslim population has been ordained by the religion and not to follow it is not to be on the right path of Islam. They also believe that FP is a Western concept which represents a conspiracy against Islam to diminish the Muslim population. Roudi-Fahami (2004) finds it not uncommon for FP to be politicized in most Muslim societies. Quoting the example of Iran and Algeria which dismantled their FP programmes for a certain period of time against religious and political controversies in 1970s and 1980s, they are now promoting

a national FP programme and Iran now has the highest level of contraceptive use among the Muslim countries.

Amanullah (2003) narrated both the favourable and disfavourable arguments and opinions of modern Egyptian Islamic scholars about contraception based on the Quran and *Sunnah* (the teachings of Prophet) and concluded that the country, with its huge population but with limited resources, can practice FP in their society.

2.7 Summary

The conceptual views and academic discussions in the literature review aim to address the issues raised by the research questions throughout the study. The detailed discussion has elaborated the core issues embedded with the unmet need for FP and how it is shaped with women's needs and preferences regarding the use of contraceptives. Women's empowerment and its impact on contraceptive choices have been detailed based on the socio-cultural setting of the respondents. The impact of FP contraceptive use has also been diagnosed with contextual issues as its outcome can reduce the existing gaps in service provision and has also been linked to the autonomy of women .The thoughts developed in this chapter will also integrate the contextual views of family planning in the next chapter to take a wider view of the current FP phenomenon in Bangladesh, linking the research questions set at the beginning of the study.

Chapter 3 Contextual issues of Family Planning

3.1 Introduction

This chapter attempts to further develop the background view with the existing, contextual ideas of the FP Programme in Bangladesh, highlighting the historical background of FP and its evolution as an organisation with its sister concern, the Health Department, and, under the bigger umbrella, within the Ministry of Health & Family Planning. This is later supported with community-based field service narratives and how quality of care is impacted by the community distribution and other allied issues. Discussion of Bangladesh's Population policy helps to visualize a more comprehensive understanding of FP in policy framing within a demographic dividend context. Moreover, some major contextual issues and trends of various determinants will also be relevant to gain a clear understanding of FP dynamics in Bangladesh by the end of this chapter. This chapter acts as an expansion to the academic discussions conducted in the Literature Review to shape a holistic overview of FP service provision in Bangladesh.

Though structurally Chapter 2 and 3 seem to be separated from each other, they are ,in fact,quite interlinked conceptually. If the previous chapter demonstrates the scholarly academic presentations regarding the unmet need issue, empowerment of women, autonomy and informed choices of women, the present Chapter 3 showcases the contextual issues of FP. Chapter 3 plays the role of exploring the academic gaps and fitting the wider academic issues in the context of FP programme of Bangladesh. So conceptually they cannot be alienated rather they build the solid structure of the thesis to move forward. It is expected, the Literature Review chapter would benefit from greater contextualisation of the FP programme discussed in this chapter.

3.2 Historical background to FP

The FP programme in Bangladesh has experienced various phases in the last 70 years after its voluntary initiation in 1955 by a group of social and medical workers. A formal field-based government-funded FP programme started from 1965 with the objective of controlling the population as a strategy of economic development in the country. The following list highlights the transitions of the FP programme (DGFP,2022):

Phase I: 1953-59: Voluntary and semi-government efforts initiated by the Family Planning Association, an NGO, in urban areas distributing contraceptives through hospitals and clinics.

Phase 11:1960-64: Government funded clinic-based Family Planning Programme

The government aimed to reach 6-7% of eligible couples with FP services based in hospitals and rural dispensaries.

Phase111:1965-70: Field-based Government Family Planning Programme

The FP Department, administered as an autonomous board, recruited full-time field staff and part-time *Dai* (a female village midwife) to cater for motivational programmes for eligible couples, delivered door to door at the grassroots level. The programme experienced a deadlock situation during the War of Liberation in 1971.

Phase IV: 1972-74: Integrated Health & Family Planning Programme

The department was functionally integrated into the Health Department at field level, shifting from an autonomous body to a fully-fledged Ministry of Health and Family Planning, with introduction of the oral pill as a contraceptive in the field.

Phase V: 1975-80: Maternal and Child Health (MCH) based multi-sectoral Programme

The highest policy making body, the National Population Council (NPC), was formed with the President of the Peoples Republic of Bangladesh as the chairman and other development-concerned Ministers as the members. Recruiting clinical staff for both clinics and field level setup, occurred on a regular basis as a thrust for the Maternal and Child Health (MCH) based FP programme. In January 1976, a National Population Policy outline was approved by the Government. Fertility was 6.3 and the Contraceptives use rate was 8% according to the Bangladesh Fertility Survey (BFS) (1975) conducted during this period.

Phase VI : 1980-85: Functionally Integrated Programme

Deliveries of MCH-FP services had been integrated into the Health Department at *Upazilla* (sub-district) level and below, with Health Officials becoming part of MCH-FP. Both the Health and the Family Planning Divisions were merged into one under the Ministry of Health and Population Control. Upazilla Family Planning Committees were formed, to be chaired by the Chairman, Upazilla Parishad, to facilitate the implementation of the programme at the local level. During this period, contraceptives use was just 25% (CPS 1985). Fertility started to decline slowly but was still high at above /woman children per woman.

Phase VII: 1985-90: Intensive Family Planning Programme

The multi-dimensional intensive and improved MCH-based FP programme expanded with rapid MCH-FP infrastructural development of the Union Health & Family Welfare Centres (UHFWC) along with Satellite Clinics—an outreach activity in the rural and remote areas—to deliver MCH-based FP services as a 'Social Movement' and achieved the real momentum as involvement of community leaders and

NGO ensued. Fertility was still high (5.1, BFS, 1989) and the CAR was slow to increase, at just 31% at this time.

Phase VIII: 1990-95: Reduction of rapid growth of population through intensive service delivery and community participation

Fertility declined visibly (to 3.4/woman) during this period as the promotion of FP as an integral part of development activities through inter-sectoral collaboration was ensured with increased resource allocation for programme implementation and enhanced quality of care. Enhancing women's status through education and increased involvement of NGOs and the private sector for supplementing and complementing government efforts expedited the reduction in fertility. Community based home delivery is thought to be the contributing factor of a rapid decline in fertility (from 6.3 in 1975 to 3.3 in 1991-93) (Cleland et al., 1994; Schuler et al., 1996; Phillips et al., 2003).
(The Family Planning programme had been implemented through an interim plan during 1995-97). Fertility declined substantially to 3.4 in the BDHS of1993-94, and CAR started to rise positively, reaching 44% in the same BDHS (NIPORT et al., 1995).

Phase IX: 1998-2003: Health and Population Sector Program (HPSP)

The HPSP introduced integrated FP with Health at *upazilla* (sub-district) level and below in 1998 (MOHFW, 1997) with the initiation of static clinics (Community Clinics), phasing out the domiciliary approach. However, the newly elected government re-established a separate establishment for FP and Health as it existed before July 1998 when it misfunctioned (MOHFW, 2003). The misfunctional integration of FP and Health has been evidenced with the adverse outcome of confusion due to dual administration, lack of coordination, unequal distribution of resources, and extra pressure on the field workers of both departments (Akhter, 2004).
This phase experienced the plateauing of fertility at 3.3 for almost a decade (1993-2000), while use of contraceptives (53%) was also slow, compared to the previous survey in 1996/97, at 50%.

Phase X: 2003-2011: Health, Nutrition, and Population Sector Programme (HNPSP)

To meet the multi-dimensional challenges according to the spirit of the ICPD, government has initiated a Health, Nutrition, and Population Sector programme (HPSP) entailing the provision of a package of essential and quality health care services responsive to the needs of the population, especially those of children, the elderly, and the poor.

This phase saw the outcome initiatives taken in previous decades come to fruition as fertility declined to 2.3 and contraceptive use settled at 61%. Other determinants of FP, such as child and maternal mortality, also decreased during this period.

Phase XI: 2011-2016: Health, Nutrition, and Population Sector Development Programme (HNPSDP)

As Bangladesh has achieved success in FP programmes against the backdrop of low literacy, low status of women, and low income, still it has high growth potential built into the age structures due to past high fertility and falling mortality. In line with emerging issues linked with this scenario, the sector programme addressed continuing and strengthening domiciliary services with community participation and gender sensitisation with increasing male participation, ensuring quality of services and HR forecasting, management, and development, while expanding FP services in the urban areas. Again, a stagnant situation can be seen to be occurring with fertility at 2.3, CAR at 62%, and unmet need at 12%, this is almost a motionless situation, starting from 2011 to 2017-18 with poor progress.

Phase XII: 2016-2022: 4th HPNSP

As with previous sector programmes, this five-year plan also highlights the policy initiatives for the reduction of fertility, unmet need, childhood mortality, and maternal mortality (MOHFW, 2017). The BDHS in 2017-18 demonstrates slow progress, or an almost stagnant situation, in almost all the major determinants.

The statistical data of last four decades (1980-2022) demonstrates that the FP Department has reduced fertility notably, from 7.0 (1970 onward) to 2.3 (2010 onward), while contraceptive use has multiplied almost 8-9 times to 64% in 2022, from 7% in 1970s. It is important to pinpoint a plateauing situation of FP activities which lasted from 1993 to 2000, less than a decade, with fertility and contraceptive use. However, such a plateauing situation revisiting from 2010 onward (with fertility 2.3, contraceptives use 61%, and unmet need 12%) became a concern for the policy makers as it halted the progress of FP in various ways, resulting in a re-design of the programme implementation to address the issues.

Showcasing the various phases of integration and dis-integration of FP critically, with a relatively robust Health Department with huge infrastructure, can shed some light to understand the complex dynamics of the FP programme.

3.3 Integration of FP with Health

Several rounds of integrations and dis-integrations with the sister department of Health had a great impact on the evolution of FP, both administratively and functionally. Khan (1986) stated that FP, beginning from its inception in 1965 up to 1980, enjoyed a separate organisational setup before it experienced its first functional integration from 1980-85. The functional integration had been practiced as the budgets and administrative provisions were controlled by the respective wings (both Health and FP) separately, from top to bottom. However, the integration also imposed the functionaries of FP up to *upazila* (sub-district) level and below, to undertake the activities of Health as an additional responsibility of FP and vice versa (Khan, 1986). FP experienced another major setback in the shape of integration with Health, with the introduction of the Health & Population Sector Programme (HPSP) from mid 1998 to 2003, while the CC concept (each one for 6000 community members) was incorporated, halting the domiciliary services for FP. The CCs were meant to have been established and functioning by the government, along with participation of local communities (Riaz et al., 2020). They became the main service delivery points for the patients at the lowest tier of administrative unit *Ward* with Community Health Care Providers (CHCP) as the main service providers, along with Health Assistants (HAs) of the Health Department and Family Welfare Assistants (FWAs) of the FP Department. Within 2001, almost 8,000 CCs, among 10,000, were found to be functional, however, the political leadership change in 2001 by national election sent this CC approach of rendering health and FP services into a complete deadlock situation from 2001-2006, reviewing some of the policies of the HPSP (Riaz et al., 2020). An independent commission formed by the government and the development partners favoured the community-based service deliveries and other forms of deliveries, shifting from the CC approach initiated by the previous government. Moreover, another review cited the approach to deliveries as a failure and as the reason for the stagnant situation of fertility (GOB, 2002). The CC project was revitalized with the return to power of the national leadership by its initiating government (1996-2001) in 2009, and around 14,000 CCs were found to be fully operational up to December 2019 with the recruitment of CHCPs (Banik et al., 2023). The period of 1998-2003 saw the real functional integration of FP with Health from *Upazilla* (sub-district) level and below with the major shift to CCs, while there was no functional integration of FP from 2009 onward. But, the revitalization of CCs in 2009 led to the major reduction in FP fieldworkers home visits as they had to render services three days a week at CCs (MOHFW, 2014). Health and FP field workers were instructed not to continue home visits and rather focus on the specific types of clients facing problems in accessing services (Bates et al., 2003).

Various interpretations justify the shift to static clinic services, especially phasing out the domiciliary services of FP, from 1998. As the number of fertile women began to increase, home based FP activities would require increasing resources; financial sustainability was challenged by international donors, mainly from the World Bank and USAID (Akhter, 2004; Routh et al., 2001; Rahman et al., 1997). Moreover, a poor field visit report on field workers in the BDHS of 1993-94 by the couples showed they were visited just once in the previous six months and field workers were busy only with the promotion

of temporary methods of contraception with a decreasing trend of long term and permanent methods (NIPORT et al., 1994).

Along with the justified views on shifting to static clinics, there were doubts among the government, policy makers, and researchers about the static clinic-based approach which could potentially jeopardize the impressive success of the population programme over the last 30 years. Community-based home delivery is credited as the contributing factor to the rapid decline in fertility (from 6.3 in 1975 to 3.3 in 1991-93) (Cleland et al.,1994; Schuler et al., 1996; Phillips et al., 2003). As the domiciliary programme sought to focus on minimizing the direct and indirect costs of contraceptives by bringing information and contraceptives to the doorsteps of the users at no user cost, or for a nominal fee, it had been credited by the researchers as the key factor behind the success of FP (Cleland et al., 1994; Phillip, Hossain & Arends-Kuenning, 1996). It had even been predicted that the good practices of the women, with the contraceptive prevalence rate already developed, might be abated (Hossain & Phillip,1996) if the domiciliary approach is halted by the static clinic approach.

Akhter (2004) demonstrated how the functional integration of FP with Health (1998-2003) impacted both departments in various ways, both at the top and bottom levels. Firstly, there was no visible change at top policy level as there remained a single Minister and a single Secretary to perform the activities. Secondly, the implementing body at the Ministry for both Health and FP was not separated, even though the portfolios of each department were quite different in nature. Thirdly, the controlling authority of Health and FP were the Civil Surgeon and the Deputy Director, respectively, at district level who were quite separate both administratively and functionally. The impact of integration was adverse at the final tier, at *Upazilla* (sub-district) level and below, where professionals at both departments felt they were burdened with job responsibilities additional to their assigned ones. The approach encouraged FP staff to help the Health Department activities and Health Department staff to conduct FP activities along with their assigned work. The confusion and frustration made them desperate to be liberated from unnecessary job targets for which they were not able to render their individual job responsibility successfully. Being critical about the suggestion of the aid groups (such as the World Bank and USAID), Akhter (ibid.) also illustrated that functional integration was meant to be one-sided as it aimed to maximise the infrastructure and resources of the Health Department by the FP Department.

Khan (1986) also showed the outcome of the functional integration which happened before 1985 and resulted in a lack of accountability, agony, and mental friction among the heads of both Health and FP at the *Upazila* level, discrimination in the official spaces against the FP by Health, neglect of the MCH services of FP by the Health doctors, anarchy at the sub-centres with dual administration, or no administration at all.

Due to the integration, the FP Officer, as the head of the FP Department, became sub-ordinated to the head of the Health Department, despite each having quite separate organograms within both

departments. Moreover, the integration gave the head of the Health Department all the financial powers of FP as well, making the FP officer sub-ordinate to the Health Department. This agony and mental friction between the heads created a lack of accountability from both sides. Apart from the distrust at the higher level of *upazila*, grassroot level practitioners from both FP and Health were reluctant to discharge the additional responsibility assigned to them by the protocol of the integration (Khan,1986).

As a result, the clinical sterilization programme suffered as the Health Department head was often reluctant to allocate an OT to perform the sterilization of clients of the FP Department on the grounds of poor funding, or for other superficial reasons. Moreover, most of the surgeons needed to come from the Health Department as the organogram for FP had a shortage of surgeons. Dual administration at the community level sub-centres had a direct detrimental impact as some of the sub-centres were fully owned by FP, some by Health, and some by both, with practitioners working at the same premises. The dual administration often resulted in a lack of accountability and supervision. Rivalry and conflict were the usual outcome of the friction between the two groups of practitioners (Khan,1986).

Khan (1986) also argued that the outcome of integration could be convincing and sound, however, it was finally concluded that the integration, made in haste and without any field trials, resulted in an enormous number of administrative problems. He suggests that in the interest of the viability of the national Health and FP Programme the integration should be maintained at all levels, both administratively and functionally. Otherwise, both the departments should be completely separated from each other to avoid the strong and parallel institutional hierarchies.

Akhter (2004) also raised similar types of arguments for upholding the specific entity of both departments as their functionalities are not the same in many ways. She also found that the funding for FP is more donor dependant, while it is revenue based for the Health Department. So, the policies for integration should focus on, and justify, the individual interests of both departments. Akhter (ibid.) finally suggested that the splitting of government commitments between the two departments is evidence of a political crisis which needed to be resolved for the welfare of the country (Akhter, 2004). El-Saharty et al., (2014), highlighting policy harmonisations, suggested strengthening the synergy and coordination of service delivery between the FP and Health Departments by ensuring capacity for systems strengthening. They concluded that initiatives such as cross-referral between programmes, efficient provisioning of FP and reproductive health issues through CCs are some ways to uphold the government's effort for improvements to FP.

The administrative phases that FP has undergone since its inception has a contributory impact on the policy formulations during the period. The next section highlights how community based distribution has impacted the programme's policy formulation during the period.

3.4 Community Based Distribution (CBD) Programme

CBD programmes are meant to be initiated in rural places, especially in the developing countries where normal family planning services do not exist or fail to work due to lack of service providers, such as doctors and nurses (Shelton et al., 1999). CBD programmes were first implemented in Latin America in the 1960s, in Asian countries in the 1970s and 1980s, and in African countries in the 1980s (Phillips et al., 1999).

Prata et al., (2005) closely reviewed CBD activities over three decades and found the importance of these programmes in the hard to reach and rural areas in the developing countries to still be increasing the CAR along with other family planning outcomes.

Different models of CBD programmes are followed by different countries. Home visits, one to one communication, distribution of contraceptives from mobile or fixed CBD depots, health education, IEC(Information,Education & Communication) activities, and referrals for clinic-based services, all make up the CBD programmes. In some cases, they are integrated into the permanent health structures where FP or health personnel are assigned to provide an efficient service delivery to clients.

There has always been a debate whether the CBD programmes are more effective and cost-efficient than other modes of FP service models, and also about the necessity for CBD programmes currently. Data collected from multiple countries reveal the necessity of the CBD based programmes.

3.4.1 Characteristics and impacts of CBD programme

As the CBD centres are located in close vicinity to the clients, it is likely that the access to counselling or care is increased. Modern contraception use was reported to increase three to 10 times when clients can attend a direct meeting with CBD personnel (Routh et al., 2001; Stoebenau et al., 2003). Women finding contraceptive sources within one km of their homes continued to increase their use of both modern and traditional methods in Vietnam (Thang & Anh, 2002). As the CBD personnel make home visits, the clients benefit as it costs them no money and little time (Arends-Kuenning, 2001) to visit them, this also allows clients to overcome the cultural restrictions that prevent women from going anywhere without a husband or a brother (Koenig et al., 1997).

One of the major successes of the CBD programmes is the judicious selection of health workers, mainly midwives and traditional birth attendants, within the community who are respected as health leaders (Phillips et al., 1999). The clients, mostly women in most of the family planning programmes, are likely to show interest in receiving reproductive healthcare from female CBD agents, and women are more likely to provide services to women in CBD programmes than in fixed, static clinics (Askew, 1989). A study in Bangladesh showed that the women who are served by female CBD staff are likely to use double the contraceptive methods than those served by a male (Phillips et al.,1993). A Tanzanian study shows that female CBD workers make 8.2 times more visits than their male colleagues (Janowitz, 2000).

But it is also true that it is the male CBD workers who can work as a catalyst to increase male participation in FP activities as most of the family planning programmes around the world failed, or struggled, to increase the male share in the tally (Gribble, 2003).

3.4.2 Cost-effectivity of CBD compared to other delivery models

CBD programmes may not be cost-effective to provide, despite its affordability and greater accessibility among the users than other clinic-based programmes. The study on alternatives to CBD conducted in Dhaka, Bangladesh, showed the cost per birth averted and cost per quality adjusted life year (QALY) gained were lower in the clinic setting than in CBD—USD 13 and USD 17 vs. USD 18 and USD 42, respectively (Routh et al.,2001). It is to be noted that the most cost effective methods, like IUDs and sterilization, cannot be implemented in a CBD setting other than in clinics. Levin et al., (1999) showed that outreach, or home-based delivery, is more cost-effective than centrally located service delivery of contraceptives. Another study of family planning in 10 developing countries (Bangladesh, Colombia, Egypt, El Salvador, Guatemala, Kenya, Mexico, Sri Lanka, Tanzania, and Thailand) reports that the less privileged or under-served populations can be better served with CBD programmes if they are coupled with another FP services delivery system (Huber, 1989).

3.4.3 Unmet need for FP services and CBD

Prata et al., (2005) took selected countries with large rural populations and showed some interesting differences in the levels of modern contraceptive use and unmet need for FP services in rural areas. Bangladesh and Indonesia, two relatively low unmet need countries, reveal the larger share of modern contraception from CBD programmes. In contrast, most of countries with a lower share of modern contraception from CBD programs have a higher percentage of unmet need in the rural demographic setting, as seen in Table 2, below.

Table 2: Unmet need for FP services and modern contraceptives provided by CBD programmes in selected countries:

Country	Rural Pop (%) UNFPA 2003	CPR (%)	Unmet Need in rural areas (%)	All modern methods (%)	Pills (%)	Injectables (%)	Condoms (%)
Ethiopia, 2000	84	3.3	37.3	6.9	6.8	6.0	0.5
Malawi, 2000	84	24.1	30.7	6.7	15.3	7.0	10.2
Uganda, 2000/01	88	14.7	36.2	1.5	4.1	4.3	6.6

Bangladesh, 1999/2000	76	42.7	16.0	34.9	49.9	36.5	17.9
Indonesia, 1994	54	50.5	10.8	19.4	14.5	38.4	6.5

Source: ORC Macro, 2004, MEASURE DHS STATcompiler.p.405

This is a clear indication that CBD programmes have increased the rate of contraceptive acceptance and can continue to do so.

3.4.4 Factors making CBD more effective

Strategies need to be critically analysed to increase the cost-effectiveness of CBD programmes. It has been suggested that to have the highest level of efficiency other existing or new modes of service delivery in the programmes, such as IEC (Information, Education & Communication) and social marketing, can be combined with CBD, along with other maternal and child health related services. Adding another variety of methods, such as offering services directly or by referral, can also be regarded as an important factor for increasing access to contraceptives.

Providing increased salaries to the CBD personnel leads them to visit more houses, hence it can decrease the training costs (Janowitz et al., 2000). Competitive packages for supervisors can also have a good impact as they are likely to work more, or harder, to maximise performance and productivity. It is also suggested that fulltime employees of Health and FP can help the CBD agents as programme managers, making them responsible for a wide range of services in their jurisdiction (Askew, 1989).

Supervisory visits may have some impact on the quality of care delivered by the service of agents. Decreasing monthly supervisory visits to quarterly visits can reduce the programme costs as supervisors find more opportunities to oversee more posts in a given period (Vemon, 1988). Again, it is also suggested that compromising supervisory visits can be compensated and seen as an opportunity for on-the-job training for the agents (Prata et al.,2005).

Researchers have suggested that multiple services in a single health visit could be more cost-effective as this incurs the cost of an individual service (Levin et al., 1999). Another important method of providing multiple services is to train the CBD agents with basic clinical procedures and permit them to deliver IUDs and injectables (Farr et al., 1998); this narrows down the referrals, optimizes the scarce resources, and, above all, makes the CBD agents more reliable.

Prata et al., (2005) suggest that for implementation, funding, and sustainability, the organisation of CBD programmes can be affiliated with national or international organizations. To avoid any kind of political obstacles, CBD programmes might have affiliations with the government for its long-term funding sources (Askew, 1999). CBD programmes might have partnerships with like-minded organisations who

provide the same kind of service in the arena of FP (e.g., women's health care, family health care, and obstetrics services).

Ultimately, it is the core responsibility of the programme personnel to determine which mode of delivery is more feasible in a given community, as Prata et al., (2005) suggest. To tackle such situations, programme personnel may consider whether the programme has reached a stagnant position or not, and how much they should strengthen the programme. It is suggested that based on the models of existing FP programmes, CBD programmes modality can be streamlined.

It has been evidenced that CBD by field workers has been instrumental in increasing the CAR and reducing unmet need in the community in developing countries. The importance of CBD programmes is still argued to be a contemporary issue in the current context. Apart from CBD, quality of care in various dimensions can analyse women's attitude towards contraceptive use and norm with side effect. A comprehensive analysis of quality of services has been developed in next section to show how the various ingredients of quality of care impact contraceptive use, fertility, and unmet need.

3.5 Quality of care in FP

Over nearly three decades, from the early 1960s to the late 1980s, FP programmes were meant to address issues related to population control (Seltzer, 2002). Until 1990, Bruce (1990) pioneered an innovative Quality of Care (QoC) framework for FP services, aimed at the importance of the quality of services provided to clients by caregivers (Jain & Hardee, 2018). Popularly known as the Bruce/Jain QoC, this framework upholds client preferences for adopting FP services primarily, but with other integrated issues. The six elements of the QoC framework are:

1. allowing the client to choose a FP method (rather than FP/Health personnel telling individuals what method to adopt);
2. having access to information so that the client can make their own informed choice;
3. ensuring the professional competencies of the service providers;
4. maintaining interpersonal communication so that the service providers treat clients with respect;
5. establishing follow-up mechanisms and an appropriate cluster of services;
6. providing clients with the opportunity to make their choices from among a range of services

Jain and Hardee (2018) suggest that although the quality of FP services became a matter of discussion following the ICPD in1994, and has continued to guide FP programmes since then, the 2012 London Summit on Family Planning reinforced the importance of QoC and rights-based programmes that uphold the needs of clients.

Bruce (1990) doubts that few studies are available where QoC has been defined clearly. She suggests that availability, cost, and quality are related issues, and fundamental elements in FP and reproductive health programmes. The word 'quality' may have implications, suggestive of anything of a high standard. Donabedian (1980) refutes it as a standard at all and deems it as a property all programmes want to have. It is suggested that quality can be termed good or bad, satisfactory or unsatisfactory, when a judgment is imposed on it. Referring to early FP literature, Bruce (1990) argues that quality has been synonymously taken as the availability or accessibility of contraceptives and technical sophistications of the equipment of clinical operations, neglecting the interpersonal dimensions of care embedded in it. However, she acknowledges QoC and availability as important determinants of contraceptive use.

3.5.1 Access, quality of care, and medical barriers

Bertrand et al., (1995) conceptualized quality of care with issues of accessibility and medical barriers imposed. They claim that access to services is an important part of the QoC process. Taking 'access' 'accessibility' and 'availability' synonymously, they define 'access' as the degree to which FP services and products are attainable with certain effort and cost, both acceptable within the limits of larger sections of the community. Cost can be understood as opportunity, or expenses for service fees, supplies, or transportation. Operationally it can be defined as having the presence or absence of service providers, services, or a package of services, and supplies of methods meant for a larger section of the community. Bertrand et al., (1995) viewed access as a multi-dimensional component, beyond merely geographical or physical access, which can play an important role in changing contraceptive use. Five elements of access have been discussed in the following way (see Table 3 below), (although the first four were described earlier in the 1980s as the elements of 'availability' by Foreit et al., (1978).

Table 3: Elements of Access

Geographical or Physical Accessibility	The extent in which services or service delivery points can be reached by the clients with an acceptable effort.
Economic Accessibility	The expenses of reaching a service or supply points in line with the economic means of the clients. Economic accessibility not only discourages the clients from adopting methods, but also acts as a potential barrier or the discontinuation of methods.
Administrative Accessibility	Unnecessary rules and regulations at service delivery points, such as restricted office hours in a centre, irregular supplies of contraceptives during child immunization periods, or growth monitoring.
Cognitive Accessibility	The clients are aware of the locations or service delivery points, but not sure about the services provided by them.

Psychosocial Accessibility	The clients are not barred by psychological, attitudinal, or social factors (e.g., social stigma towards women about sterilization, loss of physical strength after vasectomy) in seeking family planning services.

Source : Bertrand et al.(1995,p.65)

Table 4: Elements of Medical Barriers

Outdated contraindications	Applications of outdated and obsolete contraindications may act as a barrier. For example, tuberculosis or epilepsy may hinder the use of hormonal methods.
Other eligibility barriers	Women's age, parity, and the consent of their spouses can be deemed as the impediments to adopting a FP method.
Process or scheduling hurdles	Physical tests and diagnostic examinations for adopting a FP method seems to be intrinsic sometimes but unjustifiable as a prerequisite, which also hampers the service.
Service provider qualifications	Not all the community base distribution personnel are qualified to provide some methods, such as IUDs.
Provider bias	The providers may exhibit bias for encouraging or discouraging some specific methods without sound medical rationale. They might also disregard the client's preference in adopting a method suitable for her.
Inappropriate management of side effects	This may include some minor side effect of a certain method disregarded by the provider which may lead a client to discontinue the most suitable method for her.
Regulatory methods	Huge time consumption for the importing of contraceptives, or delayed distribution mechanisms, can be regulatory barriers to promoting contraceptives to the clients.

Source: Bertrand et al., (1995,p.66)

Bertrand et al., (1995) suggest that some sociocultural or administrative barriers, such as age and parity restrictions can be considered as medical barriers if the service provider thinks of them as medical reasons (see Table 4, above). By contrast, a medical reason given, such as spousal consent, can be seen as an administrative or psychological barrier, rather than medical.

The influence of medical barriers and practices from situation analysis in Pakistan showed that only one-half of all women (50%) were eligible to adopt FP methods due to the widespread misconception of age and parity requirements (Population Council, 1993). Further evidence from Nigeria demonstrated that one-half (50%) of all clients who received FP methods said they chose to do so prior to their visit (Population Council, 1992).

3.5.2 Concerns with medical barriers

Grimes (1993) suggests that some of the screenings, such as blood pressure measurements or serum, cholesterol, and breast or pelvic examinations may be taken for further prevention, but these cannot be deemed mandatory for the safe use of hormonal contraceptive methods. Cottingham and Mehta (1993) argue that the primary motive behind reducing the medical barriers is to uphold the values of women's autonomy and preferences. It aims to relieve them from undesired, long, and unnecessary medical procedures. Some critics believe that reducing the procedures in the name of wider access to FP preferences might compromise QoC as it focuses on the number of clients, rather than the quality of services provided to them. In fact, there is no paradoxical stance between quality of care and access to services and evidences have been found that with improved quality of care comes a reduction in the minimum medical procedures. Bertrand et al., (1995) believe that resources should be expended for QoC (counselling, aseptic techniques, and screening for STDs), rather than for investment in scarce resources for the removal of medical barriers.

Bruce (1989) and Jain (1989), in their joint QoC framework, classified the following dimensions as the characteristics of QoC: choice of methods, technical competence, information given to clients, interpersonal relations, mechanisms to ensure follow-ups and continuity, and an appropriate cluster of services.

In their framework they admit they focussed more on those who have 'access', although they were aware of those not covered by the service. Bertrand et al., (1995) acknowledge both access and QoC as important issues for programmes, but they prefer to view them as the two distinct issues as they might provide programme managers with the means to address the issues differently. For example, the number of service centres is inadquate in hard to reach areas, which is an access issue. In contrast, welcoming and treating the clients disrespectfully is a QoC issue. The authors deem that addressing the two different issues might be different from a management point of view. However, they find 'access' as an important issue to develop QoC from the programme's point of view, as it is dealt with in many countries, and they do not want to exclude it as a lower priority issue.

Bertrand et al., (1995) add the issue of 'medical barrier', linking it to 'access' and 'QoC'. Medical barriers have been classified as the practices (either at individual or policy level) which play a role in impeding how access to different FP methods are accessed (Shelton & Angle, 1992; Shelton et al., 1999).

Although Bertrand et al., (1995) find access to services, QoC, and medical barriers as some of the most discussed issues, they found no empirical evidence for linkages among them. Their work showed at least two ways that each of them could be interlinked.

Firstly, QoC and medical barrier issues can increase or decrease access to services. For example, a service delivery point provides excellent QoC to clients for which the clients become prepared to overcome the barriers, but they face expenses of transport to reach the facility. Clients who are convinced of QoC can motivate other clients to seek these services at the facility. Eradicating unnecessary, or rather optional, medical barriers can have a direct linkage to access. If the providers reduce the number of follow-up visits for clients, psychological accessibility is increased.

Secondly, Bertrand et al., (1995) argue that the six elements of QoC provided in the Bruce-Jain Framework (see the beginning of Section 3.5) can be addressed if the unjustifiable medical steps in selecting a contraceptive method can be disregarded. They exemplified that clients have more choice of contraceptives if the impediments on medical grounds are eliminated. This benefits the clients, upholding a woman's right to choose, providing her the opportunity to be satisfied with the method she prefers, and increasing the likelihood of her continuing with her choice (Cottingham & Mehta, 1993). Offering clients flexible follow-up visits for injectables and several cycles of oral pills in a single visit, rather than disobeying the less rigid medical barriers, can also increase the continuation of a particular method among clients (Bertrand et al., 1995).

3.5.3 Quality of Care (QoC) Framework

Based on the distinctions of the comparisons of the FP QoC framework with the definitions of quality, prior experiences, and issues in measuring quality, Jain and Hardee (2014) propagated five modifications to the original framework.

Firstly, they do not differentiate the safety of contraceptive technologies and compliance with infection prevention practices. In FP a regulatory body approves the safety of drugs and contraceptive technologies. Again, providing skill to the medical personnel regarding contraception and infection prevention is also important in ensuring safety when imparting clinical methods to clients. Based on this issue, WHO clearly included medical safety elements, such as the status and availability of expired and registered drugs during their incorporation, in their definition of quality.

Secondly, a way of communication between clients and providers was mentioned, but not clearly stated, in part of the information: "the information imparted during service contact that enables clients to choose and employ contraception with satisfaction and technical competence" (Bruce, 1990). Jain and Hardee (2018) suggest that the use of 'information exchange', in place of 'information' not only focuses on client-provider interactions, but also aligns with client-centred and rights-based approaches of the FP QoC framework.

Thirdly, the framework includes the element of follow-up for the clients when they return for their next visit, but not for switching methods. However, subsequent research on quality suggested inclusion of

information about switching methods based on the client -provider interaction, which will help clients choose a method suitable for their reproductive needs.

Fourthly, the framework includes the need for quality of interpersonal relations in accordance with the system, providing a way of treating clients with dignity and respect and upholding their confidentiality and privacy. Bohren et al., (2015) and Abuya et al., (2015) point out that respectful care has received increased attention from clients regarding the receipt of FP services from the providers.

Fifthly, based on the appropriateness of improvement and measurement, the elements of the framework are divided between structure and process levels. It was found to be difficult to apply and measure all six elements at each level separately, despite their importance to both structure and process. Jain and Hardee (2014) suggest that client-provider interactions encircle information exchange and interpersonal relations, and that follow-up mechanisms become the core tool to operationalize and measure all elements of quality at the point of care.

Kumar (2015) summed that up, "with some modifications, the widely accepted Bruce quality framework, which has guided international family planning for twenty five years, could continue to serve as well going forward". Jain and Hardee (2018) anticipate that the revised QoC framework will help measure various elements of quality at structural and process levels.

Jain and Hardee (2018) suggest that "aspects of dignity, respect, privacy and confidentiality be made explicit under the element of interpersonal relations", so that the QoC framework can be made compatible with rights-based family planning.

Huezo and Diaz (1993) highlighted that providers' goals should also be about delivering QoC to clients. Training, information, supplies, guidance, back-up, respect, encouragement, feedback, and self-expression (all levels of workers in FP need to give their views regarding quality and efficiency of services) make up the list. Choi et al., (2016) suggested that quality should be incorporated as one of the six elements of access as identified by Bertrand et al., (1995).

Jain and Hardee (2018) deem that the inclusion of quality in the purview of rights-based FP cannot overlook either safety or client-centred care as the dignity of the individual is at the core of rights-based approaches. Although client-centred care and safety are the two basic ingredients of this approach, each can be different in their importance. Client-centred care is important every time a client comes in contact with the services, regardless of the method, source, or provider. On the other hand, safety-related issues regarding the inception of clinical methods, such as IUDs, implants, or sterilizations, are of more importance.

The above couple of sections highlight how quality service can be ensured by the service providers to the service seekers which can narrow down the gaps in service provision aiming to reduce unmet

need.As the service providers are important to address the service gaps, skill increase among the providers is embedded with issues of quality services.The following section shows how skill increase can be a pivotal part to ensure quality of service.

3.5.4 Quality of care and skills increase

A shortage of service providers in FP is a common phenomenon as a great number of providers retire every year and are not immediately replaced with fresh new recruits due to various administrative issues.

Needs-based shortages and imbalances in skill-mixes are challenges for any health workforce.The term skill-mix has been used to describe the mix of posts, grades, or occupations in an organization. Task shifting has been defined as transferring job responsibility to an existing staff member, or to one with less training (Fulton et al., 2011). Different types of task shifting scenarios are found, such as shifting the responsibility to a higher skilled, or to a less skilled, practitioner, e.g., shifting from 'nurse' to 'CHCP'. Again, tasks can be shifted from lower skilled to higher skilled. For example, general medical officers can be skilled in specific technical knowledge, such as obstetrics or sterilization (Dovlo, 2004).

Bangladesh has been declared by WHO as one of the 58 countries globally facing an acute problem with skilled and trained health care providers (WHO, 2006). Unfortunately, the problem has not gained proper attention from policy makers and there are many limitations regarding information sources. However, the Health Care Provider Survey (BHW, 2007) attempted to throw some light regarding this knowledge gap and finally helped formulate some necessary and appropriate policies to develop an improved health system to ensure that service seekers get quality of services (Gwatkin et al., 2004) and, importantly, a rational skill-mix in the foreseeable future. A positive point to arise from the survey was that it included all the formal and informal health care providers from all sectors nationally, thus it presents a comprehensive picture of the prevailing health care scenario in the country. It also highlights the urban-rural differences in all the administrative divisions of Bangladesh.

3.6 Demographic dividend and population policy

3.6.1 Demographic dividend

Demographic dividend is the outcome of demographic transition. Demographic transition is defined as a demographic situation which exists while the population of a country moves from a higher level of fertility and mortality to a lower level of fertility and mortality (Kirk, 1996; Caldwell et al., 2006). During the phases of demographic transition, many countries experience a change in size and age composition of the population, resulting in an increase in the generation of youth. Many demographic,

social, and economic opportunities, as well as social and policy challenges, are the outcome of this demographic transition (Bloom & Williamson, 1998; Pool et al., 2006). These opportunities are considered as the window to more opportunities. The demographic window of opportunity is transient in nature and does not automatically turn into a demographic dividend. Countries experiencing this phenomenon need to invest the savings made in infrastructure and human resource development to enjoy a good harvest from the demographic dividend (Islam, 2016).

It has been demonstrated that the major traits of population policy indicate population management in such away that it can address the rapid increase in the youth population (15-64), often considered a demographic dividend. Due to the lower rate of fertility and mortality, as the BDHS reports show from 1990, the medium age structure of the population is getting bigger and wider, day by day. The medium age increase in the population has triggered the demographic dividend scenario in the country, which is an integral follow through of demographic transition. As the situation gives rise to various economic and social opportunities (labour force), as well as policy challenges (ageing population and social unrest due to joblessness), so the issues of demographic dividend and economic development have been embedded within the FP policy implementation issues in the country.

Discussing the Population and Housing Census-2011, Abusaleh (2017) has shown that with the decreasing rate of population growth, the youthful generation has increased with the decrease of dependent age structure, notably under 15 years and over 65 years old. As a result of this decreasing dependant age structure, Bangladesh has the highest number of working aged population today, which is leading to sustainable economic growth (Abusaleh,2017). Abusaleh (ibid.) has shown how reduction of fertility and economic development went hand in hand in the context of Bangladesh over the last 40 years with the country's remarkable economic growth rate of five to six percent every year in the last two decades, despite global recession. Blake (2011) also highlighted this period as the transformation phase from a country plagued by famine to one with largely self-sufficient food production and steep drops in maternal and infant mortality in line with women's empowerment and education. Matin (2012) also believes the demographic dividend can open windows of opportunities for increasing per capita growth in two major ways. Firstly, the increasing proportion of the working-age structural group in the total population has a positive impact on total GDP, leading to an increased ratio of producers to consumers.

In order to reap the harvest of the demographic dividend, Islam (2016) suggests that Bangladesh needs to really focus on the quality management of the young population by providing them with quality education, proper skills to make them an appropriate workforce, and good healthcare for maximum life expectancy, for the socio-economic development of the country. Islam (2016) aptly remarks that as the experiences of South-East Asian countries were found to be positive in the recent past, with the

maximum utilization of the demographic dividend, Bangladesh can also be a successor of these nations, utilizing the output of demographic transition.

Both Islam (2016) and Matin (2012) predict that despite having the demographic dividend up to 2040, Bangladesh might experience demographic dividend reversal at the end of 2040, as was fated to Japan and most of the Western developed countries. As the working population force will be shrinking, the number of older citizens will be sharply increasing (Gomez & Lamb, 2013). Zaman and Sarker (2021) consider that Bangladesh entered into the demographic dividend phase in the early 2000s and will be extracting the benefits up to 2040, at which point the benefit will shrink to the lowest point. They suggest that a proper strategic framework plan for maximising human resources could benefit the country by reaping the harvest of the demographic dividend, optimally and efficiently. They also forecast Bangladesh will be more likely to be harvesting the benefit up to 2070, even in a shrinking way and despite some challenges. Alhough Bangladesh is still some way from that situation, the country needs to capitalize on the demographic dividend outcome of the demographic transition. If Bangladesh cannot materialize the opportunity by development initiatives, it will lose the working age population soon, leaving them as a burden on the country (Islam, 2016). Losing the work force population and increasing the number of pensioners and dependant older generations can make the situation a double-edged sword for the country. Chaudhury (2014) warns that if not enough jobs are created for the younger generation, Bangladesh might experience a demographic catastrophe which may lead to a 'youth quake' or 'tsunami' (Teitelbaum & Winter, 2014). Matin (2012) also concludes that due to the lack of policy formulation to maximise the output of the demographic dividend, Bangladesh might have to face a huge increase in unemployment and unbearable strain on education, health, and old age security. El-Saharty et al., (2014) interlinked all the cross-cutting issues to accelerate the demographic transition, i.e., coordinating at a high level to ensure multisectoral engagements to implement population policies, adding the age increase in child marriages, widening access to education, developing skills, and providing job opportunities and social safety nets for the vulnerable population groups, are all recommended.

3.6.2 Population policy

The first initiative of population policy formulation was taken in 1976 on the basis of Bangladesh's previous five-year plan (1973-78) in which the population was identified as the number one problem facing the country. Against this background, a population policy was formulated and approved in 2004, giving emphasis to achieving the Net Reproductive Rate of 1 (NRR=1) by 2010 so that the population could be stabilised by 2060 (MOHFW, 2004), although the 2010 target was not reached. The population policy of 2004 had no costing figures included and had not been implemented effectively. The National Population Council, formed with recommendation of the population policy headed by the Prime

Minister, held their last meeting in September 2010, whereas it used to meet regularly during the period of 1982 to 1990. Later, the government revised the National Population Policy of 2004 and Cabinet adopted it in September 2012 (MOHFW, 2012). Although this revised policy focused greater attention on the institutional arrangements, such as coordination among the ministries and costing figures (MOHFW, 2012), it still lacked the accelerated effort required to address the demographic transition, expedite the economic benefits of the youthful generation, and harvest the demographic dividend. Policies on expanding education, particularly for the women, increasing the age of marriage and first childbirth, investing in skills generation for the unemployed youth, creating a job market for the young graduates, and finally expanding social safety nets for the vulnerable and elderly, could be some of the priorities in the population policy to best address the demographic dividend issue (El-Saharty et al., 2014). This would require strengthened coordination within the public sector and between the public and private sectors, although these were mentioned in the population policy (MOHFW, 2012). The NPC, headed by the Prime Minister, will coordinate the inter-ministerial activities of 25 ministries mentioned in the policy. The Ministry of Health and Family Welfare will be the lead ministry as the secretariat of the NPC. There will be a small task group attached to the office of the secretary/additional secretary to help the secretariat assist the NPC to prepare policy issues and necessary documents, and prepare for progress according to the decisions taken by the NPC. DGFP has been assigned as the focal position for implementing and monitoring the activities mentioned in the population policy. The major traits of the population policy categorically emphasise the multi-sectoral engagements with both GO and NGO collaboration, along with coordination of various policy issues with other government ministries with a view to strengthening the institutional management of the FP Department for policy implementation.

While the above-mentioned discussions present an overall and generalized view of FP to give a comprehensive understanding of the implementation process, the following issues detail specific factors and issues in order to grasp the contextual themes of the FP programme in Bangladesh.

3.7 Contemporary issues in FP

The following section outlines issues interlinked with the sexual and reproductive health of women. The impact of contraceptives discontinuation among women highlights the present scenario of FP in the final section of the discussion.

3.7.1 Women's Sexual and Reproductive Health Rights (SRHR)

The ICPD Programme of Action initiated the definition of reproductive health, including sexual health (United Nations,1995a, Para7.2). It has been defined as the right of all couples, as well as individuals, to determine the number and timing of the children they want to have and to have the access to the

means to do so, including reproductive health services which are free of discrimination, coercion, and violence. Basically, it has been recognized as the cluster of services generally summarised as FP contraception, safe abortion, maternity care, and prevention and treatment of STIs (Sexually Transmitted Infection) and HIV (UN, 1995a, para 7.6). WHO also recognises these sexual and reproductive health (SRH) services as a guaranteed minimum for women (WHO, 2011).

Before the inclusion of sexual rights, the programme used many paragraphs to protect the right to access SRH services and information, irrespective of age or marital status, and covering all women, including adolescents, to realise their human rights regarding their sexuality. It also vanguarded the challenges of child marriage, widespread violence against women and girls, and other types of abuses of human rights and fundamental freedoms in relation to sexuality (Kismodi, Cottingham, Gruskin & Miller, 2015).

Bangladesh has shown tremendous development since the ICPD of 1994 in health policy priorities and investments, from a narrow focus on FP to comprehensive services for sexual and reproductive health (Jahan & Germain, 2004). The major initiation of SRHR activities in Bangladesh started with the implementation of the integration of the HPSP from 1998 to 2003, which really embraced the policies to fulfil the commitments made in the ICPD (Jahan, 2003). As STIs and HIV prevalence was not alarming at that time, Bangladesh prioritised continued delivery of contraceptive use and menstruation regulation (MR) services and emphasised developing skilled birth attendants and emergency obstetric care (EmOC), all of which was found to have positive outcomes with maternal mortality declining significantly (NIPORT, MEASURE Evaluation and ICDDR, B, 2012).

Although HPSP was abolished in 2003, Bangladesh continued to make advancements in sustaining comprehensive reproductive health services. The next two years of the national five-year programme included nutrition and HIV in their agenda. As urban areas did not come under government FP services, the government collaborated with NGOs to provide services to the urban poor (Afsana & Wahid, 2013). As one stop crisis centre services have been introduced in all public hospitals for women survivors of violence, attention to SRHR has reasonably increased in the meantime (Afrose et al., 2012).

Maternal mortality has been reduced to 194 per 100,000 live births (NIPORT et al., 2013) and has yet again declined to 176 more recently (UNPD, 2017). Fertility remained stagnant (2.3) and unmet need has declined to 10% (NIPORT et al., 2023). Abortion related death has decreased to a minimum 1% of all maternal deaths (Khan et al., 1986) compared to 33% in the late 1970s (NIPORT et al., 2012; Rochat et al., 1981). Increased access to education, mobility outside the home, and employment have facilitated women's empowerment significantly and have undeniably contributed to the advancement of maternal health (Sen, 2013). In spite of these successes, deliveries by skilled birth attendants remain low (70%), progress on anaemia and under-nutrition is stagnant, and adolescent marriage and pregnancy remain high (NIPORT et al., 2023). Jahan and Afsana (2015) suggest that pragmatic and effective planning, policymaking, budgeting, and programming need to be taken to address both old and new issues.

Adolescent reproductive health issues, and those underprivileged living in hard-to-reach areas, should be given priority. Caregivers should be trained with knowledge of SRHR.

Both MR and abortion issues are an integral part of the women's SRHR issues which contribute directly to quality of care in FP.

3.7.2 Menstrual regulation (MR) and abortion in the Bangladesh context

MR has been recognized officially as the procedure of regulating the menstrual cycle for establishing pregnancy, when menstruation is absent for a short duration and has been made available as a service in Bangladesh's FP programme since 1979 (GOB, 1979). MR has been allowed up to 12 weeks from a woman's last menstrual period (LMP) if provided by a graduate doctor, and up to 10 weeks if provided by a family welfare visitor (FWV), a type of community level family planning services provider with technical knowledge of MR (Singh et al., 2012). MR has been included in the FP programme not as a contraceptive method but as an effective backup service in case of the failure of a method; no method is completely successful in preventing unwanted pregnancy (Olivera et al., 2008).

As reproductive health services are wide ranging, there was demand for inclusion of MR among the FP services by the service providers and women's organisations. It has been recently argued by Johnston et al., (2008), that MR has been marginalized within the overall health policy of Bangladesh.

Abortion in Bangladesh is permissible only to save the life of the mother under the Penal Code of Bangladesh, 1860 (United Nations, 2002). Up to 2010, manual vacuum aspiration (MVA) and dilation and curettage (D&C) were the only approved methods to conduct MR. However, the government approved the two-drug regimen known as MR with Medication (MRM) in 2014. Although it has evidence that the MR programme has contributed to the reduction in maternal mortality (Hossain et al., 2012; NIPORT et al., 2001, 2011), yet abortion poses serious health, economic, and social concerns for women in Bangladesh. The report says that an estimated 653,000 induced abortions were conducted in Bangladesh in 2010, while 231,000 women were reported to have taken treatment for the complications resulting from unsafe abortion (Singh et al., 2012).

Among 30% of unwanted or mistimed pregnancies result in MR and unsafe abortions. Although MR services are available in both government and NGO health sectors, women tend to suffer from the complications of unsafe abortions partly because they do not want to accept the services from the formal MR programme. One study about the women who have terminated pregnancies reveals that over half first attempted to induce an abortion without contacting skilled medical personnel. Rather 24% sought care from traditional rural healers, 12% from rural doctors, 6% from family members, 6% from

homeopaths, and 3% were self-induced. Vegetation, such as creepers or roots, were used by 25% of these women, most of which likely resulted in complications (Bhuiya et al., 2001).

Rashid et al.'s (2011) study reveals the fact that poor rural women are forced to seek informal providers for their reproductive health care needs. Their findings also reflect that staff shortages and poor geographic coverage, with staff reluctant to serve in the rural areas, skill mix imbalances, and a weak knowledge base are some of the emerging challenges to the existing health workforce in the country. Maternal and other reproductive health care facilities at most of the public infrastructures are poorly equipped, except for some specific FP and maternal health services. Another study reports the presence of brokers or middlemen who interfere with potential MR clients and drive them towards private facilities of questionable reputation of quality (Rashid , 2010). Major highlights of the MR service barriers from the studies are the cost of services, the distance to reach service facilities, preference for private facilities, poor QoC, and discrimination by the service providers against poor women, poor quality of clinical services, shortages of drugs and MR syringes, and insufficient training of providers.

3.7.3 Factors of contraceptive discontinuation

Despite Bangladesh's rapid eight-fold upliftment in CPR, from 8% in 1975 to 64% in 2022, and impressive reduction in fertility, 6.7 in 1975 to 2.3 in 2022 (NIPORT et al., 2023), 33% of the pregnancies in the country are still unintended. The reasons may be attributed to unmet need of family planning, or discontinuation and different patterns of switching methods (Huda et al., 2017). Bairagi et al., (2000) showed that fertility does not solely depend on the prevalence of contraceptives, rather it is more regulated by the contraceptive use effectiveness and user adherence. Issues like contraceptive discontinuation, switching, method mix, and method failure can also explain the causes of unintended pregnancies for which almost 30% of fertility could have been reduced. Discontinuation rates for all methods declined from 26% in 2011 to the current rate of 30% in 2014. Reasons for discontinuation have been stated as desiring to become pregnant (31%), experiencing side-effects (26%), and becoming accidentally pregnant (14%) (NIPORT et al., 2020).

3.7.3.1 Desired fertility

Kamal and Islam (2011) showed that pregnancy order, religion, previous use of contraceptive method, region, and wealth index each have a significant association with pregnancy intention status. In 2014 actual fertility was 2.3, although the desired fertility rate (i.e., lower than or equal to fertility) was 1.7. Saha and Bairagi (2011) found that son preference, along with security against infant and child mortality, lack of quality FP services, and ineffective use of methods were some of the reasons for the fertility gap

among the women. They also showed that fertility was higher for women without sons and lower among women with a number of sons. Reza (2001) and Islam (2010) also showed that dependency on sons is likely to be more than on girls as boys are economically more productive than girls and women with sons are more likely to use contraceptives. It was also found that in many parts of the country the timing of a third birth among those women with two sons is likely to be later. Gipson and Hindin (2009) showed that early marriage of the women, the age gap between husband and wife, lower or reduced educational and job opportunities for women, are given by women less often as reasons for contraceptive use than son-dependency. However, they also deem that the practice of priority to sons is gradually decreasing.

3.7.3.2 Discontinuation and switching patterns

The high rates of modern contraceptive method discontinuation and the low use of clinical contraceptive use have been identified as major reasons for the stagnant fertility rates in Bangladesh (Kabeer, 2001). Fertility is determined with the pace of discontinuation of contraceptives by different methods, from more effective to less effective contraceptive methods, or vice versa. The fertility targets of couples are determined by the increasing/decreasing trends of the discontinuation of methods. Hossain et al., (2004) and Vaughan et al., (2008) showed that contraceptive users can reach their reproductive goals if they use the contraceptive methods correctly, consistently, and effectively; certainly, contraceptive use is the result of contraceptive acceptance, method choice, continuation, switching, and failure. They believe that careful scrutiny of the causes of the discontinuation of contraceptive use can benefit the quality of service delivery in various ways. In this context Khan (2001) found that half of the users of oral contraceptives discontinued use due to side-effects, along with being a first time user of the pill, a lack of husband's support, fewer visits by fieldworkers, the duration of use, and being Muslim. Muslim women were found to discontinue the oral pill more often than their non-Muslim counterparts due to less mobility as a result of observing the *purdah* (veil). They are often secluded from close contact with the service providers. It was also evidenced that a husband's poor support is one of the reasons for discontinuing contraceptive use, which aligns with other studies as well. It is also found that clients who have continued contact with the service providers continue to use the pill. Moreover, one third (33%) of the clients were visited by the fieldworkers, which impacted contraceptive discontinuation. First-time users of the oral pill reported side effects in the first few months of its use. However, after some time, their bodies adjusted to the hormones in the pill. Thus, regular visits from fieldworkers, or close contact with the care providers by the clients were important for continuation of the use of oral pills.

Singh et al., (2010) reveals that one of the key concerns for the FP programme in Bangladesh is the rate of switching to less effective methods. Their study shows that a large proportion of women switch to less effective methods and some completely abandon contraceptive use, especially pill users (Hossain et al., 2005; Vaughan et al., 2008; and Kamal et al., 2007). Steele and Diamond (1999) pointed out that method switching is determined by the particular method, difficulties related to previous methods, and

education of women. The rate of switching to no method is of utter importance because it can represent the state of the highest level of unintended pregnancy (Singh et al., 2010).

The BDHS 2007-2014 reports show that more than 50% of users of all reversible methods experience discontinuation within a year, and 66% discontinue within two years. Ali and Cleland (2010) say that users are prone to discontinuation of the reversible methods because of a complex set of physiological and psychological reasons. Condom, pill, and injectable users are likely to experience early discontinuation as these methods require no provider involvement. Condom use and the withdrawal method require the mutual support and self-control of the male partner, but this may seem to be problematic at the beginning of a relationship (Bajos et al., 2003). Singh et al., (2010) suggest that methods well-suited for the women's sexual and social lifestyle can reduce some of this contraceptive discontinuation.

Side effects are the major causes of discontinuation for modern methods, such as the pill, injectables, and IUD use. Kamal et al., (2007) observed that Bangladesh women using these methods in their 40s report side-effect symptoms such as weight gain, nausea, and irregular bleeding after using the methods for several years at a stretch. Singh et al., (2010) comment that the intention and the ability of users to switch to any alternative method at any time is a very important element, but one which is often a neglected portion of effective fertility regulation. Singh et al., (2010) find an association with contraceptive discontinuation, reasons for discontinuation, switching behaviour, and abandonment of contraceptive use with demographic factors, such as contraceptive intent, parity, and age. Demographic factors play a more contributory role than socioeconomic factors (e.g., residence, education, religion). Educated women are more likely to discontinue use than less educated women as they switch to more effective modern methods which may suit them better. Ali and Cleland (2010) found that discontinuation and switching is higher among those women who have already reached their desired family size (two children) than those who have not yet done so.

3.7.3.3 Differentials in current use of FP

Urban/rural place of residence demonstrates differences in contraceptive use. More urban women (66%) use contraceptives than the rural women (61%). Regarding method use, pills and injectables are very popular with rural women, while urban couples depend more on condoms. Among the divisions of contraceptive use rate, Chattogram (58 %) and Sylhet (53%) have the lowest rates while Rangpur (71%) and Rajshahi (70%) have the highest rates (NIPORT et al., 2023). Education for women does not influence contraceptive use as much as it influences the variations in method choice. Pills are mostly used by women of all education levels (between 20 and 32%). Sterilizations and traditional methods are popular with women with no education. For women with secondary and/or higher education, 19% prefer condoms as their contraceptive method (NIPORT et al., 2020). Like education, wealth has less influence

on contraceptive use levels between women, rather it influences differences in method choice between the lowest and highest wealth quintiles. For example, 6% of women measured in lower wealth quintiles prefer injectables, compared to 18 percent of those in the highest wealth quintiles. Similarly, 16 % in the highest wealth quintiles use condoms, while condoms are favoured by just 1 % in the lowest wealth quintiles. Moreover, use of long acting and permanent methods gradually declines as the economic status of women increases (NIPORT et al., 2020).

3.8 Summary

This chapter highlighted the functions from the inception, the status, and the dynamics of FP as an individual organization co-existing with its sister organization of Health under the Ministry of Health and finally attempted to contextualise the current FP issues inside the programme. The academic discussion initiated in light of the research questions so far, guides my methodology. Thus, the following Methodology Chapter provides glimpses of all this academic groundwork to shape my methodological approach against the backdrop of the research questions.

Chapter 4 Methodology

4.1 Introduction

This chapter details the methodological approaches I have initiated to conduct my research. I have emphasised preplanning the study to have an understanding to follow, rather than allowing it to simply evolve. I begin with the title, the general question, and the research question, along with aims and objectives of the research. Then, I initiate positionality and reflexivity issues which, along with other embedded issues, guided me to shape my methodological approach. I try to discuss a worldview and look for a theory to fit the study. Defining the mixed method approach with a rationale for using it to collect and analyse the quantitative and qualitative data follows and forms the mixed method design. Later, I discuss the integration, the validity challenges, and the ethical issues. Finally, I wrap up the chapter with inferences taken from the integration and revisit the questions, aims, and objectives to fine-tune the mixed method design.

The overall objective of this chapter is to present and also to justify my methodological approaches , key decisions made in the planning. The methodological issues have been framed according to ascending order of importance so that they are coherent and consistent to produce the development of thoughts with clarity.

4.2 Positionality and reflexivity

The researcher is one of the major instruments in gathering, generating, and analysing data (Leibing & McLean, 2007). Thus, the researcher's motivation regarding conducting the research is important as the researcher's background and experiences impact the motivation (Jacobson & Mustafa, 2019). There is nothing wrong in observing the complex research phenomenon in a particular way. However, using the lens of positionality and reflexivity explicitly explore the impact of it in our work (Day, 2012).The way a researcher perceives the world depends on the social setting she/he is from, this impacts the research she/he approaches, interacts, and interprets (Smith, 2005). Evaluating our position, particularly in the comparison of the respondents, helps us to better understand the power relation ingrained in our research and also provides an opportunity to be reflexive in our approach to address the issues (Day, 2012). Moreover, it impacts the readers of our research to better understand the approach we have initiated (Finlay, 2002). My affiliation with the FP department in Bangladesh, my revised online field tour from the UK to Bangladesh based on the uncompromising situation of the Covid19 pandemic and my online interactions with the respondents, shaped my positionality and reflexivity and impacted various facets of my research journey.

I am a Family Planning practitioner in the Family Planning Department of the Bangladesh Government and have been since 2003. As a member of the Civil Service, I have held various positions at both field and headquarter levels in the last two decades. During my posting in the field, I learnt how district and below-district level managers interacted with various FP issues. I was able to experience the policy formulation and implementation strategy of the department from headquarter level. My work there also gave me the access to observe the impact of the policy issues implemented at field level to reduce fertility, increase CAR, and address the other salient issues of FP. Thus, my experiences have infused in me a sense of my positionality and reflexivity while undertaking this research initiative. Reflection on self, process, and representation are translated in reflexivity, and critically examining the power relations and politics in research help the data collection and their interpretation (Jones et al., 1997).

Conducting the research based on data from my 'home' country, even though it was online and therefore not physical, brings the dynamics of the insider-outsider and the politics of representation to the research. Fortunately, it did not 'other' me from the insiders as I was able to overcome the spatial differences with many commonalities I have with the respondents, such as nationality, gender, ethnicity, attire, ability to engage myself in the conversation with the local dialect, and capability to adapt to the social, cultural, and political settings of the respondents (Farzana, 2007). Jacobson and Mustafa (2019) also highlighted the importance of knowing the different facets of social identities at specific times and in specific places. For example, I had to maximise my sense of reflexivity with my diction during conversations with the male community, religious leaders, and female secondary school teachers; especially regarding apparently sensitive issues, such as contraceptive choices, preferences, and side effects of FP contraception/methods in light of Islam; the social setting of Islam has relatively more religious orientation. Jacobson and Mustafa (2019) consider these facets are not linear and it is important to point out when, where, and which facets of our social identities dominate others as they contribute to our positionality and impact our research (Jacobson & Mustafa, 2019).

The prime reason behind sponsoring my project by the Prime Minister's Office (PMO) is to contribute more to my workplace with enhanced research knowledge and findings so that Bangladesh can meet its Sustainable Development Goals (SDG) in the context of FP issues more specifically. As I have been sponsored by the PMO of Bangladesh, the highest administrative authority, so it has offered me the privilege of gaining wider attention from the stakeholders, imbuing me with a sense of trust and responsibility. Moreover, the power hierarchy here played a role in the active online-engagement with the respondents with the least possible interruptions (Farzana, 2007).

My positionality as a FP practitioner had more positive than minor effects for conducting the online field tour. As I had substantial working experience all over the country, this helped me to cater to the stakeholder selection from various professionals consulting within the field level of FP practitioners. Endorsement and sponsorship of my project by the PMO provided participants with greater trust and the confidence to speak authentically about the policy issues as they believed the research could potentially improve FP service provisions. Moreover, my experience helped me to design the interview tool, a semi-structured questionnaire, based on the aims and objectives of my project. However, there is no denying the fact that my portfolio as a FP practitioner may, at times, have shaped my thoughts and views in a rather stereotyped way, narrowing the opportunity for me to see the issues through the lens of the people in the community, especially while talking to FP practitioners. It has always been argued that reflexivity with one's positionality may create self-indulgence and over-contemplation. However, being both a researcher and a member of the FP department, and being situated within the power hierarchy, influenced me during the research processes of method, interpretation, and knowledge production (Kobayashi,2003).

Mostly, I have been guided by the social norms embedded in the social setting to formulate my research plan. My positionality and reflexivity guided me to explore some of the rigid social facets, such as gender and sexuality, as well as some ever-changing ones, like class and knowledge, which shaped my lens to see how we interact and interpret the world (Jacobson & Mustafa, 2019). I have been explicitly cautious in figuring out these social identities and intentions, reflecting upon them helped me to mitigate the imbued power relations from both sides. It shaped my knowledge and understanding to construct a reflexive setting (Blix, 2015) and to present an overall theoretical approach for my research to follow.

4.2.1 Gendered positionality

The impact of gendered positionality in negotiating the fieldwork with the participants of genders other than the researcher has focused how gender has been addressed, either centrally or marginally, depending on the situation (Al-Makhamreh & Lewando-Hundt,2008; Takeda,2012;Enguix,2014). The role played by gender in specific situation and context in the fieldwork shapes the dynamics of how gender relates with other socio-cultural categories and factors related to the research (Galam,2015).It has been evidenced by McKeganey and Bloor (1991) that cross-gender nature of their study affected the physical spaces they had access to.Contrastingly Pingol (2001) who interviewed the husbands of migrant women stated that she didn't have any serious problem being a woman interviewing the males. However, she also shared that the wives of the migrant men were comfortable with her in sharing the intimate relationships with their husbands as the researcher was also a woman and a wife. Though my field tour was online and I had ten married women (8 from FP practitioners and 2 from Girl School Teachers) among the respondents, prior to my online interview, I was concerned how my male positionality would affect in conducting the interview with married females. This resulted me to be over-cautious in shaping the questions asked to the school teachers and female FP practitioners. It has been experienced my

gender affected in asking questions to the female school teachers whether favouring or disfavouring the distribution of government contraceptives to the adolescent unmarried women. As I was not feeling fully comfortable asking the questions from my male perspective, they also showed a limited boundary in responding the questions. It is to be noted that as a male researcher I had to signpost the respondents by informing them the sensitivity of the question earlier. They were ensured that the aim of asking the question was to fathom out their views regarding the issue which will potentially help in policy framing. There is no denying that my gender affected not that much with the female FP practitioners as they were professionally trained to undergo such experience. Few of them were less vocal regarding the issues, however, that doesn't evidence that they were feeling discomfort in addressing the sensitive issue. I minimised using the jargons so that they could understand the issue. I created such a congenial situation to raise the issues which was also facilitated by the streamlining at the bottom of my questionnaire. More importantly, my physical absence (online interviewing) mitigated the potential risk of being hesitant and uncomfortable with the sensitivity of the reproductive health issues. However, still it can be admitted that being a male researcher I and the female respondents were not fully out of the sensitivity of discussing the women's reproductive choices regarding the contraceptives and their side effect.

As acknowledged, my positionality in various dimensions has formidably impacted me to deeply consider the overall research approach, especially my worldviews and a theory I initiated, and which is described in the following section.

4.3 Overall Research Approach

4.3.1 Worldviews

There are many research approaches in the world of research which are unique and distinctive from one another in terms of inquiry, philosophy, and theoretical foundation. Thus, the research approaches and design are initiated by the researcher as the way the researcher thinks is grounded in their knowledge and understanding of the world. In other words, adjudging how the ontological and epistemological positions shape their methodological choices (Denzin & Lincoln, 2011). Popularly known as 'worldviews', Creswell (2022) terms the phenomenon synonymously with paradigms, frameworks, or philosophical assumptions, which are brought to the project by the researcher as their values and beliefs from previous affiliations or understandings of the issue. Kuhn (1962) also deemed worldviews as the origins of the researchers' beliefs which derive from past training and various previous community affiliations. As my study has used both qualitative and quantitative tools, it is essential to understand the underlying philosophy of using both methods to reach a good research outcome. The very nature of the research questions demands the different types of research methodology be applied to answer them (Teddlie & Tashakkori, 2009). As my research has used both numeric (quantitative) and narrative (qualitative) data, they represent the shape of my philosophical assumptions with their view of reality (ontology) and how that reality is known (epistemology) through personal values and biases (axiology), and the voice used in the report (narrative) (Creswell, 2022). As this research employs my beliefs and assumptions, it is premised on the pragmatism approach for its ontological and epistemological positions (Creswell, 2022). This approach is also ascribed by various researchers initiating mixed method research approach for its pragmatist position (Teddlie & Tashakkori, 2009).

My study focuses on the exploration of the gaps in the FP service in Bangladesh. The mixed method approaches I employ are mainly based on the qualitative framework of design, underpinned by quantitative survey data, using a pragmatic research approach.

I deem pragmatism to be favourable for my research approach as it questions the constantly negotiable, debatable, and changeable nature of reality. It also examines knowledge using whatever tools are best suited to answer the research questions (Pretorious, 2022, August 10). It provides singular and multiple realities, practicality to address my research questions, and multiple stances via inclusion of biased and unbiased perspectives which combine the qualitative and quantitative data (Creswell & Clark, 2011). Apart from being flexible with the employment of both formal and informal styles of writing, pragmatism may lead to a qualitative perspective accommodating quantitative elements in the overall qualitative design of the research (Creswell & Poth, 2018). This approach borrows from other approaches based on the contextual stance. Although this approach is meant for a hierarchical top-down approach to initiate functional analyses, yet it caters for flexibility to switch to a bottom-up approach based on the necessity of such change (Voirin, 2018).

My perception of these worldviews has moved me, in the next phase, to roll out a theory which can best fit my methodological approach.

4.3.2 Choosing a Theory

A theoretical framework in mixed method research represents the stance the researcher takes to show the directions derived from the many phases of a mixed method project (Creswell & Clark, 2011). Theories, conceptual frameworks, or theoretical rationales also work at the abstract level, as do world views. However, unlike worldviews, the theoretical framework emerges from the literature and from other researchers (Creswell, 2022). Researchers could use feminist theories, social economic theories, racial or ethnic theories, leadership theories, among others, which essentially show what the researchers hope to learn from a study (Creswell, 2022). According to Crotty (1998), the theoretical framework operates at a narrower perspective than the worldviews.

A close scrutiny and deep contemplation of my research topic from the inception of my aims and objectives, my research questions accompanied by my personal reflexivity, my professional affiliation, my understanding of the worldviews, and diving deep into various theoretical approaches available helped to shape my theoretical approaches. I thought over how theory is organised. Corbin and Strauss (2015) provide a detailed discussion about how actions and interactions can form events which are often unpredictable and impose meaning to those events within the backdrop of varied personal responses. They also suggest that although contextual factors do not always determine actions and interactions, they explain why events occur.

They move forward by saying that the adaptive changes which occur between actions and interactions must be linked back to conditions and the meanings given to events to form a theory. Cohen et al., (2018) suggest that theory may arise from the observed associations of events which are the outcome of data.

Reflection and creativity also have a role to play in theory generation. A literature review of previous research can also help shape a theory. Bacharach (1989) echoes Cohen et al., (2018) and suggests that theory can be formed from creating and connecting ideas and concepts which can be streamlined as an explanatory framework. I contemplated more on the theory building processes based on philosophies, experiences, professional backgrounds, and interests (Corbin & Strauss, 2015), rather than being guided by one formal theory. There is no denying that I have been somewhat informed by the secondary data. However, my research plan was not completely guided by preconceived ideas. Both qualitative and quantitative data shaped my philosophical assumptions applied to my research plan. Qualitative data sampling, coding, categorising, constantly comparing, and memoing the data, therefore, helped shape my theory which is mostly grounded in my data. Hence I find the implications of Grounded Theory

mostly as Corbin and Strauss (2015) define, i.e., it is a methodology which uses the data collected and analysed systematically to seek a theory while maintaining an inductive process. Theory emerges from the data, rather than already existing (Glaser,1998). Moghaddam (2006) states that data and categories make up a set of relationships in grounded theory, which propose a plausible and reasonable explanation for the events in a study. The aim of grounded theory is not to test an existing theory, rather it tends to build and generate theory within the data. It facilitates the researcher to generate theory by using the tools through data analysis, putting forward additional explanations through constant comparisons, and linking concepts in the development of a theory (Moghaddem, 2006; Birks & Mills, 2015). Creswell and Poth (2018) deem that the theory never restricts the researcher in the process-making, rather it offers choices to make categories of interpretations, relates questions to the data, and ties in with the personal reflections and values of the researcher.

Most of the unique features of grounded theory relate to my planned research in two ways. Firstly, I did not initiate a research process prior to beginning the research. Secondly, as the data collection and data analyses are closely interrelated, an ongoing process is maintained from beginning to end (Corbin & Strauss, 2015). In my data collection and analysis processes, I initiated selection of some variables from my quantitative data which best fit the outcomes to my research questions, and then, based on them I fixed the bases of qualitative data to chase the research goals. Grounded theory offers me a way to explain and take actions so that I can alter, contain, and change situations. It also offers new explanations for old issues as well as new emerging issues with new investigations (Corbin & Strauss, 2015). Grounded theory also provides flexibility to examine topics and related behaviours from various perspectives with comprehensive explanations.

As a researcher, this flexibility provided me the space to shape the progress of the qualitative data collection process. Denzin and Lincoln (2011) also highlight the importance of research freedom and flexibility so that I am not influenced as a researcher towards a pre-determined approach and can discover an analytical procedure which is not fixed prior to the research being conducted.

To sum up,it can be reiterated that I had been mostly guided by the grounded theory in the qualitative approach as data from the respondents shaped my theoretical approach.However,selected variables from BDHS data sets facilitated to build the platform to move forward.Hence,I enjoyed the flexibility of using some secondary data at the beginning but the final outcome of my project was from the opinions and views from the respondents.Grounded theory in that perspective guided my project to have the outcome finally.

My contemplation of grounded theory, fuelled by my worldviews, led me to choose the mixed method approach to reach a desired outcome for my research.

I acknowledge the quantitative data somehow provides me with some preconceived ideas, but most of the issues which emerge from my qualitative data were not conceived by any predetermined ideas. Rather, they emerged from my qualitative data analysis and have shaped the methodological skeleton of my grounded theory approach.

The following section justifies the selection of a mixed method approach.

4.4 Mixed Method Research (MMR) with Rationale

The project has employed a mixed method approach with the combination of quantitative and qualitative methods. Both primary and secondary data have been used, collected from the online semi-structured interviews with respondents in Bangladesh and different survey reports/articles/journals. Data collected from the online field tour were used for qualitative purposes. The quantitative part of my research has been conducted through the analysis of the large-scale Demographic and Health Survey (DHS) database, specifically the Bangladesh DHS files, available from 1993-94 to the most recently released survey in 2022. A total of nine surveys (1993-94 to 2022) have provided an enormous amount of quantitative data to supplement the qualitative data related to my research.

Among the two popular methodological approaches, my research places relatively more emphasis on the qualitative approach as outcomes of most of my research questions are expected to be demonstrated by the views, opinions, expressions, and individual thinking processes, themselves perhaps influenced by the socio-cultural outlook, of the respondents. Alternatively, the numerical survey data will help to supplement the narrative findings, although they may not all match with the narratives. The selection of a mixed method approach, a relatively a recent approach popular since the 1990s, will help integrate the findings for making meta-inferences based on each set of findings (Tashakkori et al., 2020).

As I have tried to blend the elements of both qualitative and quantitative research approaches by presenting the qualitative and quantitative viewpoints, data collection, analysis, and inference techniques, the approach can be considered to be mixed method (Johnson et al., 2007). Bergman (2018) points out some of the reasons for the tendency to combine the approaches. Mixed methods designs are feasible for successfully developing new ways of thinking about and studying a known phenomenon in a new context (Bergman, 2018). Moreover, the ultimate goal of a research project is to answer the research questions, both the qualitative and quantitative methods have something to offer in this regard (Padgett, 2012). Tashakkori et al., (2020) described three broad areas where mixed method research is superior to the single-method approach. Firstly, the integration of the approaches can address exploratory, explanatory, and confirmatory questions simultaneously. Secondly, the approach can produce better inferences from a study, and thirdly, it provides flexibility by providing divergent perspectives of the research issue. As a mixed method not only deals with data collection, but it also blends both the qualitative and quantitative data into a single study by providing a wider understanding

of the research topic in question than a single qualitative or quantitative approach can provide (Creswell et al., 2011). It can encompass wider ways of viewing the world, ontologies, epistemologies, axiologies, and methodologies (Cohen et al., 2018). Moreover, mixed method acts as the bridging point of an apparently antagonistic divide between qualitative and quantitative researchers. The bridging role can narrow the divide and usher in opportunities for collaboration (Creswell & Clark, 2011). Yin (2006) suggests that the stronger the mix of methods in all stages, the greater the likelihood of a good research outcome.

The mixed method approach helps provide deep insights, explanations of the processes, and multiple views of the phenomenon which have opened wider windows of credibility and usefulness among the results. It also affords the researcher the opportunity to confront any unexpected results (Creswell et al., 2011). Mixed method research is found to be practical as the researcher is able to employ all the methods possible to address a research question. It is also considered the preferred mode of approach to understand the world. Individuals may use both numbers and words to solve a problem, they may use both inductive and deductive thought processes and employ skills to make their judgement of people and record their behaviour (Creswell & Clark, 2011). Creswell (2022) highlights one of the strengths of the mixed method approach to be that the two phases build on each other, they are distinct from one another, and they are easily recognisable during the period of conducting the research. Another important trait of this method is that it is often popular with graduate students and early researchers as it has the two clear divisions, and its easy sequencing is well-fitted to a graduate project (Creswell, 2022).

Finally, as my research questions infused the traits of both the approaches, any single method could have potentially failed to have the desired outcome of my project. Adopting the mixed method approach rationally helped me to have the outcome of my project.

4.4.1 Explanatory Sequential Mixed Method Design

My study investigates the gaps in FP services provision, aiming to suggest policy recommendations to minimise them. An explanatory sequential mixed methods design has been employed, it has involved collecting quantitative data first, then it explains the quantitative results with the in-depth qualitative data. At the beginning of the quantitative phase of the study, data were collected from the interpretation of the BDHS ranging from BDHS 1993-94 to BDHS 2022, along with other surveys such as the Bangladesh Maternal Mortality Survey (BMMS) and those from UN institutions, such as UNFPA, UNICEF, WHO, UNDP, etc, and from government documents and gazettes. From the survey data, the most important variables related to my research questions were selected and their potential outcome tested with grounded theory. The second phase of the study begins as a follow-up to the quantitative results with the qualitative data collected from the diverse interview respondents (28 persons from four

categories of professionals from three different settings in Bangladesh). The robust amount of narrative data collected is systematically analysed via coding and categorizing to supplement the quantitative data. Finally I explain to what extent, and in what ways, the qualitative results explain and add insight to the quantitative results. Based on this, I sum up what is learned overall in response to the purpose of the study (Creswell & Clark, 2011).

The project has been greatly benefitted by probably the most straightforward MM design as explanatory MM design lends itself to emergent approaches where the second phase of qualitative approach is informed from the primary learning from the quantitative findings (Creswell & Clark, 2011).

4.4.2 Emergent Design

Although initially guided by secondary data sources, still I deem my initial research plan to not be wholly prescribed. Hence, I believe the above-mentioned flexibility in my research meets the paradigm of emergent design. Creswell & Creswell (2018) consider this type of qualitative design to be emergent as initially it cannot be tightly pre-planned and it needs to be changed during some, or even all, phases of the research process. Creswell and Clark (2011), however, viewed the two categories of mixed method approaches as fixed and emergent and found them not clearly dichotomous. To my understanding of the approach, I consider my mixed method approach somehow in the middle of both fixed and emergent aspects. I planned initially for a mixed method approach, starting with the quantitative phase, and followed by the qualitative phase. The traits of the qualitative design have emerged from my initial quantitative interpretations of the results. Therefore, this research design has combined both fixed and emergent design (Creswell & Clark, 2011).

4.4.3 Challenges of a Mixed Method Approach

There is no denying that mixed methods present some challenges. A mixed method requires skill in qualitative research, quantitative research, and mixed method research. Due to the extensive data collection procedures, it requires notable amounts of time to collect data and enough resources to fund such extensive data collection and the data analysis process. Most importantly, the challenge is to convince others of the importance of mixed methods research as it is relatively new and requires openness to multiple perspectives to understand the research phenomenon (Creswell & Clark, 2011). Creswell (2022) finds it challenging to choose a qualitative sample and ask the right qualitative questions to provide a clear follow-up to the quantitative results. Another challenge of the method is the ability to determine which quantitative results require further explanation. The researcher has to follow-up on the participants with certain demographics, expand the investigation to explain the important variables, or those variables seemingly become nonsignificant, and also to look closely at the outliers found in the quantitative results (Creswell, 2022).

To sum up, despite having limitations, a mixed method approach is still feasible for my research design, thus I use an explanatory sequential mixed method approach. Based on the quantitative data I have initiated the design of the qualitative phase. Finally, the integration of each method will help me to achieve a good outcome to my research.

The following sections highlight my field tour decision and other allied issues. The Covid-19 pandemic played a vital role in making my online field tour decision, which is detailed in the following section.

4.5 The impact of Covid-19 in field tour

The global pandemic of Covid-19 left an unprecedented and unpredictable impact on my research project, as it did on many others. I started my project in April 2019 with an initial plan to conduct field visits for qualitative analysis from June 2020 onward. Based on my research topic, I opted for a mixed method approach for my methodology where more emphasis would be given to a robust field visit schedule of at least six months to my home country of Bangladesh. The initial plan for a field visit included face to face Focus Group Discussions (FGD) with participants, varying among five to six categories of stakeholders (i.e., adolescent/married mothers, husbands, mothers-/fathers-in-law of married women, FP practitioners of various hierarchies, religious leaders, local government representatives, and secondary school teachers), about their opinions and views on FP issues. Travel sanctions due to the high level of Covid-19 infections in both the UK and Bangladesh emerged as a major potential barrier to materialize the field tour in Bangladesh. My School's ethical committee was also concemed about conducting the FGDs while maintaining social distancing and ensuring the safety of both the participants and the researcher. My supervisory panel suggested to have an alternative plan for the online field tour/interview, changing the modality of my initial plan in case the physical fieldwork could not materialise. The Covid-19 situation began to deteriorate alarmingly at the end of 2020 and into first half of 2021, the School was closely observing the situation and blocking almost all overseas field tours. My online interview plan as my alternative modality to the physical field tour became vital and was granted by the School's Ethical Committee against the backdrop of travel sanctions and the potential threat to my physical safety and wellbeing. The whole process of monitoring the Covid-19 situation and being granted ethical permission consumed more than one year (from June 2020 to June 2021), which was crucial in the context of my permitted project duration.

Opinions of the young/adolescent married women and their in-laws (husband, mother-in-law and others) about the use of contraceptives and how the decisions are influenced by the in-laws living in various geographical settings were some of the major focuses of my research. Covid-19 compelled me to cut down the important primary sources of qualitative data as online FGDs were not feasible with these less privileged stakeholders living in rural settings and poor digital connectivity in the context of Bangladesh. Moreover, maintaining social distancing to reduce the risk of infection was a huge barrier to conducting

online FGDs with the necessary presence of six to eight participants in each gathering. Thus, I was compelled to individually interview my secondary level of stakeholders online (i.e., FP practitioners, local government representatives, religious leaders, and secondary school teachers), curtailing face-to-face interviews with the primary stakeholders (young adolescent women and their in-laws). I justify this decision in Section 4.7, Recruitment Strategy.

My initial plans for a physical field tour with FGDs and individual interviews with the young/adolescent mothers could have enriched my project with their opinions about contraceptive choice and selection; reasons for discontinuation; the influences of husbands, in-laws, and peers; side effects of contraceptives; and embedded sociocultural and religious reasons. Moreover, as a current FP practitioner, my positionality could have added additional flexibility for conducting the FGDs or interviews with the participants as I am well acquainted with the sociocultural norms of the various urban and rural settings.

During the Covid-19 pandemic the mental health of the general population was found to be aggravated with increasing trends in the occurrence of anxiety, depression, and a sense of loneliness (Torales et al., 2020). The pandemic imposed additional pressures on PhD researchers who were already demonstrating high risks of developing mental health issues due to the extra pressure and working atmosphere in the research arena. Covid-19 impacted me both externally (personal life, etc) and internally (motivation, self-worth, self-efficacy, etc) (Sverdlik et al.,2018), halving my productivity during that phase.

4.5.1 Online Field Tour Permission by Ethical Committee

My initial physical field tour was robust, both in length and in respect of the number of respondents. However, my plan could not materialize due to the aggravating situation of Covid-19 both in the UK and Bangladesh during the potential timeframe of June 2020 to June 2021. Based on the deteriorating situation of Covid-19, I was advised by my supervisory panel to present my alternative/revised plan for an online field tour, this was considered positively by the SAGES Research Ethics Committee on 3rd June, 2021. I was formally informed of this positive outcome on 21 June, 2021 allowing online one-to-one interviewing with four major categories of respondents (FP practitioners, community leaders, religious leaders, and teachers), and secondary data analysis approval (see Appendix: H) for the mixed method approach I envisaged accordingly.

4.6 Selection of online Research Locations

I have selected two districts Narsingdi (Monohordi) and Chattogram (Satkania) as the two major online research locations with field respondents and with FP Head Office (HO) officials in Dhaka, Bangladesh (see Figure 2, below).

The BDHS represents the data not below the administrative divisions in the country. 'Division' is the highest administrative region in the country and comprises districts. 'Districts' comprise *Upazilla* (sub-districts). Among the current eight administrative Divisions of Bangladesh (see Figure 3, below) Khulna and Rajshahi divisions have already reached the national benchmark for various FP determinants. Chattogram and Sylhet are the two regions which lag behind when compared to the national standard and when considering most of the factors involved (i.e., fertility, contraceptive use, unmet need, etc). Dhaka hovers at a moderate position with some pockets of less facilitated areas along with some well performing areas (NIPORT et al.,2023).

I planned to compare the demographic determinants between two regions—a high or well performing one and a low or poor performing one. Chattogram is a low performing division and Dhaka is a moderately well performing division (NIPORT et al., 2022). As the BDHS does not produce district level demographic information, I had to look to other sources for the demographic progress in the districts of the two divisions. Chattogram district (from Chattogram division) and Narsingdi district (from Dhaka division) are found to be low and high performing districts, respectively. Monohordi, a sub-district of Narsingdi, and Satkania, a sub-district of Chattogram, are selected randomly. Selection of the Narsingdi district from Dhaka division and the Chattogram district from Chattogram division as the two study settings enabled me to demonstrate the geographical differences in FP services uptake, providing the rationale which facilitates my data collection initiative.

Thus, Narsingdi and Chattogram are my two major study settings (in addition to FP HO in Dhaka) (see Figure 2, below) with 22 participants among all the categories (i.e., FP practitioners, local leaders, teachers, and religious leaders), while Dhaka, as the HO of the FP Department, caters for the interviews with six participants at policy level. Although the two divisions of Dhaka and Chattogram were purposively selected based on good and poor performances, respectively, the two districts of Narsingdi and Chattogram which represent the two divisions were selected randomly.Narsingdi was adjacent district to Dhaka division with moderately performing and Chattogram is the central district of Chattogram far away from Dhaka with poor performance in FP activities.Monohordi,Narsingdi is positively associated with accessibility and other socio cultural factors while Satkania,Chattogram has less accessibility with socio cultural impediments regarding FP. Likewise Monohordi, a subdistrict of Narsingdi, and Satkania, a sub-district of Chattogram, were also selected randomly.

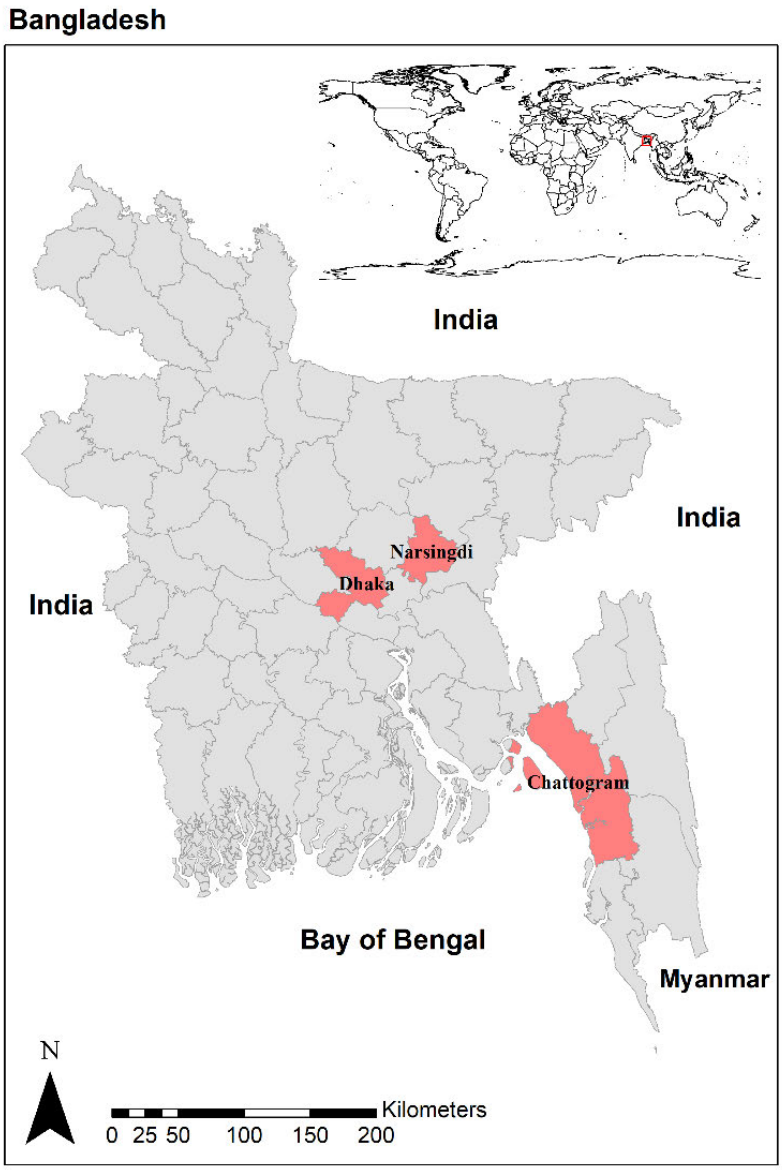

Figure 2: Online Research Locations

Source: https://data.humdata.org/dataset/administrative-boundaries-of-bangladesh-as-of-2015

Demographic information for Narsingdi and Chattogram Districts, the two major study settings, and Dhaka as the HO of the FP Department, is outlined in Table 5, below.

Table 5: Demographic Information

	District	Narsingdi	Chattogram
1	Area*	1114 sq kms	5265 sq kms
2	Population*	2.6232 million	6.9 million

3	Eligible Couples***	397678	1.0716 million (DGFP MIS
4	Total Fertility Rate (TFR)**	2.2	2.6
5	Contraceptive Prevalence Rate (CPR)**	63	57.5
6	Unmet Need**	10	15.6
7	Child Marriage	18(U16), 41 (U 18)	20 (U16), 45 (U18)

*Bangladesh Bureau of Statistics (BBS) 2022**Bangladesh Demographic and Health Survey (BDHS) 2022 ***DGFPMIS.GOV.BD

*** Divisional information as BDHS does not include district level demographic information

Interview respondents have been selected from the study settings of the two districts in such a way that I can ascertain the difference in views of the respondents based on the two geographical settings, especially for the community and religious leaders and the teachers.

4.7 Recruitment strategy

4.7.1 Who are the Respondents?

My recruitment of the respondents for the online field tour covered a diverse range of four categories: FP practitioners (both from the field and at policy level at HO), local government elected representatives, religious leaders (specifically *Imam*), and school teachers (specifically those teaching at girls' schools/madrassah). Among the participants, 16 field level practitioners are from both study locations, six are FP HO level policy makers, two are community leaders, two are religious leaders, and two are secondary school teachers. Among 28 respondents, 10 are females, and 18 are males.

Thus, I had three study settings: Narsingdi, Chattogram, and Dhaka (as the HO of FP)

Table 6: Online Interview Respondents in Categories

Tool	Respondents	Number of Settings	Respondents /Interview	Total Respondents
Online Interviews	FP field personnel: family welfare assistant; family welfare visitor (FWV); family planning inspector (FPI); Sub-Assistant Community Medical Officer (SACMO)	2 (Narsingdi-1, Chattogram-1,)	4	8
Online Interviews	FP policy personnel (field level); deputy director	2 (Narsingdi-1, Chattogram-1)	4	8

	assistant director; Upazilla FP officer, medical officer			
Online Interviews	FP policy personnel (HO level); director; deputy director	Dhaka	4+2	6
Online Interviews	Community leader; religious leader, teachers	2 (Narsingdi-1, Chattogram-1,)	3	6
	Total four major categories	Total three settings	Total	28

Table 7: Description of the respondents for the qualitative semi-structured interview

Sl	Pseudonym	Designation	Organization	Description of the respondent
1	A	Family Welfare Assistant (FWA)	Family Planning, Narsingdi	Female, 38 years, Community worker in FP
2	B	Family Welfare Visitor (FWV)	Family Planning, Narsingdi	Female, 45 years, serves at infrastructure level and also in a satellite clinic, skilled in inserting temporary methods
3	C	Family Planning Inspector (FPI)	Family Planning, Narsingdi	Male, 34 years, works at community level, supervises FWA.
4	D	Sub-Asst. Community Medical Officer (SACMO)	Family Planning, Narsingdi	Female, 39 years, serves at community level clinics with general treatment and FP counselling.
5	E	Medical Officer (MO)	Family Planning, Narsingdi	Female, 45 years, medical doctor skilled in special surgical training of FP methods and also Maternal and Child Health.

6	F	Upazilla Family Planning Officer (UFPO)	Family Planning, Narsingdi	Male, 39 years, administrative head of FP, coordinates all the programmes with higher and other local level offices.
7	G	Assistant Director	Family Planning Narsingdi	Male, 58 years, medical doctor with the supervisory authority of clinical contraception.
8	H	Deputy Director	Family Planning	Male, 58 years, district level manager, coordinates the performances of all the *Upazilas (*sub-districts).
9	I	Family Welfare Assistant (FWA)	Family Planning, Chattogram	Female, 35 years, Community worker in FP
10	J	Family Welfare Visitor (FWV)	Family Planning, Chattogram	Female, 50 years, serves in infrastructures and also in a satellite clinic, skilled in inserting temporary FP methods
11	K	Family Planning Inspector (FPI)	Family Planning, Chattogram	Male, 44 years, works at community level, supervises FWA.
12	L	Sub-Assist. Community Medical Officer (SACMO)	Family Planning, Chattogram	Male, 59 years, serves at community level clinics with general treatment and FP counselling.
13	M	Medical Officer (MO)	Family Planning, Chattogram	Female, 33 years, medical doctor skilled in special surgical training of FP methods and also Maternal and Child Health.
14	N	Upazilla Family Planning	Family Planning, Chattogram	Male, 38 years old, administrative head of FP, coordinates all the programmes with higher and other local level offices.

		Officer (UFPO)		
15	O	Assistant Director	Family Planning, Chattogram	Male 58 years,facilitates the contraceptives clearance and monitor the contraceptives supply from the port at Chattogram
16	P	Deputy Director	Family Planning	Male, 58 years, district level manager coordinates the performances of all the *Upazillas* (sub-districts).
17	Q	Deputy Director	Family Planning, Head Office, Dhaka	Male 50 years, programme manager for financial issues, helps Director discharging duties.
18	R	Deputy Director	Family Planning, Dhaka	Male, 51 years, programme manager for MIS issues, helps Director discharging duties.
19	S	Director	Family Planning Dhaka	Male, 58years, coordinates the audit functions of the department.
20	T	Director	Family Planning,	Female, 56 years, a medical doctor, coordinates the clinical contraceptive activities of the department.
21	U	Director	Family Planning	Male, 57 years, coordinates the MIS related functions of the department.
22	V	Director	Family Planning	Male, 56 years, coordinates the Information, Education & Motivation related functions of the department.
23	W	Chairman	Narsingdi	Male, 58 years, coordinates the development activities of Government.
24	X	Imam	Narsingdi	Male, 53 years, Imam in a local mosque, also acts as Marriage Registrar.
25	Y	Teacher	Girl's School, Narsingdi	Female, 48 years, assistant teacher in a secondary school.
26	Z	Chairman	Chattogram	Male, 65 years, coordinates the development activities of Government.
27	AB	Imam	Chattogram	Male, 53 years, Imam in a local mosque, also acts as Marriage Registrar.
28	BA	Teacher	Girl's School, Chattogram	Female, 40 years, Assistant teacher in a secondary girl's school.

4.7.2 Sampling Techniques

Regarding the sampling method, I initiated purposive sampling as this provided me the flexibility of sampling the participants strategically so that they can provide me with the right kind of information and the kind of lived experiences my research questions require. They are considered to be expert in certain fields with a good amount of variety, differing from each other in terms of the key characteristics that are relevant to my research questions (Clark et al., 2021). I had the research questions and research goals in my mind when I selected the major categories of participants (i.e., FP practitioners and various community leaders), allowing me to identify similarities and differences across the sample. Regarding the technique of purposive sampling, I applied snowballing as the small group of my peers (FP practitioners) I initially chose recommended other participants (community leaders) they knew who had the required experiences related to my research (Clark et al., 2021; Cohen et al., 2017). Moreover, this technique helped to reach my hard-to-reach participants, community leaders especially, as my research topic is sensitive and private (Waters, 2015). I have also selected the variables from the BDHS data sources purposively in my quantitative sampling, focusing on my research questions primarily.

FP is a labour-intensive public agency with an organizational setup which is spread across the country. As a FP practitioner for almost two decades, I have served both in field level offices and in HO in Dhaka. I had senior and junior peers working in all the three study settings. My peers suggested to select the field level Community leaders from two subdistricts within two districts. My professional affiliation with FP and my sponsorship endorsement from the highest administrative office of the country also contributed heavily to the recruitment process in terms of gaining the required number of stakeholders, both from the field and FP HO, using the snowball technique.

It is also to be noted that I tried to put aside my FP practitioner entity by suspending my previous portfolio related reading, training during the snowballing process to make an obstacle with my affiliation with FP internally. I mentally prepared myself to focus on the phenomenon and on the naturally occurring data for my research from them rather personalising them as my peers. My two years staying at the UK in the meantime helped me a bit as well to shift my FP practitioner identity to FP researcher one diving more into my research objectives. During the interview process I made a common disclaimer to my respondents (peers) that my identity as a researcher would triumph over my FP affiliation to fathom out the best output from the respondents for better understanding of the research topic. There is also no denying with the fact that except the respondents from the HO of FP at Dhaka, the field level respondents from two other study settings were not in any way personally acquainted with me. This also helped me to keep away biasness though we were all under the same umbrella of FP . It was really not so easy to execute my intention as there had always been conflicts of interest.

4.7.3 Why are they chosen?

Covid-19 played a vital role in selecting online one-to-one interview respondents, shifting from my original plan to use FGDs which would have had a physical presence. My earlier planned FGDs with potential stakeholders representing married and adolescent mothers and mothers-in-law could not occur due to travel sanctions from both the UK and Bangladesh. The idea of online FGDs had to be cancelled as it could not materialize due to Covid-19 restrictions, meaning 8+ stakeholders could not gather in a real time situation. Moreover, a huge time difference between the respondents' and the researcher's physical positions meant a coordination by the researcher at the study settings which was impossible, and most importantly, a lack of technological facilities further hampered possibilities.

Alternatively, I had to rely on FP practitioners, locally elected representatives, religious leaders, and schoolteachers, i.e., the important stakeholders next to the adolescent mothers, married women, and in-laws. FP practitioners, with their active professional engagement, are capable of putting forward their views and opinions about the existing problems encountered by both the service seekers and the service providers. As service providers, they can sometimes proxy as the voices of the service seekers and, in fact, they do so often when planning a campaign or awareness programme. The selected community leaders are part and parcel of FP community level programmes with both administrative and programmatic portfolios. Locally elected chairmen of *Union Parishad* (the lowest administrative tier of public representation) act as the chair of various FP Committees. Religious leaders (*Imams*) are the next most important stakeholders after the community leader chairman, based on the socio-cultural setting regarding FP issues. Secondary school teachers teach the adolescents, especially girls, who soon become mothers due to the prevalence of adolescent marriages. As my project aims to explore the gaps in FP services and consequently expects to initiate some policy recommendations, the importance of recording the voices of these professionals in the community, along with practitioners, will help my project reach the desired outcome. In the context of the unprecedented Covid-19 pandemic and my research goal to focus on some policy recommendations, the selection of the four diverse communities for one-to-one online interviews can be justified as the best possible solution.

All FP practitioners, even the field level workers, are officially digitized with laptops/computers with an internet facility. Since the community respondents represented either public or private organizations, they were also connected online, made possible as changes have taken place regarding digitization in Bangladesh in the last decade. Moreover, with their portfolios, the stakeholders were expected to have been facilitated, at the very least, with smart phone connections via MS Teams, Skype, and/or WhatsApp, enabling me to conduct the interviews based on their flexibility.

4.8 Data Collection Tools

As I have designed a mixed method approach, I have used a range of methods to collect both the qualitative and quantitative data. Semi-structured open-ended online interview (described in detail below) was the major tool used for collecting the primary data. The secondary data source was mainly the DHS, used for quantitative data, along with other international organisations' documents (e.g., WHO, UNFPA, UNICEF, etc). I also analysed government and non-government official documents from diverse sources to understand the background history of policies and implementation of the FP programme. Various data sources allowed me to analyse the data from multiple viewpoints. A close scrutiny of my research questions demonstrates that they aim to uncover the aspects of *how*, along with embedded *what* and *why*. Interview responses allowed me to address the aspects of the qualitative phase, supplemented by secondary data sources from the quantitative analysis which allowed me to build on the foundations of the qualitative aspects.

4.8.1 Interview Questionnaire as a Tool for Qualitative Analysis

I employed a semi-structured open-ended questionnaire as a tool as it has the flexibility to explore the attitudes, values, feelings, behaviours, experiences, and behavioural intentions of the respondents towards the research topic under exploration. As they are not close-ended, they produce fuller and more complex data with deeper information and explanations which are beneficial for the outcome of my project (Tashakkori et al., 2021). The flexibility of being able to ask follow-up questions also helped to gain fuller impressions.

Rabionet (2009) suggests that the semi-structured interview provides the opportunity to narrow down some of the areas and topics the researcher wants to ask the respondents about. It also offers the researcher ways to ask the respondents to report other views along with the specific ones they are directly asked about, unlike the unstructured interview. Cohen and Crabtree (2006) remark that semi-structured questionnaires are prepared in advance as this allows the interviewer to prepare and feel competent during the interview. The respondents are at liberty to express their views in their own terms. Semi-structured interviews provide reliable, comparable, qualitative data. They are also unique in the respect that, among interview methods, semi-structured interviews allow a degree of relevancy while remaining responsive to the participants (Bartholomew, Henderson & Marcia, 2000). Semi-structured questions drew some unusual responses from the respondents which helped me to get their accurate opinions and views. Moreover, the open-ended questionnaire explored some new areas of which I had little knowledge as to whether they would be linked to my research (Clark et al.,2021). Later, I found them significantly embedded with my research.

Maintaining the questionnaire structure for both categories of respondents, I developed two questionnaires (see Appendices A and B) for all three community leaders separately, with additional questions to link and explore their professional engagements regarding the FP programme. For example,

local government elected leaders are assigned as the Chair for various committees formed by the Government. Therefore, the additional questions aimed to explore their views about the functionalities of the committees to expedite the FP programme on their part. Due to the sociocultural setting, Islamic religious leaders (*Imams*) play a pivotal role in shaping the mindset of the common people regarding FP methods, and other embedded issues linked to FP, by their preaching to the community and acting as Marriage Registrars. The questions developed for the *Imams* highlighted the queries regarding the acceptance of FP methods in the light of Islam and their role in reducing adolescent marriage and encouraging the acceptance of FP in the community.

Secondary school teachers (both female and male) teach the adolescents and have a far-reaching impact on them. The questions allocated in the final phase for the teachers highlighted issues of motivating the adolescents, especially the adolescent girls, to understand the detrimental effect of adolescent marriages, building awareness of the physical and mental changes which occur during puberty, and other allied issues. Although the interview tool accommodated around 18-20 questions for all the categories, flexibility was maintained to allow follow-up questions to fully gain the respondents' views. In this way, the nature of the semi-structured questionnaire guided me to appreciate the flexibility of asking follow-up questions and also to maintain a chronologically ascending order of issues, simultaneously. One major difference might be visualised implicitly about using jargon/acronyms in the questionnaire; however, this was explicitly avoided in my interview time with the community respondents, unlike with the practitioners who are familiar with the terms used. I judiciously ensured that I avoided direct questions which could lead a respondent to become more cautious or guarded and give less-than-honest answers (Tuckman,1972).

Apart from the advantages, I experienced some concerns in using the semi-structured open-ended questionnaire. It consumed a great amount of time as most of the interviews lasted an hour or more. Apart from pre-coding being time consuming, coding may introduce the possibility of variability in the coding of answers, leading to lack of validity (Clark et al., 2021). I experienced these issues as well.

4.8.2 Questionnaire Language (Bangla)

Language played a vital role in designing my qualitative questionnaire. Much of my research outcome relies on the in-depth interviews formulated to collect the viewpoint of the respondents as they assign the phenomenology with meaning to the experiences (Seidman, 1998). The questionnaire was planned and formulated in English from the beginning. Since Bangla is the first language in Bangladesh and English is not widely understood by the participants, Bangla was used as the medium of conversation when conducting the interviews. Therefore, I played the role of both interviewer and translator. Chen and Boore (2009) argue that when conducting bilingual research, the translator should be fluent in both the source and the target language. They added, involving various cultures and languages can lead to

epistemological difficulties in identifying similarities and differences which are compounded in language.

The questionnaire, consent form, participant information sheet, and other necessary information were translated into Bangla and sent to the respondents who were asked to ensure they read these documents, and signed where necessary, before taking part in the interview. I was a bit cautious about transcribing the questionnaire into Bangla, keeping the issues as they were in English so that meaning might not be lost in translation. Moreover, I ensured the most common and comprehensible meanings of the FP jargon so that respondents might not struggle to understand my questions. Translating the questionnaire in a figurative sense, rather than a literal one, was ensured in order to reach the respondents who were community leaders. The questionnaire equally emphasised the maintenance of the simplicity of Bangla. The Participant Information Sheet catered for information about the aims, objectives, and potential outcomes of my project, which are important elements for the respondents to understand. As my participants were professionals within various organisations, concerns about their ability to read Bangla was not an issue (Tashakkori et al., 2021).

Phrasing and organising the questionnaire was very important. As I had basically two major types of respondents (FP practitioners and various community leaders), I designed the questionnaire in such a way that it could represent each group. Basically, I accommodated all the major themes and issues of my research in four major sections in the questionnaire, apart from the respondents' personal information, so that they could potentially reflect on the desired outcomes of the research questions I set at the beginning. The major structure of my interview tool followed these issues:

A. Home visit, quality of services and health facilities.

B. Unmet need, discontinuation and geographical variances of FP methods;

C. Women's autonomy and contraceptive use;

D. Child marriage and adolescent pregnancy.

I designed the questionnaire by placing the issues in such a way that the development of thoughts are coherent, prioritised, and linked. This approach aims to keep the respondents mentally ready for the next possible issues to answer, which could maximise their contribution, without becoming bored and distracted. Additionally, it would engage them actively. So, I maximised the simplicity and I translated the interview questionnaire into Bangla. I conducted a briefing in Bangla before starting the online interview. The participant information sheet and participant consent form were sent to participants before the actual online interview.

4.8.4 Secondary Data for Quantitative Analysis

The BDHS has been used as the primary and major source of secondary data collection. Apart from this large-scale database as the main source, other national and international survey data were consulted, including: the BMMS, the Bangladesh Health Facility Survey (BHFS); the United Nations Fund for Population Activities (UNFPA); WHO; and UNICEF.

Secondary data are defined as the data collected by others for different research reasons (Glaser,1963). Using secondary data in my quantitative research is considered to be beneficial to me in many ways. Primarily, secondary data is considered to provide potential insights and foci for research (Heaton, 2008) which can yield new interpretations. Moreover, I have been offered numerous benefits from the BDHS database as it tends to be of high quality, providing opportunities for re-analysis and allowing for additional interpretation while saving additional time and skipping the ethical approval protocol (Clark et al., 2021).

4.9 Addressing Research Questions briefly by Data Sources

Table 8, below, lists the data sources as they relate to the research questions.

Table 8: RQs briefly by data sources

RQ	Details	Data	Notes
1	How do the regional differences in unmet need occur and how can they be minimized?	Quantitative Qualitative	The BDHS provides regional variation of unmet need at different times. However, the interviews detail how and why unmet need differs in various regions and what policy interventions can reduce it.
2	To what extent do the limitations of community based female FP workers' house visits and poor functioning of facilities contribute to unmet need for FP?	Mostly Qualitative, Some Quantitative	The BDHS provides the statistical data on the community worker's field visit info in brief. However, the interview respondents clarified, in various dimensions, the reasons for the decreasing number of field visits, how significant this is and how the problem can be minimized.
3	How are decisions around needs, preferences, and reproduction made and negotiated within and beyond the family?	Qualitative, Quantitative	The BDHS data provides the CAR, preferences for specific methods, and decision related information, in brief. However, the qualitative data collected from the wide range of participants show the diverse views and opinions regarding contraceptive use, how the

			decisions are made inside and outside the family, and finally, how autonomy influences contraceptive decision-making.
4	How is adolescent/early pregnancy a significant factor in FP services linking to maternal and child mortality?	Mostly Qualitative, Some Quantitative	Child mortality, adolescent marriage and pregnancy related information are available from the BDHS. However, the qualitative data are filled with numerous views and opinions regarding adolescent marriage, adolescent pregnancy, and child mortality data which also warrants policy issues reducing adolescent pregnancy.
5	How can increasing the quality of care narrow the gap between demand for and offer of FP?	Qualitative	Qualitative data collected from interviews highlights various means with a view to increasing quality of care.

4.10 Online Interviewing Methods

My interview respondents were my peers (FP personnel), community and religious leaders, and teachers from the three settings—Narsingdi , Chattogram, and Dhaka. All FP practitioners are officially digitized with laptops/computers with internet facility. Since the community respondents represent either public or private organizations, they could also be connected online as positive change took place regarding digitization in Bangladesh in last decade.

Online interviews can be conducted by mobile phone or by laptop using an audio-visual interface such as Skype (Janghorban et al., 2014), Zoom, or text chat (Barrat & Maddox, 2016). Interviewing by email, known as asynchronous interviewing, is also possible, although it lacks the live interplay of audio-visual systems and the interviewer is dependent on the participant actually taking the time to write out responses which, for some, is too laborious (Bampton, Cowton, & Downs, 2013; Burns, 2010).

I mostly used mobile smart phones with WhatsApp with the community level respondents. Cohen et al., (2018) highlight the advantages of both the audio only and audio-visual interviews as less time consuming and more flexible. In contrast with a face-to-face interview, online interviews seemed to be less influenced by the age, ethnicity, appearance, or, importantly, gender of the participants. As I complied with the participants' flexible timing, I had a sense of non-invasion, or not breaching their

privacy (Clark et al., 2021). This facilitated the respondents to share sensitive issues about FP as the increase in disclosures diminished the awkward and embarrassing situations of asking sensitive questions face-to-face (Kee & Browning, 2013). As many people carry smart phones, the participants can be contacted regardless of their location, so they are more flexible than when using a device like a computer (Raento et al., 2009). This method seemed to me quicker and cheaper than face-to-face interviews. It helped minimize the power differentials with my peers (James, 2016). Phone interviewing had also been employed to few which I found protecting the privacy, anonymity and confidentiality of the respondents and with improved quality of responses (Browning,2013) . I also interviewed some respondents via Skype and MS Teams.

Apart from the advantages, I experienced some barriers conducting the online interview. I experienced a few participants who struggled with concentration due to the background noises, such as crying children and others being in movement by the interviewee. A few interviewees struggled with the lack of visual, non-verbal, and contextual cues and data (Lechuga,2012; Clark et al., 2021). I struggled to explore the sense of frustration through the body language of the respondents due to the online nature of the interview. I had to remain carefully focused as we tried to define the attitudes, nature, and personality of others (Lechuga, 2012; Clark et al., 2021). Unlike face-to-face interviews, rapport building was challenging, so for some participants their responses were less spontaneous than for others. Finally, poor and/or loss of online connections sometimes disrupted the flow of the interview (Clark et al., 2021).

4.11 Conducting online Interview

I have closely reviewed the procedures for interviewing. I detailed the purpose and nature of the interview to participants, clearly explained how responses would be recorded, and asked if they had any observations to make about the process. I ensured them that any values and biases raised in the interview would not be revealed to any other party. As an interviewer I ensured I was not judgmental; I tried to guide the respondent if they began to deviate from the point without being impolite or harsh to the respondents (Tuckman, 1972).

Kvale (1996) reminds the researcher that data collection is a social, interpersonal encounter, not merely a process of data collection. She adds that there is no written script for the procedures, but the interviewer will have to take pains when preparing the setting to ensure the interview is conducted successfully. Kvale (ibid.) also suggests that the researcher is also a research instrument. So, I am not only knowledgeable but also an expert in successful interactions. I needed to create an appropriate atmosphere so that the participants feel safe to talk freely, a requirement in the several steps of interviewing. Moreover, the ethical issues of the interview were clarified at the beginning, i.e., informed consent, guarantee of confidentiality, beneficence, and non-maleficence.

Each of the 28 interviews took a minimum of 45 minutes and a maximum of 1 hour 15 minutes, this time allowed for the interview questionnaires to be answered with follow-up questions, and for any fluency and network connectivity issues for the respondents and the interviewer. Most of the interviews were conducted using WhatsApp's audio format, with a few using Teams or Skype. Some respondents from among my field level peers chose to use a video mode as they felt this would help them to better understand the questions and body language for both the interviewer and interviewee, making the conversation more engaging. However, videos were not recorded, and no screenshots were taken. The time difference between the UK and the field settings in Bangladesh presented minor difficulties in order to reach a common consensus. Moreover, it was a continuous and rigorous time-consuming process communicating with them to ensure their availability. In fact, it was a relatively easier process to get the field level FP practitioners to agree with the interview schedules based on their flexibility. However, field level non-FP practitioners and HO level FP officials took more time to agree to times, beyond my expectation, as the community professionals were busy with their engagements. Dhaka based HO level FP officials were keen to be a part of the interview process, but their portfolio-related engagements deferred to their fixed schedules again and again. It was, indeed, expected, and not unusual, rather it was welcoming for me to have experienced such occurrences based on my positionality in the FP HO within the backdrop of the sociocultural setting. The semi-structured interview questionnaire was flexibly used to interview the respondents using supplementary questions aligned with the research topic. I was cautious when conducting interviews with community leaders as there might be sensitive issues with which they would feel discomfort, especially the religious leaders. For example, all three community leaders were aligned with the same negative voice about providing government contraceptives to adolescent girls. My previous extensive field level orientation eased the process of handling the sensitive issues of contraceptive use, adolescent pregnancy, and other embedded issues of FP. Practitioners, especially the HO ones, were comfortable sharing their views and opinions.

4.12 Transcribing

My interviews were conducted in Bangla. I transcribed them into English from the audiotape manually, i.e., without any kind of software. As a voice recognition tool, the available software is still far from accurate as we human beings think deeply and this cannot be translated accurately by machine (Clark et al., 2021). This particular issue in research is widely discussed when data has been collected by questionnaires for exploring views, attitudes, and opinions in languages other than English. I gave clear instructions in Bangla, the data collection medium, and the translation is done in English from Bangla (Taber, 2018). Choi et al., (2018) argue that translation between two different languages is not the direct translation of the words, rather it aims, importantly, to get the maximum layers of meaning across. Larson (1998) suggests that during the translation process, a translator considers the individual situation

and the cultural context that is understandable on several different levels. As a researcher, and being from Bangladesh, this has helped to reduce potential threats to the validity of the data.

Cohen et al., (2007) deems that transcribing is a crucial phase of interviewing as there lies a potential threat of data loss and distortion. Transcribing often becomes solely a record of data, not a record of social encounters, e.g., audiotape can seldom record the important contextual factors, such as visual and non-verbal elements of the interview (Mishler, 1986). Indeed, Morrison (1993) suggests that non-verbal expressions sometimes impart more information than verbal communication. Audio recording can be replaced by the video recording, but Morrison remarks that this then becomes even more time-consuming to analyse.

As transcription represents the translation of one rule system (oral and interpersonal) to another rule system (written language), it loses data. Kvale (1996) deems that in a transcription, between the researcher and the original live interview situation sits an opaque screen which gives hazy views because of the potential concern of losing the contextualised meaning of the respondents' answers. Cohen et al., (2007) do not suggest a single correct form of transcription as they deem it to be decontextualized, abstracted from time and space, and an outcome of the dynamics of the socially interactive situation.

The social setting of the interview cannot be necessarily translated by transcript as the words might not be solid to interpret them due to socio0cultural contexts. The reliability of the original setting will be inadequate in a transcription as the interviewer, the interviewee, the time and place do not ensure stable, unambiguous data (Scheurich, 2014). Mishler (1986) echoes the point as the data and the relationship between the meaning and the language are set in a different context, resulting in unstable, changeable, and numerable interpretations.

Cautioning against the pretension of the researcher that they recorded almost all of the interview, Cohen et al., (2007) suggest the researcher should ensure different kinds of data are recorded on the audiotape. As audiotape cannot record everything that takes place in an interview, I took additional notes about how the interview went (e.g., talkativeness or nervousness of the participant), and also about the interview setting (e.g., busy/quiet, background noise, use of digital devices, etc.) (Clark et al., 2021).

The laborious job of transcription was at times boring and tedious as the 28 interviews took more than 35 hours and each one hour of interview time took five to six hours to transcribe, with around 60,000 words in transcripted format altogether. However, transcribing really benefitted me as it allowed me to gain the maximum sense from the respondents' data during analysis, a point claimed by Cohen et al., (2007). During the transcription I tried to ensure I noted down what was being said, the differences in the tone of voice of the speakers, their emphases, pauses, silences, and interruptions, and the differences in mood and the speed of their speech. I was able to grasp if the speaker was speaking continuously or in short phrases. Sometimes I was able to understand and note down other concurring events, such as

disturbing additional noises from a generator, the noises made by their infants, the call to prayer (*adhan*) over loud speakers, among others.

4.13 Analysing the Data

4.13.1 Approach to the Quantitative Analysis

Although the qualitative data built the structure of my research, the quantitative data at the forefront has been used to initiate the qualitative approach, leading to a mixed methodology in the research design. Focusing on the numbers, quantitative data are assumed to be referring to the quantification of aspects of social life (Clark et al., 2021). Questionnaires and surveys, quantitative content analysis, secondary data analysis, and structured observations, are some of the major methods of quantitative data collection methods. I initiated the quantitative approach by reviewing and analysing the BDHS from 1993-94 to 2022 from the DHS dataset. Secondary data collected by others for various purposes (Glaser,1963), can be used to test a hypothesis, to generate new knowledge, and to extend, support, and challenge existing theory (Heaton, 2008). The BDHS data are robust. However, I selected the important variables related to my research questions to shape my qualitative data following the quantitative analysis. Those variables include: fertility preferences and contraceptive use, child marriage and teenage pregnancy, contraceptive sources, field visits and facility delivery, childhood and maternal mortality, women's empowerment, and demographic outcomes. I selected, analysed, reviewed, and attempted to establish relationship among the variables. I was able to register myself by logging on to the DHS website using my university credentials to access the data. DHS data were already in use, therefore I was in an advantageous situation with respect to the ethical issues of privacy, confidentiality, anonymity, and non-traceability (Smith, 2008) as there were data available on the sensitive topics of FP, such as contraceptive use, choices, preferences, side effects, and others.

4.13.2 Approach to the Qualitative Analysis

My primary methodological plan with the quantitative data analysis had been the basic foundation of my qualitative data analysis. Thus, quantitative data selection and analysis paved the way for the qualitative approach.

My qualitative analysis approach has been guided by the grounded theory concept based on my qualitative data. Although I have not been informed by grounded theory at the quantitative analysis stage, and the qualitative analysis approach has been supplemented by the quantitative data, still my qualitative analysis was impacted by grounded theory.

Much emphasis is given to theoretical approaches before initiating qualitative research. Silverman (2020) argues that any analysis will somehow be guided by certain theory-dependant concepts. It has

been suggested that there is no escape from the theory-driven conceptual description. All qualitative analyses begin with a close inspection of the data to discover, explore, and generate the important conceptual description of a phenomenon. This may emerge from, or be grounded in, the data collected about the phenomenon under investigation (Rapley, 2016). Charmaz & Bryant (2011) describe how theoretical sampling helps the development of grounded theory based on situation and concepts. They add, comparing data with data and codes with codes allows the researcher to decide which codes are important to test the tentative theoretical categories.

Charmaz (2006) also provides instruction on when to stop the back-and-forth movement between data and theory, which is known as theoretical saturation. Categories are considered to be saturated when fresh data no longer produces new insights nor reveals new properties for the theoretical categories (Charmaz, 2006). Based on the above conceptual framework I have developed the initial coding and memo writing, then turned my focus to coding and memo writing. I collected new data through theoretical sampling to further develop categories and properties. I continued to code, write memos, and create theoretical samples until no further, new issues emerged. Finally, I sorted and integrated the memos to develop a theory (Rapley, 2016).

Although grounded theory is a popular method for the analysis of qualitative data, it has its limitations. Clark et al., (2016) summarised some of these. Firstly, the properties emerging from the analysis can be problematic. One of commonest practical difficulties in applying grounded theory is to fulfil the requirements of constant comparison and saturation. The time and effort this takes can make it problematic to implement in a limited time frame. Another observation is whether it produces a theory at all. Commonly, it is found that researchers simply organize the data to produce related themes without examining them to reveal their underlying meaning.

Despite these limitations, grounded theory, with its core processes of coding, memo writing, and, importantly, the idea of allowing theoretical concepts to emerge from the data, helped me to analyse my qualitative findings.

4.13.3 Coding Process

The conceptual foundation of grounded theory has been highlighted to supplement my qualitative analysis in the methodological framing of my research. I have detailed the analyses of my interviews with the participants, organising them in sections in Chapter 6 so that they demonstrate the major conceptual issues the participants shared. The number of codes and the major concepts derived from codes and categories have been arranged in such a way as to demonstrate the interview findings coherently, to highlight my research questions specifically, and to project the outcome holistically. As codes and categories have been formulated from the interview data and constitute the concepts which form the skeleton of the discussion, I discuss the process by providing examples from my planning.

Focusing on grounded theory, I initiated the qualitative data analysis phase by following the basic principles of theoretical sampling, coding, and theoretical saturation, while performing constant comparison (Clark et al., 2021). Coding is the key process I employed when reviewing my transcripts and field notes. Charmaz (1983) defines codes as serving as the shorthand device to "label, separate, compile, and organize" (p.186) the data. I used coding only in the qualitative data as it works as a potential indicator of concepts and the concepts are constantly compared to ascertain the best theoretical fit (Clark et al., 2021).

As the data I am looking for are raw, i.e., not in numerical format, and are embedded as views and opinions in stakeholders' voices, I needed to apply some form of coding to extract the data. Before initiating the coding process, I had to familiarize myself with the transcriptions by reading them again and again without making any kind of observations. It took a formidable amount of time but provided me deep understanding of the data, then I started to make some common observations and notes from the readings. For the practicalities of coding, I highlighted sentences or small paragraphs (often chunks of paragraphs) in my transcribed interviews and then gave them labels. The labels ranged from the descriptive to the abstract and conceptual. I discovered that I was generating an index of terms (Clark et al., 2021), which is termed coding. Finally, these labels emerged as the codes for my analysis (Rapley, 2011; Silverman, 2020). It had not been feasible for me to code my data word by word, rather I used chunks of text due to the enormous number of the opinions given in this narrative form. Coding is not my analysis, rather it forms part of my analysis. It is the means by which I can think about the meaning of my qualitative data and is also the way to reduce the vast amounts of data I have gathered (Huberman & Miles, 1994). Analysing the interview transcripts, I found that the respondents were hovering over various themes/topics linked to the interview questionnaire with which they were provided in advance of the interview schedule. The careful selection of words/phrases in the interview questionnaire helped regulate the discussion and signpost the issues for the respondents, which I labelled as codes and then clustered groups of codes into categories. This helped me code the respondents' views amidst a diverse range of issues. Based on the uniqueness of the issues, I ultimately settled on more than 50 codes, this I later revised to exactly 50. I used just a few words to name a code, examples include: 'Declining home visit'; 'Shortage of clinical staff'; 'Freedom of choice'; Religion'; and 'Education', among others, to accommodate the vastness of the issues the respondents shared. A close scrutiny of the codes demonstrated that they represented some common issues which could be clustered into narrower groups based on their likelihood, and hence they were grouped into categories, the number of which settled to 10. From the categories I formed the themes, these are meant to be code more or less, however, I took on the notion of some researchers who deem that themes transcend from codes and, in fact, are built on group of codes (Bryman et al., 2021). Themes have been synonymously used as concepts derived from 'categories' as well. After reflecting on my research questions and corresponding themes, I narrowed

down the categories from ten to four. Finally, the ten categories were converted to exactly four themes/concepts which accommodated all five research questions.

4.13.4 Coding Matrix

After a thought-provoking session I wanted to see how the frequencies of the codes had been voiced by the respondents, this led me to create a 'coding matrix' (see Appendix G). The coding matrix represents all 50 codes on the left side (top to bottom), grouped on the basis of the themes. The respondents were chronologically presented (left to right on the matrix) with 28 numbers, representing 28 respondents. Revisiting the written data and memos again and again helped me to explore the frequency of the occurrence of each code in the opinions of the 28 respondents. This robust matrix consumed much patience and time. However, revisiting the narrative text helped the coding matrix get a new look, accommodating the voices of the respondents with the frequency with which each code appeared. The matrix shows how I jotted down specific codes which occur with greater frequency, in some places with less frequency, and also almost vacant places with no, or low, frequency in some places. Finally, the coding matrix took the shape of a plot graph. The coding matrix I developed served my analysis initiative well, it allowed me to visit the data manually without the help of computer assisted qualitative data analysis software (CAQDAS). The rationale for this was that although my dataset was large it did not seem so large as to require the use of CAQDAS (Clark et al., 2021). The coding matrix displays, at a glance, the real picture of the shared opinions of the respondents. Both the coding and theming processes have been utilised to generate natural units of meaning; and classifying, categorising and ordering the units of meaning, some generalized stages, Cohen et.al.(2007) argued.

Most importantly, the coding matrix I developed helped me to see the frequency of codes voiced by the respondents. After visiting and revisiting the tedious process of listening to the audio tapes of all 28 interviews, the finalized matrix provided me with a summary sheet for displaying the interview data as codes. For example, codes included: 'shortage of clinical staff'; 'poor FP infrastructure'; 'attitudes of the clinical staff'; 'religious barriers'; 'cultural barriers'. The first three among these five codes are quite descriptive and tell quite clearly what they mean. The final two are also clear, but most respondents implied them, talking about the phenomenon but not uttering the actual words 'religious barriers', few respondents used the phrases directly. 'Shortage of clinical staff' was the code uttered most frequently among the 50 codes, along with 'religious barrier', 'cultural barrier', while 'attitude of the clinical staff' is one of least, or moderately uttered, codes. Whatever is the case, I labelled the same phrasing, or key words used to describe the issues, with a unique code. Later, with my research questions in mind, to move forward I clustered some of the codes separately. Based on their homogenous issues, I grouped them into categories, particularly for the above cluster, which I labelled 'Facility Visit' as the coded information is related to home visits. The themes/concepts are derived in this way from categories.

Finally, all ten categories were converted to four major concepts which form the skeleton of the discussion put forward in Chapter 7.

Table 9: List of codes, categories, and themes from Qualitative Interviewing

SL	Themes/Concepts (4)	Categories (10)	Codes (50)
1	Home visit/facility visit, unmet need and regional differences in FP	Home Visit	1. Declining home visits 2. Poor client/worker ratio 3. Lack of inspection 4. Less priority for FP 5. Demotivated staff
2		Facility Visit	1. Shortage of clinical staff 2. Poor FP infrastructure 3. Poor location of facility 4. Attitude of clinical staff 5. Religious barriers 6. Cultural barriers 7. Physical barriers
3		Unmet Need	1. Awareness of methods 2. Negligence of clients 3. Negligence of providers 4. Cultural / religious reasons
4		Regional Differences in Services	1.Unavailability of services 2. Religious norms 3. Cultural norms 4. Hard to reach areas 5. Poor policy plans
5	Adolescent marriage and pregnancy	Adolescent marriage	1. Girls as liability 2. Poverty 3. Social insecurity 4. Awareness (social & legal) 5. Religion 6. Fake birth certificate 7. Education
6		Adolescent Pregnancy	1.Child marriage 2. Lack of contraception knowledge 3. Societal pressure 4. Maternal mortality 5. Child mortality 6. Poor health condition
7	Women's autonomy and choice of contraception	Women's Autonomy	1.Education 2. Freedom of choice 3. Working women 4. Housewives
8		Contracept-ives Choice	1. Lack of contraceptive knowledge 2. Peer effect 3. Influence by husband/in-laws 4. Influence by community workers
9	Quality of FP care and skill increase	Skill Increase	1. Lack of specific training 2. On the job training 3. Low entry qualification 4. Quality service

10		Quality of FP Services	1. Unavailability of staff 2. lack of awareness 3. choices of clients 4. mismanagement of side effects.

In contrast to the numerical data, I scrutinized the qualitative data as often interpretative in their nature having a less accurate representation of interview but more of a reflexive, reactive, interactional setting between the researcher and the decontextualized data (Cohen et al., 2007).

The real challenge in interpreting the data was to maintain the holistic approach of the interview and, at the same time, fragment the data into its constituent elements. Cohen et al., (2007) suggest that the synergy of the whole should be ensured as the whole is always better than the sum of its parts.

4.13.5 Limitations in the Dataset

I used secondary BDHS data for quantitative analysis which are not without challenges in many ways (Dale et al.,2008;Smith,2008;Yorke,2011;Mostafa,2016).As these data are collected for the purposes and interests of answering specific research questions,they might not necessarily fit the present researcher's objectives and may also bias the research. Secondary data from governments, institutions and associations with power and with a particular agenda may not be neutral .Smith (2008,p.79) denotes such social,political,ideological data may be the imperfect representation of the real situation having out of dated and ill-suited to the present situation.Sometimes secondary data may not be suited for comparisons as they may be specified in a fixed socio,cultural and spatial context (Smith,2008).

Although the quantitative BDHS data provided me with advantages to move forward with analysis of the variables related to my research, yet I also experienced some limitations. These limitations were generally embedded within the dataset itself. Firstly, I had to familiarize myself with the ways the variables have been coded and analysed. Secondly, the complexity of the data due to its vastness is a limitation. BDHS is very large dataset (see details in Chapter 5). Thirdly, I struggled to find some variables to answer my research questions (Clark et al., 2021). Among my five research questions I was able to answer RQ 1 fully, RQs 2, 3, 4, partly, but RQ 5 remains unanswered fully from the key variables I found in the BDHS dataset. My methodological approach for reviewing the BDHS datasets from various years by comparing and contrasting could be one of the reasons for this limitation. Although I used Excel as a statistical tool to analyse the data, descriptive in-depth analysis of various variables with quantitative software (like SPSS) could have reduced the limitations by introducing frequency tables, means, variance, correlations, and more (Tashakkori et al., 2021). However, the robust amount of qualitative data collected from respondents' interviews, providing their opinions, attitudes, and views, supplemented any gaps in my quantitative dataset.

Regarding the respondents' opinions and views used as the qualitative data was not less problematic. Apart from the time-consuming nature of the coding, I was concerned about losing the context of what was said by the respondents. Riessman (1993) and Coffey & Atkinson (1996) also expressed concern about the fragmentation of data as chunks of text could result in obscured meaning of the narrative data. Charmaz (2006) expressed concerned about the overwhelming number of codes produced by 'line by line' coding, which is sometimes unmanageable. However, my coding did not produce an unmanageable number of codes as I used chunks of text. As I did the coding manually, it seemed I had some sense of biasness during refining the notes into codes basing on the objectives of my research questions. Again extracting the categories and concepts from my codes was, in most cases, was a natural one. However, the possibilities of biasness with the outcome of four themes basing on my perspectives can not be alienated.

4.14 Inferences

After the data analysis, the question of integration occurs. Integration happens when the quantitative and qualitative data connect. This can happen at any phase of the research process, at data collection stage or at the data analysis stage, or both (Creswell, 2022). Integration of the data can lead to the inference process. The most important part of a research project is to answer the research questions by interpreting the results carefully (Greene, 2007). The inference process occurs when the reader gets a sense of the findings from the research. It can be seen as a dynamic journey from ideas to data to result in the pursuit of making sense of the findings by connecting the steps (Tashakkori et al., 2021). The inference process can start from when the idea of the research arises, although it is generally believed that it can be sensed after the summarisation and analysis of the data.

Tashakkori et al., (2021) highlighted the importance of the synthesis of the etic (relationships among people, events, themes, and variables) and the emic (expressions, perceptions, behaviours, feelings, subjective understanding, and interpretations) constructions of the mixed method approach. Johnson & Christensen (2020) consider emic-etic-legitimation should be the goal of mixed method research.

I produce the inferences from my interpretations based on the mixed method design I employed where both quantitative and qualitative data extracted cater to both objective and subjective constructions of the data. This will make my inferences consistent and coherent in a systematic manner.

4.15 Validity, Trustworthiness and Generalisability

Validity in quantitative research involves the assumptions underpinning the statistical use of a dataset, construct and content validity of the measures, and careful sampling. My research places relatively greater emphasis on the qualitative phase where following the principles of validity is important. Validity has been defined as the scope where interpretations of data are linked with the conclusions by

the theories and evidence used (Ary et al., 2002). Some basic principles have been recommended to assess the validity of the data. The natural setting is the main source of research data where the researcher is a part of the researched world and it is the researcher, rather than the research tool, which becomes the key instrument. Data are descriptive, described in terms of the respondents, rather than of the researcher. Data are socially situated and socially and culturally saturated, seen and reported through the eyes of the respondents (Lincoln & Guba, 1985; Ary et al., 2002; Flick, 2009; Geertz, 1974). Maxwell (1992) suggests 'understanding' is a more suitable term than 'validity' in qualitative research. Shenton (2004) shares similar views, highlighting the background and experience of the researcher and arguing their importance in ensuring the credibility of the qualitative research as the researcher is the main instrument of the data collection.

Again, validity issues associated with the findings are required to be assessed for trustworthiness, described by Lincoln & Guba (1985) as the outcome of truth value analysis and interpretation of the data. My research was initiated by the experience of my lived experience as a FP practitioner. The data collection method relied fully on trust as the respondents spontaneously shared their opinions about the general and sensitive issues of FP. Shenton (2004) suggested 'critique' as another measurement of trustworthiness in qualitative research. My peers, and other researchers from same cluster, provided me with feedback during various interactions, both informally and formally, at our discussions, meetings, presentations, and conferences. Such feedback helped me to fine-tune my methodological approach. Another scale of trust I have gathered from the participants who contributed to my research with their valued opinions. Some participants are in communication with me, in fact they still do, sharing various observations regarding the research. The differences in opinions and their spontaneous engagement in my research also entrusted me with their feedback which boosted the trust in my research.

Generalisability is another important facet with which a researcher can make inferences for a large group of people by only studying a part of it. As I mentioned earlier my thesis had more emphasis on the qualitative approach, I tried to maximise the transferability by focusing on the following steps. Firstly, I defined my population in detail which clarified what generalisation I am going to draw. Secondly, my sample size of 28 participants were FP practitioners and various types of community leaders who were directly associated with contraceptives users and with their in-depth opinions and views reflect the views of the wider users of contraceptives. Finally, I tried to reach a saturation point with the themes and categories I employed which is not so robust, but, big enough to provide sufficient information to account for the aspects of the phenomenon under my research. Apart from the steps, I took some moment to reflect on the generalisability after finishing my project, I concluded my thesis might have the generalisability with the wider population despite the limitations of not contacting the direct users of FP contraceptives.

4.16 Ethical Considerations

Ethical research is the responsibility of the researcher and determines what they should or should not do in their research (Cohen et al., 2018). Brookes et al., (2014) considers ethical rules to be followed should be straightforward and that it is the responsibility of the researcher to make decisions on ethical matters and the actions required for those decisions. Creswell and Poh (2018) reported that violations of ethical values are often broken in four main areas: harm to the participants; lack of informed consent; invasion of privacy; and deception. Creswell and Poth (2018) also highlight the importance of guiding ethical values by respecting the people involved, having concern for their welfare, and ensuring justice.

My mixed method engages both the interview data collected from 28 adult respondents and the reviewed BDHS reports, along with a relatively smaller group of other surveys, government gazettes, and documents. Based on my detailed approach taken to ensure the respondents privacy, anonymity, and informed consent, the School Research Ethics Committee (SREC) granted formal approval for my research with some minor corrections and suggestions. I sent all necessary documents to all respondents and received back their signed consent forms in Bangla before commencing the interviews. In addition to all the written documents (consent form, participant information sheet, questionnaire in Bangla) sent in advance, I had a relatively longer engagement with the respondents when describing their role in the research, their right to withdraw at anytime, and their assured anonymity while conducting, and on reporting, the interview. The respondents were informed they would be given a pseudonym, their data would be used only for this thesis and its publication, not for any other official use, and it would be destroyed five years after the completion of the project. Regarding the secondary data source, I registered with the DHS website with my university credentials which permitted me to use the BDHS database, along with other publications related to my research.

As a FP practitioner, professionally I have been trained to handle sensitive issues which may arise with the respondents. Therefore, I upheld the privacy and liberty of the respondents. Cavan (1977, p. 810) rightly defines ethics as "a matter of principled sensitivity to the rights of others". All my initiatives regarding the ethical issues with the respondents were aligned with this basic principle of the rights of others. As a researcher I felt that the values, voices, and opinions of the respondents are the ingredients of my thesis structure and I acknowledge their contribution with the hope of letting them know about the findings of my research. Moreover, I maintained the highest level of authenticity to ensure no sense of deception entered any phase of the research.

4.17 Summary

This chapter has detailed my methodological grounding. The steps started with the title, research problem and questions, aims and objectives. Discussion on worldviews, and identification of theory shaped the skeleton of my research. Later, I discussed the mixed method approach, justified its use, and discussed the quantitative and qualitative data analysis process in detail. Inferences as an outcome of qualitative/ quantitative integration have also been discussed, along with validity, trustworthiness, and

ethical issues associated with the research. The following chapter discusses the quantitative data analysis process and findings.

Chapter 5 Quantitative Analysis

5.1 Introduction

The overall aim of this chapter is to systematically review and analyse the BDHS data based on the variables I have selected, and which align with my research questions. The overall approach includes describing the data source, preparing, exploring, analysing, and presenting the data, and finally interpreting the results (Creswell & Clark., 2011).

The BDHS from 1993-94 to 2022 (the latter is the 9th of its kind) provides a robust data source with numerous variables relating to my research. I have selected and analysed a formidable number of variables which may have linkages to my research objectives and questions. Descriptive analysis of the key variables (CAR and its trend, fertility, variation of fertility, teenage pregnancy, etc) has enabled me to present the data in a more meaningful way to determine the attitudes and behaviours of the target population in a natural setting. It has provided the knowledge needed to explore the gaps in contraceptive use leading to unmet need for FP and based on the demographic, social, and cultural variances. The analyses of the determinants of the quantitative data supplement the qualitative analysis which follows (see Chapter 6), in this way the findings from both the qualitative and quantitative work can be intertwined to best address the research questions.

In addition to the large-scale demographic and health survey data used as the main source, some other national and international survey data were consulted. These include: BMMS, BHFS, BFS,UNFPA, WHO, and UNICEF. Excel was used for the graphical presentation of the dataset analysis. Software ArcGIS was used for drawing the maps to graphically represent the regional/administrative data.

5.2 Quantitative Analysis Approach

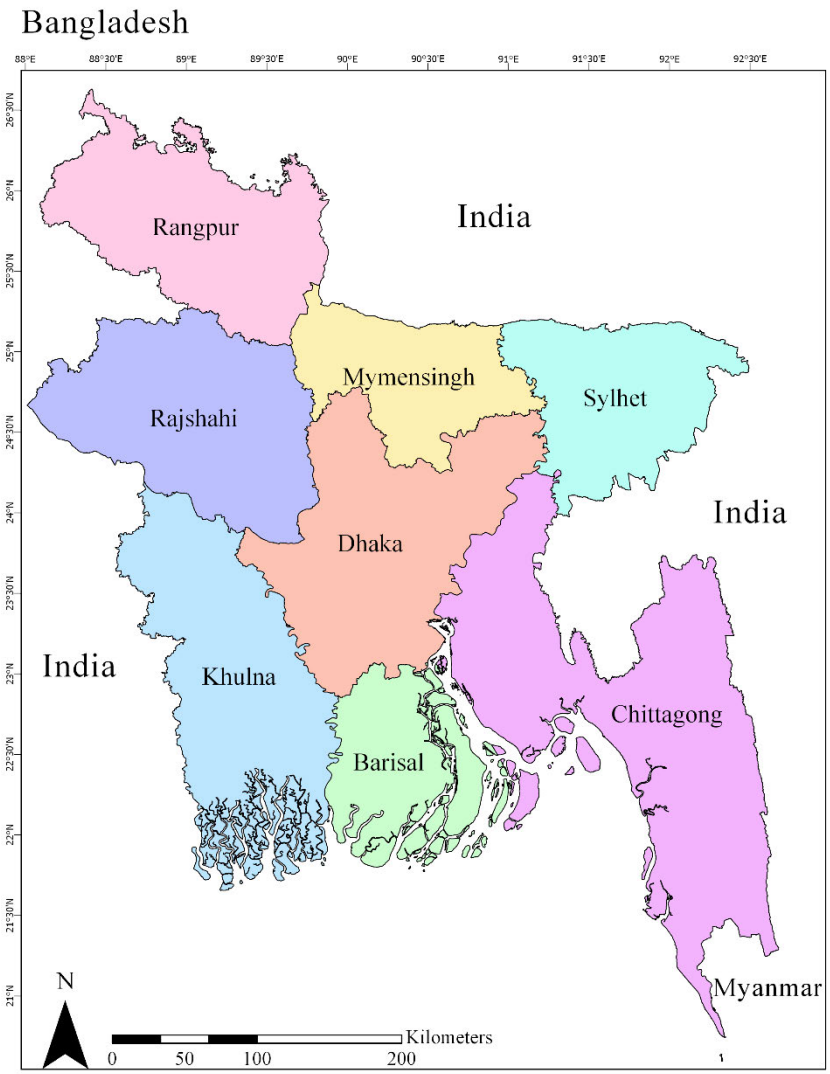

Figure 3: Administrative Divisions of Bangladesh

Source: https://data.humdata.org/dataset/administrative-boundaries-of-bangladesh-as-of-2015

One of the major approaches to the analysis of quantitative data is to apply a descriptive statistical approach, this includes describing the patterns and trends and summarising the output to have good understanding of the dataset (Tashakkori et al., 2021). The quantitative portion of my study hasn't produced any descriptive data analysis rather it has mainly demonstrated the critical analyses of various types of determinants in the BDHS from 1993-94 to 2022, and other sources (as mentioned above), along with a comparative analysis, mainly by applying Excel as the statistical tool and ArcGIS maps. The critical analyses have also foreshadowed the aims and objectives of my research questions so that the outcome of the analysis might reflect the justification of fixing them. This simple approach to analysis may expose a range of other factors that have an impact on my research questions. I have

developed the analysis in six different groups, thereby accommodating the major variables from the BDHS with a view to addressing the research questions as follows.

5.2.1 Fertility Preferences and Contraceptives Use

Fertility (number of children a woman births in her reproductive cycle), is an important demographic determinant which depends on many factors, including the age at a first birth, the interval between births, and so on. These factors have a role to play in reducing fertility which itself provides many positive FP and health outcomes.

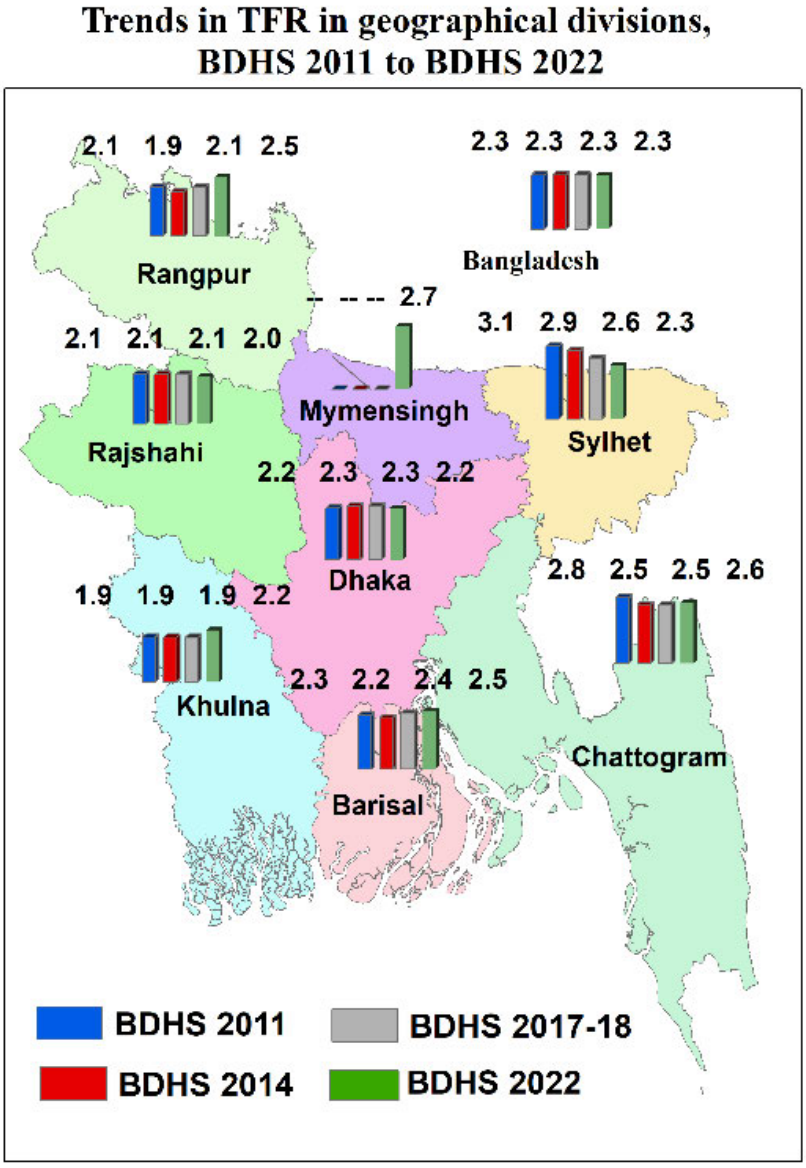

Figure 4: Trends in Total Fertility Rate (TFR) by Geographical Region

Figure 4, above, shows that fertility remains unchanged at 2.3 births/woman in the BDHS of 2022. Trends in total fertility rate by division demonstrate that only Rajshahi has reached the TFR at a replacement level of fertility of 2.1, or below. Mymensingh has the highest TFR (2.7). Barishal (2.5), Chattogram (2.6), and Rangpur (2.5), each having TFRs of 2.5 or above. The largest decline in TFR occurred in Sylhet (from 3.1 to 2.3), while Rangpur showed an unexpected TFR increase (from 2.1 to 2.5). FP policy makers expect to attain fertility at 2.0 births/woman by 2023 under the 4th Health Population Nutrition Sector Programme (NIPORT et al., 2023).

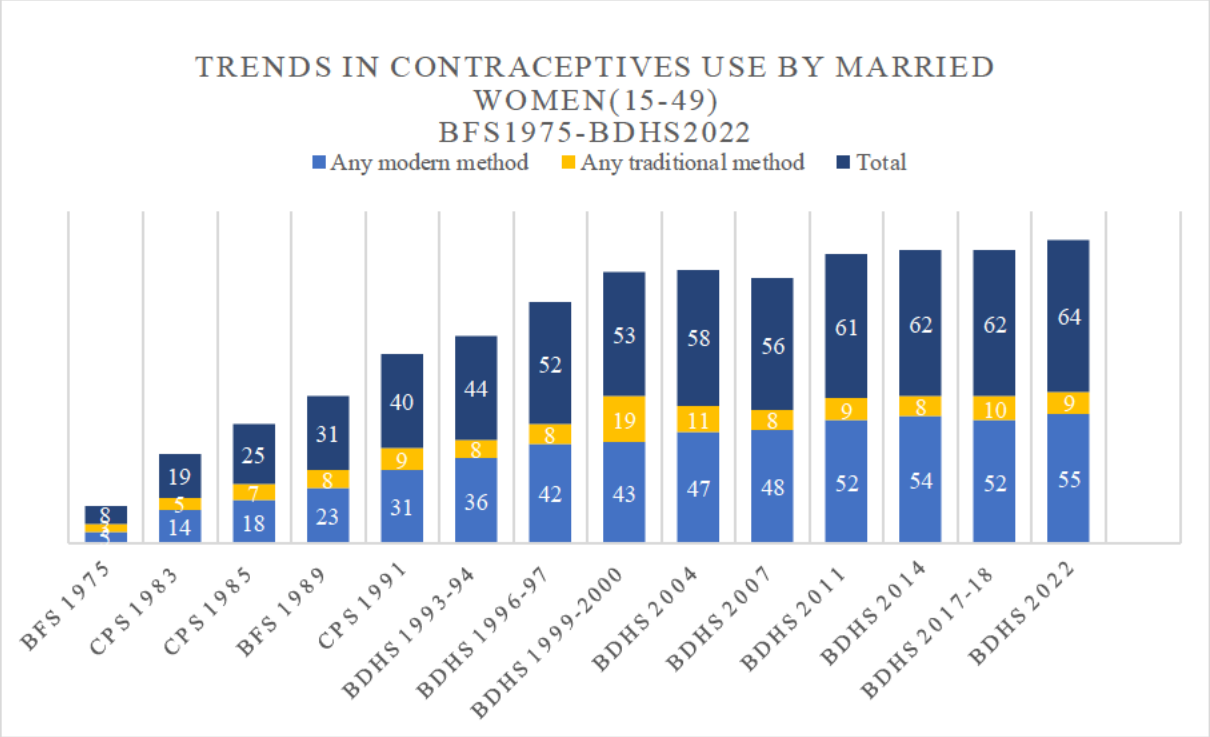

Figure 5: Trends in contraceptive use (Modern and Traditional methods)

Figure 5, above, shows that the BDHS 2022 revealed modern methods are used by 55 % women, a slow increase from 52% in the BDHS in 2017-18, meanwhile traditional methods are used by 9 % of married women, which is a slight decrease compared to 10% at the last survey in 2017/18. As the success rates for traditional methods (e.g., withdrawal, safe period/menstrual cycle, abstinence) are poor, the increase in this trend is not satisfactory from programme's perspective. Moreover, overall contraceptive use is found to be slow to increase, reaching 64%, up from 61 % found in the previous four surveys (BDHS 2011 to BDHS 2022).

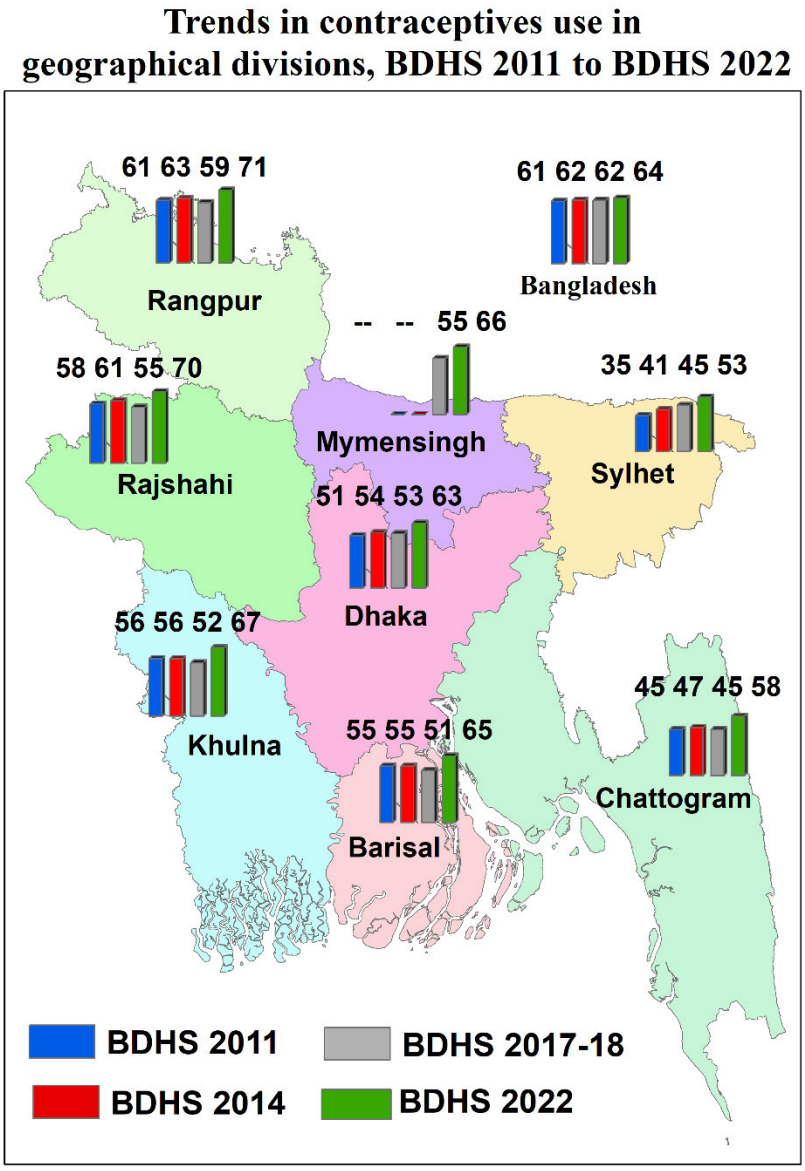

Figure 6: Geographical difference in using contraceptives

Figure 6, above, reveals the geographical differences in the use, or non-use, of contraception methods across the country. Rangpur (71 %), Rajshahi (70 %), Khulna (67 %), Mymensingh (66 %) represent the highest numbers of users of contraceptives, each district above the national average of 64 %, while Sylhet (53%) and Chattogram (58 %) represent the lowest number of users in the BDHS of 2022.

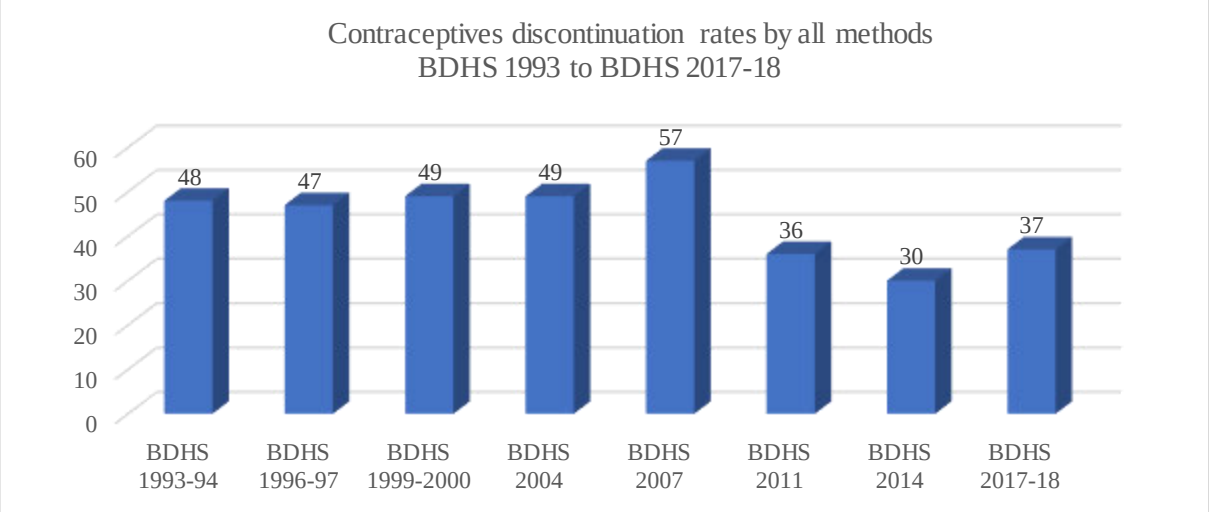

Figure 7: Contraceptive discontinuation rates

Figure 7, above, shows that the BDHS 2017-18 reveals more than one-third of users (37%) of contraceptive methods stop using these methods within 12 months. Discontinuation rates are comparatively higher for the temporary methods, such as condoms (40 %), pills (34 %), and injectables (25 %), than for other long-term methods, such as implants (7 %) (NIPORT et al., 2020).

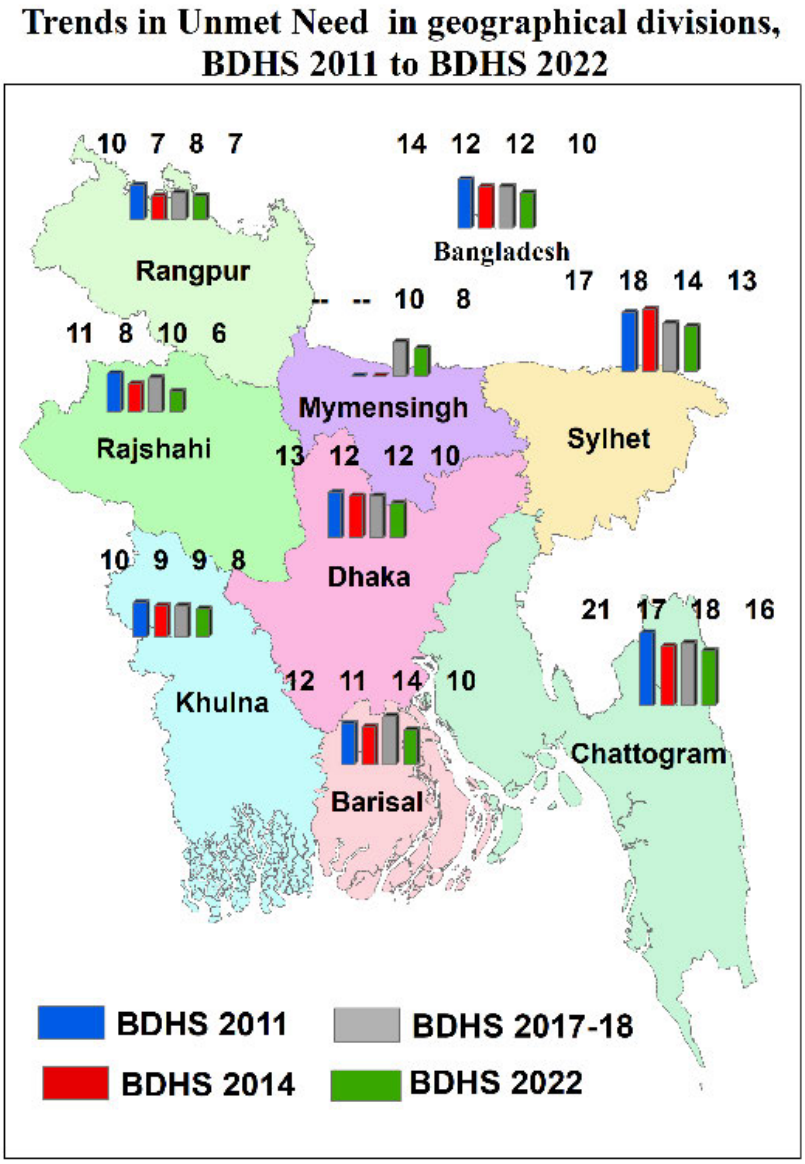

Figure 8: Trends in Unmet Need for Family Planning by Geographical Region

Figure 8, above, shows that Rajshahi (6 %), Rangpur (7 %), Mymensingh (8 %), and Khulna (8%) have the lowest rate of unmet need, while Chattogram (16 %) and Sylhet (13 %) have the highest percentage of unmet need, far ahead of the national average of 10%. Unmet need reduced to 10% after a stagnant situation of 12% in the previous two surveys (BDHS 2014, 2017-18).

Findings: A plateauing situation of fertility (2.3 births/woman), and slight progress in unmet need (10%) and CAR (64%) are common findings from the last four BDHS (2011, 2014, 2017-18, 2022). Regional differences in fertility, contraceptive use, and unmet need have been evidenced in the survey reports. Although some regions have already attained, or are close to attaining, the national benchmark of 2.3—Khulna 2.2, Rajshahi 2.0, Dhaka 2.2, Sylhet 2.3—the other regions still lag behind the ideal level of fertility, which is 2.1—Mymensingh 2.7, Chattogram 2.6, Rangpur/Barishal 2.5) (see Figure 4). This cannot be overlooked because those regions lagging behind make it more difficult to reach the

replacement level of fertility (2.1) nationally. For unmet need, some of the regions (Rangpur 7%, Khulna, 8%, Rajshahi 6%, and Mymensingh 8%) have already well met the national rate of 10% in terms of unmet need, but those regions lagging behind, Chattogram (16%) and Sylhet (13%), continue to challenge the national rate from reaching that 10% target (Fig.8).

Bangladesh experienced a decade-long fertility plateau of around 3.3 from 1991-1999 (El-Saharty, Karar, and May, 2014). Fertility has been reduced to 2.3 but has remained stagnant through the BDHS of 2011 to BDHS 2022, which means that Bangladesh has undergone another plateau. Against the backdrop of geographical variation in fertility by division, scopes of work need to be initiated for further reductions in fertility to be made.

It is expected that high contraceptive use reduces unmet need and acts as a reason for the decreasing trend in fertility. The almost stagnant situation of fertility and the slow increase in contraceptive use are in line with the slow decrease in unmet need. However, the analysis demonstrates the existing regional differences in fertility, contraceptive use, and unmet need specifically, which is important to address. The first research question I have initiated warrants discussion of how the regional differences in unmet need occur and how can they be minimised. This analysis may reasonably trigger potential queries should there lie any linkages with low contraceptive use, poor home visits from community staff, adolescent pregnancy, or any other reasons yet to be explored.

5.2.2 Contraceptive Sources, Field visit of providers and Facility delivery

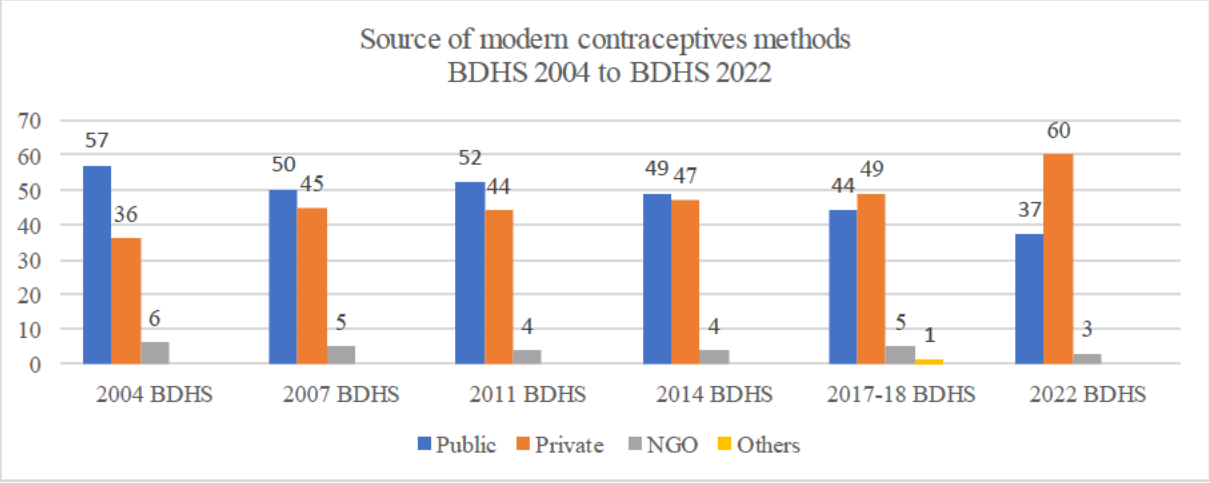

Figure 9: Modern Contraceptives sources

Figure 9, above, shows that the most recent figures reveal 37 % of modern contraceptive users responded that they got their supplies from public sector sources, while 60 % received them from private sector sources. The increasing dominance of the private sector is noteworthy here, particularly in the most recent two survey reports.

Table 10: Contact with family planning providers/ with types of workers

Background characteristics	Women who reported being visited by a fieldworker in past 6 months (%)	Discussed FP methods with service providers	Given FP methods by service providers	Discussed and given FP methods by service providers	Government Health Worker	NGO Worker	Others
Women aged 15 - 49	20	63.2	24.9	12	75.3	25.3	0.4

As Table 10 shows, the BDHS of 2017-18 says that 20% of currently married women report they have been visited by a FP fieldworker in the last six months, the same proportion as in the BDHS of 2014. 25% received FP methods, just 12% both discussed and received FP methods, and around 64% discussed FP methods with the service providers.

Among the service providers, the service seekers reported that 75% are government service providers and 25% are NGO providers.

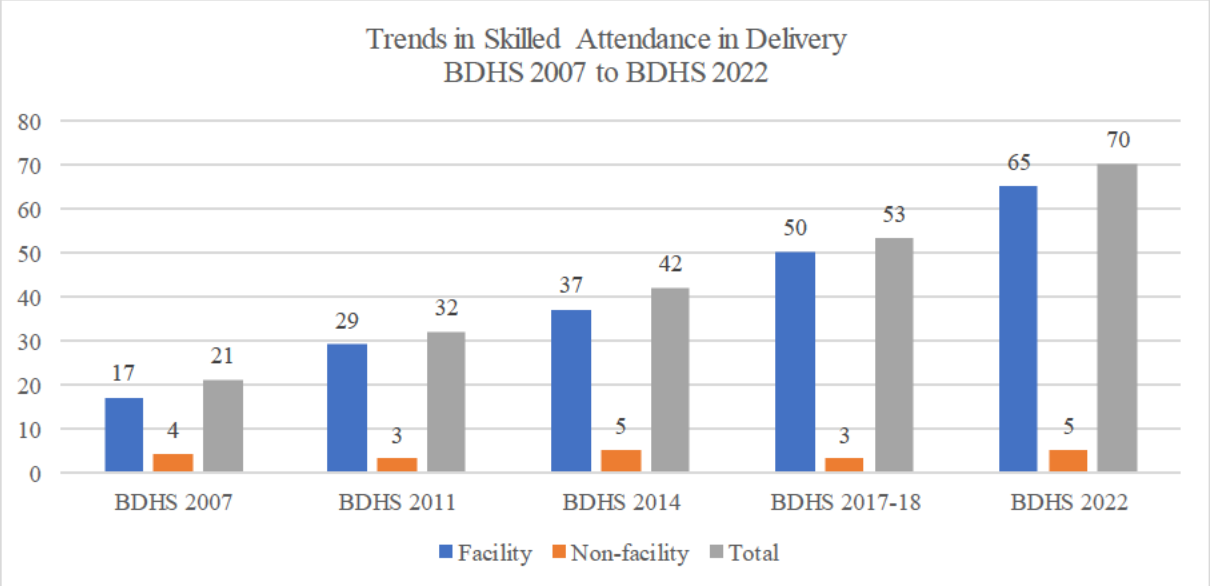

Figure 10: Trends in Skilled Attendance in Delivery

Figure 10, above, reveals that facility delivery increased to 70% in 2022 from 53% in 2017-18. Until today, one out of every three deliveries were made at home without the help of a skilled birth attendant, thereby contributing to maternal and child mortality, although the trend of having a skilled attendant is increasing, from 53% in 2017-18 to 70% in 2022.

Increasing dominance of the private sector (60%) (see Figure 9) over the public sector (37%) as the source of contraceptives used by service seekers demonstrates the decreasing popularity of the public sector. Table 10 also reveals the poor number of visits (20%) made by fieldworkers in the community as contraceptives supplies mostly are delivered by the fieldworkers. Of the government providers, 75% are reaching just 44% of service providers with contraceptives, a clear under-utilization of government resources (see Table 10, above). Although facility delivery has increased, still 30% of deliveries take place at home, showing poor or under-utilization of FP infrastructures (see Figure 10).

All these findings validate my quest to investigate the limitations of the FP programme. Does the poor quality of FP services among the public sector of service providers bar users from using public sector contraceptives? Are the middle class and more highly educated not interested in public sector contraceptive services? Certainly, poor home visits in terms of both number and quality by the fieldworkers have been evidenced. Facility deliveries are increasing, but still 33% of deliveries are conducted at home. Exploring the causes behind these poor statistics will help me to initiate new policy recommendations for the provision of better FP services to clients.

5.2.3 Access to FP and Health services

Table 11: Availability of FP and Health Services, BDHS 2017-18

Service Provider	Urban	Rural	Total
Shops/pharmacies that sell FP methods	87.9	70.9	75.9
Satellite clinic	92.1	97.8	96.2
Number of women	5729	14328	20127

Satellite clinics have been found to be accessible as the source of FP and health services by 96% of respondents. Shops and pharmacies are another major source of FP and health services where 76% of married women collect their contraceptives and receive health services. Their use is found to be increasing, up from 65% to 76% between the BDHS of 2014 and the BDHS of 2017-18. This demonstrates that urban women are in a better position to access FP and health services from shops and pharmacies, rather than from satellite clinics (88% and 71%, respectively). Rural married women are in a slightly better position for access to the satellite clinics compared to urban women (98% and 92%, respectively).

Satellite clinics are conducted eight times a month at *Union* level (administrative area between sub-division and the lowest unit, Ward) by the Family Welfare Visitor (FWV) who is one of the major sources of contraceptives for married women. Shops and pharmacies are in abundance in urban settings and there are no government restrictions against selling FP contraceptives to married or unmarried

women. The interview respondents shared this information which supports the survey data regarding the popularity of pharmacies and satellite clinics in both urban and rural area

Table 12: Availability of Health Facility BDHS 2017-18

Distance	Any facility	Govt. facility	NGO facility	Private facility	Rural dispensary	Satellite clinic
Village/moholla	85.6	43.5	9.0	8.6	1.1	77.3
1 km	9.3	24.8	7.1	7.8	0.9	11.4
2 - 4km	4.8	28.5	24.1	18.9	2.0	6.9
5 km or more	0.3	3.2	59.1	33.5	1.9	0.5
Don't know	0.0	0.0	0.1	0.0	0.0	0.0
No facility	0.0	0.0	0.6	33.2	94.0	3.9
Total	100	100	100	100	100	100

Table 12, above, shows that around 44% of government health facilities are located within the village/moholla, while more than half (56%) of all facilities are located outside the village/moholla, spreading from 1-4 kms into the rural setting. The urban setting demonstrates a worse situation than the rural setting with 34% of facilities inside the village/moholla and almost 60% facilities outside, the latter spreading over a 1-4 km area. Another important fact is that the urban areas have a relatively higher percentage (25.3%) of NGO facilities, while the rural settings have a minor percentage (2.5%) of NGO infrastructures inside the village/moholla.

Table 13: Availability of Health and FP Workers

Health and FP field worker	Urban	Rural	Total
Government	71.0	99.3	91.2
NGO	36.2	17.7	23.0
Private	1.7	0.2	0.6
Other	2.9	o.4	1.1
Any worker	92.6	99.8	97.8

Table 13 demonstrates that the availability of Health and FP workers is higher (99.3%) in the rural areas than in the urban setting (71.0%). Moreover, the urban areas are served by a higher number of NGO fieldworkers (36.2%) than the rural areas (17.7%). The urban areas are better facilitated with Allopathic/ MBBS medical practitioners (85.2%), compared to rural areas (66.6%).

Findings: The BDHS 2017-18 findings demonstrate the availability of more government workers in the rural areas compared to the urban setting due to the absence of government recruited staff in the municipality/urban areas as they are administered under Local Government jurisdiction. The FP Department is not entitled to recruit field staff there. This also contributes to a relatively poor performance in the city/urban areas as these areas have huge populations living in slums. The number of NGO workers is slightly higher there, however, there are not enough of them to attend to the densely populated households in the urban setting. Again, the survey does not reveal detailed data regarding shortages in the number of field/clinical workers among the existing manpower in the rural FP settings. Almost all the respondents from the rural settings emphasised the slow recruitment process against the rapid pace of retirement of the personnel, especially in the case of some vital clinical posts, such as FWVs and SACMOs.

5.2.4 Women's Empowerment and Demographic outcome

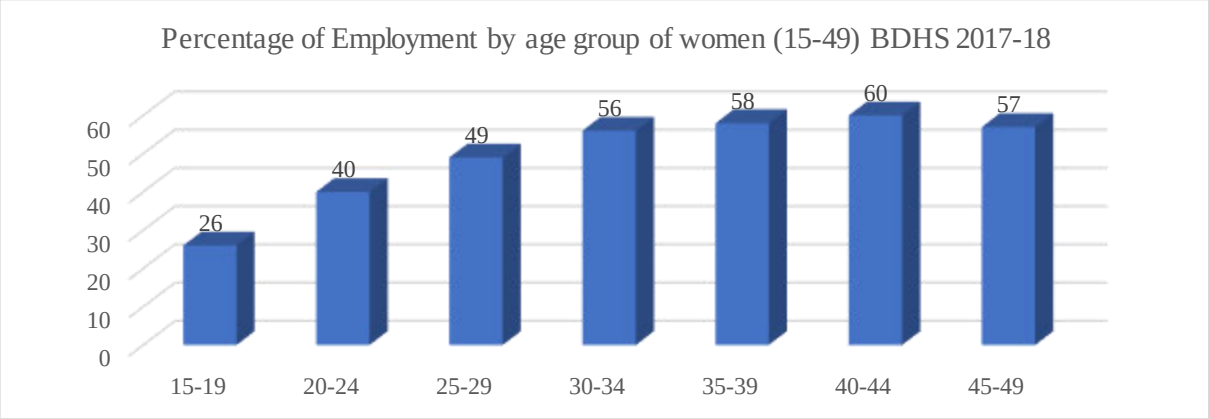

Figure 11: Employment by age group of woman (15-49)

Figure 11, above, shows the highest percentages of employment are found among women in the age groups 35-39 and 40-44 (58% and 60%, respectively), while lowest number of women in employment are in the 15-19 age group (26%), according to the BDHS of 2017-18.

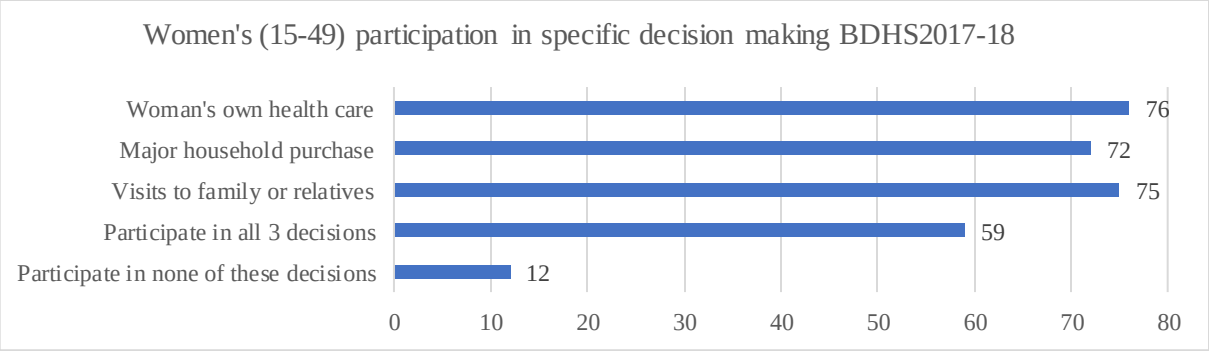

Figure 12: Women's participation in specific decision making

As Figure 12 reveals, woman's own health care, major household purchases, and visits to family or relatives are identified as three specific decisions made by women in terms of their own empowerment. Fewer than two thirds of women (59%) responded that they participated in all three decisions, either alone or jointly with their husbands.

Table 14: Decision-making about Family Planning among currently married women (aged 15-49)

Background characteristics	Mainly Wife	Wife and husband jointly	Mainly husband	Other/don't know/missing	Total	Number of women
Women (15-49)	15.5	77.6	6.8	0.2	100	6107

Table 14 shows that nearly 78% of currently married women make FP decisions jointly with their husbands, while just 15.5% of women independently make the decision about contraceptive use, according to the BDHS of 2017-18.

Table 15: Ideal number of children, unmet need, U-5 child mortality, and contraceptive use for FP by women's empowerment

Number of decisions in which women participate (1. Women's own health care 2. Major household purchases 3. Visits to family or relatives)	Mean ideal number of children	U-5 Child Mortality	Unmet need for family planning (%)	Current use of FP method (%)
0	2.2	48	14.8	54.1
1-2	2.3	44	12.2	60.4
3	2.3	44	11.3	64.1

It is seen in Table 15 above, that although women's empowerment might not have a direct effect on the mean ideal number of children, it does have an impact on a reduction in U-5 Child mortality (44/1000 births), increased FP method use (64%), and meets the gap of unmet need (11.3%) among those women who participate in each of the three decision-making scenarios shown in the BDHS of 2017-18.

Findings: It is evident from the BDHS in 2017-18 that more women are employed (60%) during the last phase of their reproductive cycle (40-44 years), while only 26% women are employed at the earlier phase (15-19 years). Women's participation in household decisions, one of the important indicators of women's empowerment, is linked to their contraceptive use, under-five year old child mortality, unmet need for FP, and reproductive health care access for women. A woman's control over her fertility and use of contraceptives can vary by her sense of empowerment and her belief in her ability to control her own fertility and sexual life. The percentage of contraceptive users are higher (64%) among women who participate in all three specified decision-making scenarios (i.e., woman's own health care, major household purchases, visits to family or relatives) compared to women who do not participate in any of these decisions.

The research question I initiated regarding the women's decisions for contraceptive needs, preferences, and choices inside and outside the family, relates to women's empowerment and has both the attributes of quantitative and qualitive elements. Analysis of the data primarily evidences that women's empowerment is associated with an increase in FP contraceptive use. However, the multi-faceted construct of women's empowerment dynamics is exposed here implicitly, providing the foundation for discussing the dynamics more explicitly in the qualitative analysis.

5.2.5 Child Marriage and Teenage Pregnancy

Childbearing at a very young age is often associated with a potential risk of complications during pregnancy which may result in maternal death and higher rates of neonatal mortality. Short intervals between the births (less than 24 months) can often lead to negative outcomes for both the mother and the newborn.

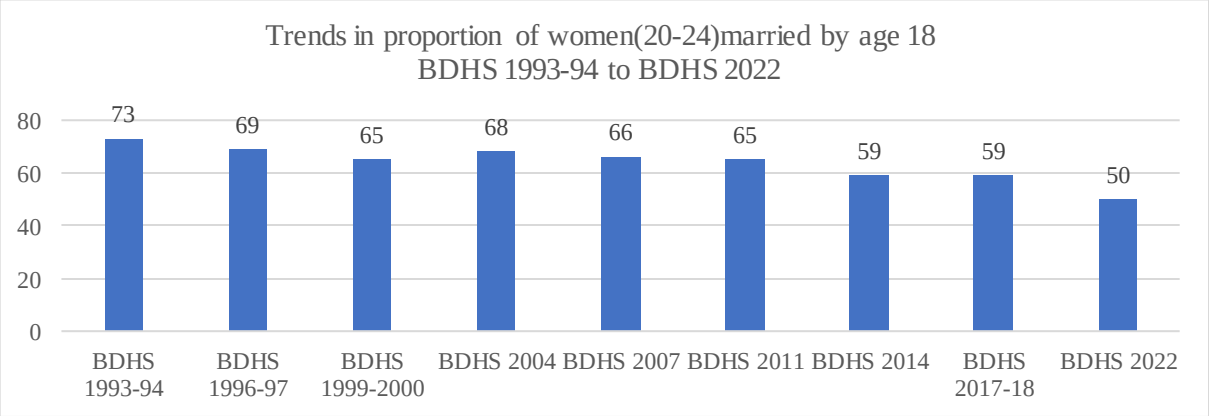

Figure 13: Trends in Child Marriage

Figure 13, above, reveals that adolescent pregnancy is a concern for the FP programmme as presently one out of two adolescent girls (50%) are married by the age of 18 (NIPORT et al., 2023). This is aggravating the maternal mortality scenario of the country, even though there was visible progress between the BDHS in 2017-18 at 59%, going down to 50% in the BDHS in 2022.

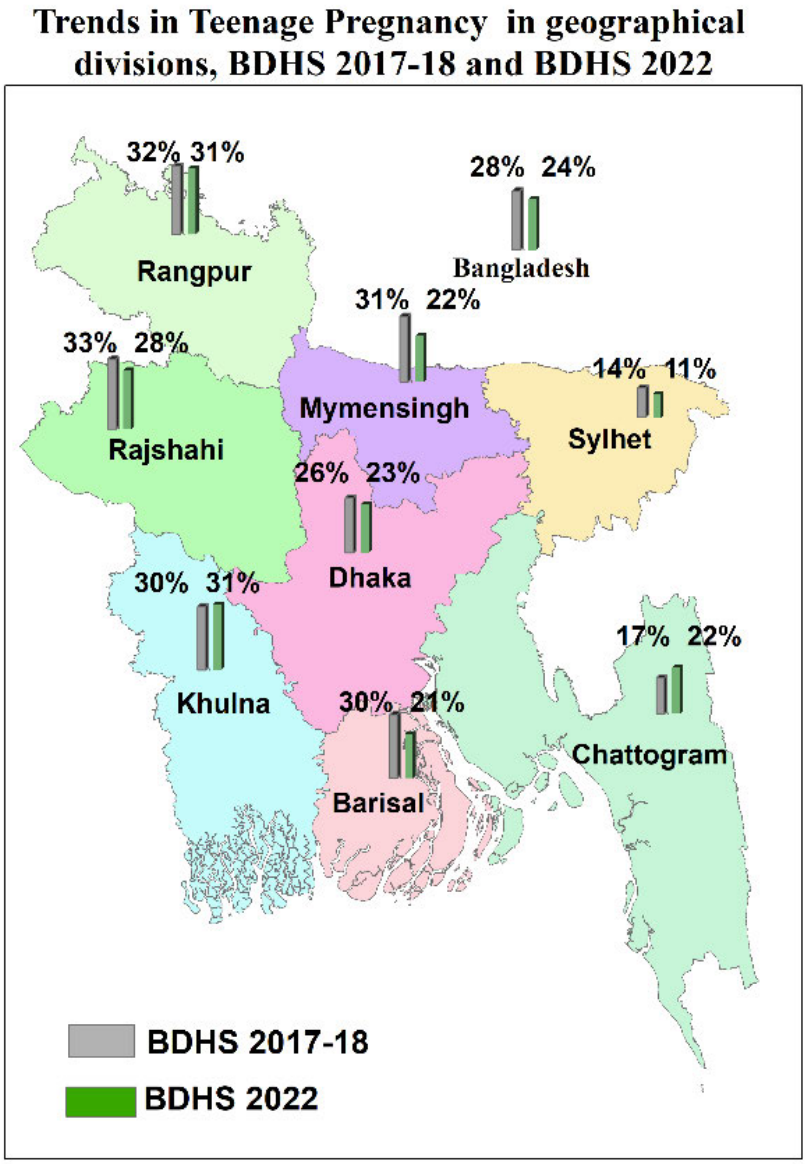

Figure 14: Trends in Teenage pregnancy

Figure 14, above, shows the proportion of young women (15-19 years) who have begun childbearing is highest in Rangpur/Khulna (31%) and the lowest in Sylhet (11%), although the national average is 24%, thus the decline is found to be slow.

Findings: Adolescent pregnancy and fertility are burning issues for Bangladesh as around 24% of adolescents begin childbearing between the ages of 15-19. The BDHS in 2022 shows some improvement, where 24% of teenage girls experienced pregnancy compared to 28% in the BDHS in 2017-18 (see Figure 10). However, still the number of teenage girls who are married before the legal age of 18 is found to be 50% (see Figure 8), a slow decline in number from the BDHS in 2017-18 to the 2022 survey. Adolescent fertility is a concern for Bangladesh as the rate of 128 births/1000 for girls

aged 15-19 is the highest in the Asia-Pacific region (IPU & WHO, 2016). Contraceptive discontinuation is found to be the highest among the teenagers with poor reproductive and contraceptive knowledge.

High fertility rates usually equate to low contraceptive use with high numbers of pregnancies, and low fertility rates to high contraceptive use with low numbers of pregnancies. This is a normal demographic phenomenon. A scrutiny of the analyses reveals some paradoxical findings in some geographical regions regarding high teenage pregnancy, low fertility, and high contraceptive prevalence rate, which directly contrasts with the apparently normal FP situation. Khulna, Rangpur, and Rajshahi demonstrate low fertility and high contraceptive use, but these areas also have higher rates of child pregnancy due to the early age of marriage (see Figures 5, 6, 8, 14). Conversely, Chattogram (2.6 and 58%, respectively) and Sylhet (2.3 and 53%, respectively) reveal relatively high fertility and low contraceptive use, so teenage pregnancy is expected to be high in these regions. However, this is not the case as these regions have the lowest rates of child pregnancy among married girls of 15-19 years (Sylhet 11%, Chattogram 22%) (see Figures 5, 6, 8, 14). This regional demographic paradox of high fertility with high contraceptive use seems to have changed only slightly between 2017-18 and 2022 in the above-mentioned regions, which can be ignored as it suggests no major shift in the prevailing phenomenon.

Although the analysis does not reveal any hidden reasons for this complex demographic conundrum, still it provides space to investigate the situation from the respondents' perspective as their in-depth opinions and views are revealed in the qualitative analysis. The respondents' views may expose whether, or not, the paradox has any impact on the stagnant situation of fertility or contraceptive use. Although the research question regarding the link between early pregnancy and FP service provision, it does not seem to be directly linked, the issues embedded in this paradox cannot be alienated from the early pregnancy phenomenon.

5.2.6 Childhood Mortality and Maternal Mortality

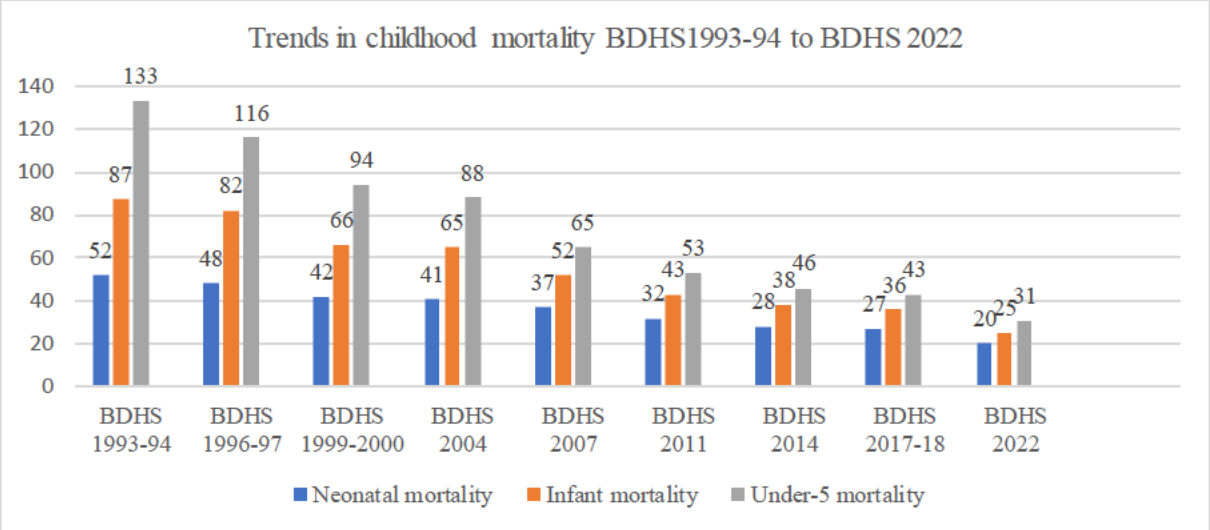

Figure 15: Trends in Childhood Mortality

As revealed in Figure 15, above, child mortality trends show that neonatal, infant, and U-5 mortality rates decreased by 42%, 57%, and 66%, respectively, between 1993-94 and 2017-18. Visible progress has been found in all three cohorts in 2022 compared to 2017-18. Biodemogaphic factors, such as the mother's age, have been identified as risk factors in childhood mortality. Women below the age of 20 experience a higher mortality rate in the U-5s (54%) compared to women in the age groups 20-29 and 30-39 where U-5 mortality is 39% and 47%, respectively (NIPORT et al.,2023). However, as with the trends among other determinants, any decline is found to be slow, or almost stagnant, up to 2014, but satisfactorily higher between the most recent two surveys in 2017-18 and 2022. A greater reduction (to below 23%) of neonatal mortality was recorded in the last HPNSDP (2016-2022) of FP and was also found in the BDHS in 2022.

Table 16: Early childhood mortality rates by socioeconomic characteristics

Background Characteristics	Neonatal mortality (NN) %	Post-neonatal mortality %	Infant mortality %	Child mortality %	Under-5 mortality %
Residence					
Urban	21	13	34	3	37
Rural	31	9	40	10	49
Division					
Barisal	21	5	26	9	35
Chattogram	24	12	36	14	50
Dhaka	25	10	35	5	41

Khulna	41	7	47	9	56
Rajshahi	31	7	38	5	43
Rangpur	27	7	34	5	39
Sylhet	39	16	55	12	67
Mothers Education					
No education	26	12	38	13	50
Primary Complete	31	12	42	3	45
Secondary complete or higher	13	4	18	9	27

As Table 16 reveals, some socio-demographic factors, such as place of residence, mother's education, and wealth quintile, were identified as risk factors for childhood mortality, along with the mother's age, previous birth intervals, among others, from the BDHS in 2017-18. (NIPORT et al., 2020). Urban mothers have lower child mortality rates (37%) compared to rural mothers (49%). Mothers with secondary or higher education have the lowest child mortality rate (27%) compared to those with no education (50%).

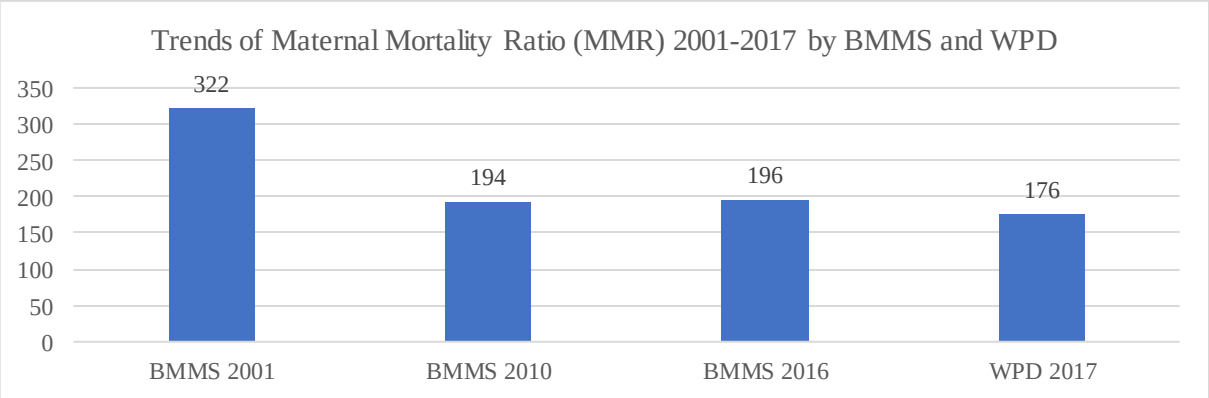

Figure 16: Trends in Maternal Mortality

*BMMS: Bangladesh Maternal Mortality Survey

**WPD:World Population Datasheet

The BMMS in 2010 shows a sharp decline in maternal mortality to 194/100000 live births from 322/100000 live births in BMMS 2001.

Findings: Table 16 provides in-depth information on how infant mortality is impacted by different levels of the mother's education and/or place of residence. This analysis demonstrates that infant mortality differs from urban to rural areas, and between the educated and the non-educated, characteristics of each having links to FP services.

Again, an almost plateauing situation can be seen here as the mortality rate hovers around 196/100000 live births in the BMMS of 2016. The mortality trend reduced, as did other determinants, between 2000 and 2010. However, the World Population Datasheet (WPD) in 2017 showed substantial progress with a decrease of maternal mortality to 176/100000 live births from 196 in the BMMS of 2016. Despite the confusion over the rate of mortality between the BMMS and the WPD data, maternal mortality rates were not that satisfactory, echoing the slow progress among the other determinants (fertility, contraceptive use, unmet need, child mortality) during this period.

Both infant and maternal mortality are determinants of FP which are the outcome of pregnancy, generally, and early pregnancy, specifically. The findings on infant and maternal mortality supplement the detailed qualitative analysis which evidences the preliminary linkages with early pregnancy and women's empowerment issues raised by my research questions.

5.3 Summary

The quantitative analyses of the BDHS reports over various time periods (especially the most recent four surveys of 2011, 2014, 2017-18, and 2022) demonstrate that fertility (2.3 child/woman), unmet need (10%), and contraceptives use (65%), are slowly moving from an almost plateaued position. Facility deliveries and deliveries with skilled birth attendants present have increased. Childhood mortality rates are also found to be following a progressively downward trend between the BDHS in 2017-18 to the 2022 survey. However, latest international reports from UNFPA, WPD, and WHO reveal that infant mortality has reduced to 25/1000 live births, even though the BDHS in 2017-18 reports this to be 36. Likewise, infant and maternal mortality are reported to have reduced to 143/100,000 births by international reports, compared to 176/100,000 births reported in the WPD (2017). In addition to these findings, the analyses attempted to throw light on the research questions I aimed to answer at the beginning. The discussion has revealed a reasonable number of linkages among the research questions with the exception of the final one, i.e., how can quality of care narrow the gaps in FP? In fact, the BDHS database has no direct data regarding quality of care issues. However,the information generated from the analyses has soundly embedded evidence to answer the quality of care issues.

In the following chapter I report on the analyses of the qualitative findings whose primary base originates in the quantitative approach. The qualitative analysis endeavours to detail the interview respondents' views and opinions with the aim of revealing all of the embedded, addressed issues, along with new ones.

Chapter 6 Qualitative Analysis

6.1 Introduction

This chapter discusses the qualitative findings derived from the respondents' interviews. In each of the sections I provide some context, including the background data and statistics, before moving on to the interview data. The most obvious structure for this that I will follow is to discuss firstly 'how', and secondly 'why', these issues are important to FP services in Bangladesh, based on the respondents' responses. I finish with a summary that ties the whole together and reiterates the main points made at the end of each section. Finally, I initiate my overall observations to close the chapter, based on the analyses of all sections.

I have planned the chapter with the following sections corresponding to the major themes derived from interview codes and categories to better address the research questions I have set for my study.

Table 17: Thematic table for Qualitative analysis

Sl	Theme
1	Home visit/facility visit, unmet need, and regional differences in FP services
2	Needs, preferences and choices of contraception, and women's autonomy
3	Adolescent marriage/pregnancy, maternal and child mortality
4	Quality of care, skills increase, and unmet need

My research questions guided me to select the concepts derived from themes, categories, and codes. Based on the selected concepts I developed the qualitative analyses in the following ways.

6.2 Home visit/facility visit, unmet need, and regional differences among FP services Introduction

The analyses of the respondents' interviews in this section address the first two research questions of the study. They are:

1- How do the regional differences in unmet need occur and how can they be minimized?
2- To what extent do the limitations of community-based female workers' house visits and poor functioning of facilities contribute to unmet need for Family Planning?

The opinions and views provided by many participants during the interviews reinforced the importance of female workers contribution in FP found in the background literature. In the purview of socio-cultural-religious setting of the community, the participants emphasised that the declining trend in field

visits, for various reasons, can make the previous success of FP challenging against the backdrop of slow progress, or the stagnant situation of almost all the determinants of FP, in the last decade.

Based on the participants' views and opinions, the contribution of the female workers in the FP programme can be assessed as to how much they remain relevant and unalienable today.

6.2.1 Reasons for declining field visits and poor functioning of facilities

Most of the FP practitioners interviewed, and some of the community leaders, found both the home visit and the facility visit to be two distinct approaches, even though they are fully integrated with one another in delivering the services which aim to reduce unmet need among clients. During home visits, field staff provide pills and condoms, while a facility provides all the clinical methods on offer (e.g., injection, IUD, implant, and sterilization). The facility is often seen by the participants as a referral centre where clients' unaddressed issues from a field visit—such as, the side effects of methods and counselling—can be addressed in the presence of technical professionals.

Limitations to the community visits and the direct outcome of poorly functioning facilities have far reaching adverse impacts on almost all the determinants of FP, including CAR, fertility, unmet need, and maternal and child mortality. Almost all the participants shared that the decline in home visits and poor functioning of the facilities aggravated the service provisions of FP, placing the unmet need for FP in a stagnant situation and, in some places, making unmet need rates higher than the national level.

One of the field level FP practitioners remarked:

> *In some places each fieldworker has the allocation of 1500+ couples. So, they cannot make the round visit to a client within 2 months for the increase in clients. As a result, the fieldworkers are not able to provide quality services to the clients (Family Planning Officer, Chattogram).*

The first reason for the decline in home visits is the increase in the population against the gradually decreasing numbers of service providers. The ratio of service provider to client was initially 1:600 in the late 1970s, going up to 1:1200 later 2000s with increase of population , and is currently up to 1500 in some places as a result of irregular recruitment and redundancy of staff due to simultaneous retirement and irregular recruitment.

Shifting the FP field staff from their prime responsibility to the CCs for three days a week restricted their routine field activities. Each CC provides health facilities for 6,000 members of a specific community by the Health Services, a sister concern of FP under the same Ministry; this represents the government's politically prioritized initiative.

As CCs are health facilities, general patients visit the centres with a view to curing illnesses, primarily. Among the huge number of patients, a very small proportion are couples who visit the FP staff for FP services in a limited way (Family Planning Officer,Narsingdi).

Participants concluded that a huge number of FP clients do not have their reproductive needs met because they are outside of the service networks and fieldworkers are not visiting their homes.

FP is not a priority issue among the top policy makers, notable numbers of participants highlighted this as one of the reasons for declining numbers of home visits. As shifting the FP field staff to the CCs is a top down decision from the highest level of policy, staff members from the lower hierarchy of FP are expected to abide by the administrative decisions for fear of being accused of misconduct of service rules, the participants shared.

One of the FP practitioners working as a manager asserted the issue in the following way:

FWAs render services 3 days in CC and 2 days they do the EPI [Expanded Programme on Immunization] activities and they have only 1 day remaining in a week for their field visits. So literally field visit has been replaced by some other priorities realistically (Family Welfare Assistant,Narsingdi).

Poor infrastructure and remote location of most of the facilities, with the lack of utilities and liveable accommodation facilities, make the centres less functioning for the clients. As most of the facility-based clinical staff do not live in their allocated accommodations due to infrastructural problems, security issues, or personal problems of the service providers, the clients who badly require follow up visits due to side effect related complexities are not served by the service providers around the clock, most of the participants showed their concem regarding this issue. Participants also shared that frequent access to different service facilities tend to be harder if the infrastructures are weak. These facilities might have shortages of quality service providers to deal with the entire population of a specific locality.

Socio-cultural-religious attitudes in the community have been indicated as barriers of to the use of the facilities by most of the participants. Women are not socially nor culturally encouraged to go independently to the facilities to seek FP services. Middle-aged and young married women have to get permission from husbands or mothers-in-law before they can leave their home to visit facility centres.

One of the FP practitioners working in an area with low educational background amongst the population and with conservative religious values, remarked:

My working area is a religiously influenced area where people are not aware of that level, and they are depended on the traditional methods of FP. How many they are giving birth; how many are dying isn't their concern. They are religiously motivated and want to depend on destiny in this issue (Medical Officer, Chattogram).

The participants argued that due to increased education and awareness, the barriers are decreasing, gradually. However, they remain prevalent and still dominate in most of the rural and less educated settings, the interviewees highlighted. The participants also point out that the limited mobility status of married women in terms of reaching health care centres alone, or even accompanied, results in these women depending on unreliable sources for information. So, home visits by the FP fieldworkers to adolescent women with proper information can help to address the problem.

Additionally, couples of FP practitioners identified a lack of promotion among the field staff as a demotivating factor for the decline in home visits. FWAs have no promotion ladder in their hierarchy. Most of them lose motivation at the middle or towards the end of their service. The participants found the shortage of clinical staff in the facility to be of most concern. Very few centres have both a Family Welfare Visitor (FWV) and a Sub-Assistant Community Medical Officer (SACMO), the two basic clinical staff members. Most centres are delivering services with a single clinical staff member, either a FWV or a SACMO

Some other reasons, such as less welcoming attitudes from the service providers, have also been associated with the poor functioning of the service centres. As there are fewer service providers, they concentrate less on each client when addressing the clients' choices and options. Some participants blamed poor integrity and dishonesty, unpleasant issues, among government staff are the reasons of weak functioning of the government facility. Some degenerate and corrupt staff, with their low level of integrity, are influenced by the private hospitals with financial benefits, so that government staffs with poor integrity cause patients to go a private hospital, a grave allegation against FP staff. One of the district level managers commented:

> *It's unfortunate some of the staffs at the facilities are low motivated with the diagnostic reports. The clients are not happy as they don't get the report timely for various reasons (District Level FF Practitioner, Narsingdi).*

Some participants also shared that supervisory visits from all levels of the hierarchy are not being conducted regularly in the midst of poor administrative flexibility. As supervision and inspections are not done in a timely fashion, field staff become reluctant to maximise their home visits in the remaining two days for various reasons. The participants agreed that facilities located at a distance are almost ignored in terms of supervisory visits and inspections:

> *Some of the facilities at rural areas have not been visited by the officers even for a single time in a year (Community Elected Leader, Chattogram).*

The participants were in consensus that compromising the supervisory visits for any other reasons may have some impact on the QoC provided by the field staff.

6.2.2 **How do fewer home visits and poor functioning of facilities affect FP services?**

Both declining home visits and poor functioning of facilities help create unmet need in various ways, the participants shared. Apart from the hard-to-reach areas, gaps in service delivery occur in plainland as well in presence of moderate service providers. To address the unmet need, both the role of the FP service providers and of the clients are important, the participants argued.

Sociocultural impediments have been identified in increasing the gap of unmet need in various social settings by most of the participants. One participant shared an interesting issue which is prevalent in the sociocultural setting:

> *Just after the marriage the newly wed bride has to prove that she is capable of being a mother with the reproduction despite having the intention to defer the first birth. Both the couples have to kneel down to the pressure from the in-laws within one or two years (Family Welfare Visitor, Narsingdi).*

This is a big issue of unmet need, the participants observed, prevalent more in the rural areas than in urban areas.

Most SACMOs among the service providers are male, with whom female clients are not fully open, for religious reasons, to share the side-effects they experience with the contraceptives. The participants also shared that despite rapid sociocultural advancement, religion still matters in the less educated rural areas. Due to their strong religious affiliation, they believe that, as Allah (God) decides creation, he (God) will cater food for them.

The clinical issues related to unmet need are aggravated more after deliveries, the participants shared. One of the HO level policy makers with a clinical background emphasised the need to ensure round the clock presence of the service providers so that the gaps in contraceptive need can be met during the risky time after deliveries.

> *Every delivery, every complication of methods will have to supplemented with a timely suitable FP method. To address the unmet need at least 50%, round the clock presence of service providers in the facilities need to be ensured (Director, FP HO).*

Some of the participants working in the clinical atmosphere shared that integrated health services can be a feasible way of addressing the unmet need for FP among women. For example, if a woman is offered a FP method just after a delivery, this will surely save her from repeat pregnancy. In reference to the recommendation, clients with four to five children are encouraged to adopt sterilization after the birth of their last child in the Bangladesh FP context, the participants shared.

Negligence from both service seekers and service providers has been identified as one of the major reasons for creating unmet need and it is getting higher day by day. Regarding the negligence of service

providers, some of the FP clinical practitioners are straightforward, they make themselves more responsible for poor availability, lack of sincerity. Some dedicate themselves to meeting the unmet need among the clients despite serving the hard-to-reach areas, while others remain irresponsible.

> *We have problems with our colleagues as well. Some are not doing their work properly being unavailable at work with poor dedication (Family Planning Officer, Narsingdi).*

Apart from physical health issues, such as bleeding, gaining weight, irregular menstruation cycle, and so on, mostly sociocultural reasons, such as existing misbeliefs and taboos about contraceptive use and lack of information about different methods for specific age groups, play a role in the discontinuation of any method, the participants highlighted. One of the field staff shared her experience in this way:

> *Among the pill users, women often forget to take pill regularly. Sometimes they don't even know their stock is finished (Female School Teacher, Chattogram).*

Regarding the negligence of the service seekers, a lack of seriousness resulting from the client's ignorance often causes the problem. The same field staff member commented:

> *For example, if a mother experiences fever, she will be doing everything possible for her to collect a paracetamol but if her stock of Oral Pill is over, she might not have same level of seriousness (SACMO FP Chattogram).*

Disruption to the supply chain, not for the lack of stock, but for the shortage of staff is aggravating an unmet need issue in some places, according to participants. The service seekers are meeting their need by collecting contraceptives from private sources. The service providers are unable to distribute the contraceptives according to their targets. So, unmet need is created, although realistically the demand is fulfilled. The practitioners highlighted this critical issue about overlapping services by the FP staff and NGO providers. This can help policy makers to formulate policy planning, having the real picture of unmet need in the locality and demarcating the service rendered by both GOs and NGOs. It has been recommended that the public sector can also encourage the private sector to go to private practitioners or to promote the initiatives via the social marketing of condoms and oral pills. The participants also report that private sector and NGOs have already surpassed the public sector as the source of contraceptives as the government has encouraged the private companies.

Participants raised an important policy issue regarding the increase in service gaps. They pointed out another big pocket of unmet need in the urban slums and city areas as, programmatically, FP field staff are not recruited there. Some of the NGOs registered with FP are providing services in these areas, but compared to the huge population, the service providers are few. So, unmet needs are there. Participants also raised the point that poor policy planning, such as implementing the same type of awareness campaign all over the country in Bangla, often fails to cater for the unique and specific needs of some

regions, like Sylhet and Chittagong Hill Tracts (CHT) where indigenous people have their own languages. One of the participants commented:

> *They have already decreased population in the hills [CHT]. So, mainland campaigns highlighting poor family norms won't work there at hills (Family Planning Inspector, Chattogram).*

Ignoring their unique languages and their sociocultural norms in FP campaigns cannot have a positive outcome, the participants shared

Area-based local initiatives will be fruitful and effective based on the need of the clients. The regions with high unmet need will have to be monitored and classified so that policy level initiatives can be implemented, the participants recommended.

> *Sylhet and Chattogram are different from other parts of the country with their socio-cultural settings. So it should be given consideration during the campaign design (Deputy Director FP).*

Redesigning the service delivery systems can increase contraceptive use, lowering unmet need, even in the rural areas with low literacy rates and poverty.

An increase in home visits can increase the utilization of facilities in various ways. Side effect management, awareness building about various misconceptions regarding methods, and motivating the clients for Longer Acting/Permanent Methods (LAPM) can be done from the facilities, thereby, narrowing the unmet need. Home visits can expedite all these services in the facilities. It has been evidenced that facilities with institutional deliveries are better functioning as people feel trust in the facilities which also cater for ante natal care (ANC), post natal care (PNC), and general treatment as the by-product of deliveries.

> *The clients at facilities are mostly motivated by the field workers during the home visits. Facilities become more functional with various other services while community visits are done (Community leader Chattogram).*

Various other sharing from among the participants suggests the public sector can collaborate with the NGO clinics to give more choices to the women and provide improved quality of services. It will, at the same time, shed the huge burden from the public sector, encouraging the middle class and more affluent people to enjoy relatively shorter wait times and quality service. In this way the public sector can replace more resources and provide quality services to the poor and underprivileged.

As CCs for health services are now a reality and FP is not able to withdraw field staff from a CC, one of the policy level FP practitioners strongly recommended inter-ministerial coordination and decision-making to make FP services more functional and effective, side by side with health services delivered by the Health Professionals.

With the present Government initiatives with CC it is highly unlikely to bring back the earlier busy days of community workers. Rather we can look for ways how to make CCs more engaged with Family Planning (Director FP Dhaka).

One of the policy level officials at FP HO remarked on this existing reality as it cannot be denied that FP facilities and CCs need to be integrated to ensure both FP and health services can be delivered to the community. But still, the integration is not working due to a lack of initiatives. In fact, FP services at the CCs are now experiencing this modality of service approach where patients/couples are offered counselling and methods after the treatment is done, participants revealed.

Some suggest the earlier modality of community based field work in all five days should be brought back.

Already our staffs are withdrawn for one day. Hopefully our staffs will be fully withdrawn when CC sanctioned posts are filled in. Then fieldwork of FP will be usual like past days (Family Welfare Assistant, Narsingdi).

However, some suggest that it is the core responsibility of the programme personnel to determine which mode of delivery is more feasible in a given community. It is suggested that based on the modes of existing FP programmes, community field work programmes can be streamlined. They also suggest community-based field programmes might partner with like-minded organisations with almost same kind of service providers in the arena of FP (women's health care, family health care, and obstetrics services).

6.2.3 Summary

Both community visits and facilities are part and parcel of the formidable success of FP demonstrated in Bangladesh. The participants highlighted the impact of the poor field visits and poor functioning of the FP infrastructures by exploring the root causes active behind them. Shortage of field staff with an increasing population, engaging the FP staff in other responsibilities in addition to their primary responsibilities, and less priority placed on FP community activities among policy planners have been identified as some of the major reasons for the decreasing trend in community visits. Facilities have been found to be under-utilised or moderately utilised due to the shortage of clinical staff, poor conditions amongst the infrastructure, sociocultural and religious reasons, and a lack of awareness as major reasons. All these limitations have aggravated the provision of FP by widening the existing gaps and making the services poorly available to the service seekers. With a view to minimizing the existing gaps by making the field visits and facilities more functional and effective, some policy interventions have been put forward by the participants. It is expected the implementation of the policy interventions will help narrow the existing gaps in FP, making the services available to the service seekers and reducing the unmet need to more tolerable levels. The above discussion also foreshadows the basic

queries of the first two research questions by discussing in-depth the dynamics of unmet need and the limitations of community fieldwork contributing to service gaps.

6.3 Needs, preferences and choices of contraception and women's autonomy

The major objective of the interview discussions reported in this section is to address the third research question:

How are decisions around needs, preferences, and reproduction made and negotiated within and beyond the family?

In this section, the respondents highlight the contraceptive needs and preferences of married women and how these preferences are influenced inside and outside the family. They also discuss how decisions around reproduction are made and negotiated within and beyond the family, and also how autonomy influences the contraceptive uptake decisions made by women.

6.3.1. Poor understanding about contraceptives

Few married women are able to freely make their own contraceptive choice in the community. Lack of contraceptive knowledge among the potential users, due to both providers and users ignorance, has been pinpointed by the participants. A huge number of adolescents are not covered with contraceptive advice due to ignorance, even though they may be married. After marriage some want to delay pregnancy, but unfortunately they are not necessarily aware of how to do so.

Some of the participants shared that a good number of adolescents become pregnant at their first coitous after marriage. Apart from this, poor understanding about the efficacy of methods, or the failure of methods, can contribute to the lack of proper knowledge about contraceptives. One of the FP participants shared:

> *Breastfeeding could act as a method against pregnancy, however, breastfeeding needs to be done in every 2/3 hours, 10/12 times in a day. If the child sleeps at night for a longer period, and the couples have intercourse, it can be regarded as method failure with pregnancy as outcome (Medical Officer, FP).*

One of the FP clinical practitioners with a long career, shared an experience which portrays poor understanding about contraceptives, even among the highly educated couples, which can lead to disastrous outcomes.

One of my clients with four kids intended to terminate the fifth child. When I asked her about using a method before the intercourse, the educated client with a good job responded, her husband used condom. I with my vast experience suspect, husband might have used condom occasionally without having the knowledge of safe period. This incident happened with a highly educated couple (Physician FP,Narsingdi).

'Withdrawal and safe period' as traditional methods are understood by the wives, but still most clients have an incorrect notion about the very meaning of 'safe period', the participants revealed. They also found some of the women who had had unintended pregnancies chose MR. It was evident from their conception that they prefer planning a method of contraception rather than going for MR.

6.3.2 Male involvement in contraceptive use

Male involvement is a burning issue in the discussion about increasing contraceptive use among the clients. Almost all the participants shared that male involvement in contraceptive use is really poor compared to their female counterparts due to various kinds of sociocultural reasons and, of course, due to the limited number of contraceptives designed specifically for the males to use. One of the participants noted quite clearly:

Male participation is not up to the mark, frankly speaking, despite males' limited number of methods, condoms and sterilization. Sterilization is not popular for socio cultural reasons and trend of use is decreasing. Male condom, probably the method with least side-effect for both the couples is also not getting a sharp rise in use. It's true that lions portion load of the methods are being burdened with the females (Family Welfare Visitor FP).

Males are not interested in sterilization and are also reluctant to use condoms. So, the lions' share of the load for choosing contraceptive methods falls to the women, the participants found. The participants agreed that men had been removed from the FP programme as there are fewer methods for them and women had been taking the largest portion of FP methods individually, under the medical model of contraception.

Husband-wife consultation, another issue regarding the sustainability of contraceptives by reducing the discontinuation issue, is also found to be poor, the participants shared. Despite the rise in girl's education and empowerment, husband-wife consultation is not expected to be at a satisfying level. Again, patriarchy and the financial capability of the males contributes here, working against the consultation process.

In most of the cases the husbands are buying the pills even not consulting with wives with their choices. The wives might have some physiological problems and that might deteriorate using pills, all these issues are not being addressed when husbands are buying them the contraceptives. They don't even want to consult the issues with wife. They have money and they

are deciding the methods for their female partners and female partners are supposed to comply what husbands are deciding (Female School Teacher, Chattogram).

Most practitioners and community respondents explain that husbands' absolute control over decision-making may limit wives' authority over financial resources, which consequently may bar their access to reproductive health care services, resulting in poor use of contraception. The participants also added that the joint decision of a husband and wife might have potentially positive outcomes compared to single partners independent decision-making. It is also discussed that based on the socio-economic context, women's autonomy does not fully work alone, rather it is embedded with the cultural values of mutual dependence within the families.

The participants were found to be convinced about the small increase in male sterilization due to the taboos against the backdrop of inbuilt patriarchy, but they were concerned about the decline in male condom use. Apart from contraception, condoms provide a barrier against STDs for both partners and, most importantly, their use gives the women the flexibility to not use contraceptives on the grounds of the side-effect they suffer.

Male sterilization may decrease the male sexual capability, this misconception discourages the males to go for it. Fear of being exposed in the society is also matters with sterilized males (Male School Teacher, Narsingdi).

Some participants highlighted spousal disagreement and lack of communication between husbands and wives regarding the use of contraceptives to reach their ultimate reproductive goals.

Husbands are not so motivated to use condoms. Wives are also not fully aware of the benefits of condoms like being flexible in using pills or getting rid of sexually transmitted diseases (Family Planning Inspector, Narsingdi).

One of the participants who worked in a survey project regarding the involvement of male participation in contraceptive use narrated an interesting incidence which portrays the mindset of the males regarding the use of contraceptives by their wives in a semi-urban area. When asked about their wives contraceptive issues, they were not interested in discussing the issue. They used the term "*meyeli masala"* in Bangla, which means "women affairs", and state they are not in a mood to discuss women matters.

Most of the FP Practitioners and other stakeholders highlighted the low contribution of males in contraceptive use and argued that males can contribute more, in various other ways, to increase their share of responsibility, not even accepting the methods directly. Males can support their wives in adopting FP methods, giving them money to buy desired contraceptives, discussing the issues if a method does not suit their wives. In various ways males can motivate their wives so that they can make a better family life.

Some participants put forward some insightful views which seem to be unique and thought-provoking in the light of making males more inclusive in taking their share of responsibility for contraceptive use. Among them, one of the policy level FP female practitioners urged the formulation of an innovative counselling strategy for the males, so that their thoughts regarding FP can be identified, potentially including them in the process.

> *We still are in a confusion as we give more emphasis to counsel the women, or to the mother-in-law but husbands should also be included in this process, the participant favoured. Even we need to change our counselling system in the facilities or by the fieldworkers. It is true our facilities are women friendly, but we need to take into account that the male partners should be provided enough idea so that they can cooperate with the wives (Director, FP, Dhaka).*

6.3.4 Married couples' and in-law's influence on contraceptive preferences

In-laws, especially mothers-in-law, play a major role in influencing married women in contraceptive use and is a widely discussed issue in the history of FP, the participants informed me. The role played by mothers-in-law at the initial stage of community visits for FP in the early 1980s/1990s was demonstrated to be negative and a challenge to FP at that time. They used to impose mental pressure on their newly-wed daughters-in-law to bear a child soon after the marriage so that they would be sure see their grandchild before their death. They tended not to be positive about contraception for the newly married couples due to a misconception that using contraception methods could lead to infertility. However, the perceived changes in attitudes of in-laws currently, has replaced this attitude with a more moderate, if not fully positive, attitude as a result of the advancement of education and awareness campaigns.One of the Community level leaders commented

> *Nowadays mothers-in-law are not that rigid to dictate or bar the daughters-in-law from using contraceptives like 3/4 decades ago. It's true now some of the changes are happening with the mothers-in-law as well. The girls are being educated nowadays, so also the mothers-in-law are changing positively (Community Leader, Chattogram).*

It was also shared by participants that it is a tradition in the rural areas for mothers-in-law to live with the couples, giving them relatively more control over their daughters-in-laws' reproductive decision-making. Son preference is another trait in agrarian families as sons are viewed as a potential labour force and provider of future financial shelter for the parents as they age.

> *In the rural areas mothers-in-law keep giving pressure to the daughters-in-law to decide childbearing just after the marriage. The couples in most cases cannot ignore but to comply with the pressure. In some cases, couples with two/three daughters also feel pressure not to limit childbearing but to go for another attempt for a son (Female School Teacher, Chattogram).*

As a result, mothers-in-law also act as a barrier to their daughters-in-law's desire to limit childbearing as they long for a grandson.

6.3.5 Peer influence in contraceptive preferences

Peer effect was found to be very functional among the married women regarding continuing or discontinuing contraceptive use, the participants shared unanimously. Neighbours sharing their comfort, or discomfort, about using a particular method predominates over the motivation of FP professionals, one participant shared. Even in the case of switching to injection or other long acting methods, their sharing of information with neighbours influences their decisions over and above professional counselling.

The participants remarked that discussing the use of contraceptives with supportive peers encourages their motivations in contraceptive choices.

> *Condoms are found to be a suggested method mostly if the clients discuss the issue with peers and relatives. Some are reluctant to use condoms based on the pleasure they desire (Female School Teacher,Narsingdi).*

Peer effect works both positively and negatively. However, the participants marked its negative effect more, which is very concerning for the FP programme as most of the hormonal methods have side effects, some worse than others.

> *IUD users may experience bleeding at the beginning. But the news spreads to other potential users just like the pace of electricity (Medical Office, Narsingdi).*

As a result, practitioners face challenges with new clients. Unfortunately, the old users discontinue the methods due to the side effects, one participant found. The participants identified that if most of the group members have already adopted a contraception method, the other members do not want to be left out, so they also soon adopt the same method.

Using satisfied clients to motivate potential new users is a good practise as it works better than professional counselling.

However, the participants found

> *The clients in the rural area are not interested in being exposed in front of others, which makes the campaign more challenging (FWA,Chattogram).*

Despite the challenges of being exposed, the participants expressed optimism towards the potential to use motivated peers to influence others positively.

6.3.6 Influence of FP professionals

The role of community workers in influencing the clients to accept FP methods has also been shared by a good number of participants as motivating, not as imposing. They provide clients with all the necessary information so that they can make their own decisions. One of the participants commented:

> *Community workers live in the same locality with the clients. So community workers sometimes can influence them while they make the home visits, it happens (Community Leader,Chattogram).*

The participants shared that as the community workers are females, so the women clients feel free to share their issues. At the same time they encourage personal intimacy, supportive relationships the providers who value individual preferences of clients.

6.3.7 Women's autonomy and contraceptive choices

Empowerment, or autonomy, of women is an important factor impacting contraceptive use among the married women. The BDHS in 2017/18 reveal that empowered women have lower fertility rates and higher contraceptive use compared to those with less autonomy (NIPORT et al., 2020).

One of the participants made an interesting observation regarding fluctuating empowerment issues, based on age, among the married women:

> *The prime time of pregnancy is generally between 18-30 years when, unfortunately, few married women are empowered to take the decision (Director FP ,Dhaka).*

After this period some women become empowered in their family life, however, they do not exercise this in most cases as most complete their childbearing in the meantime, this participant observed.

Education has been found to be associated with women's autonomy or empowerment, and this has a direct link with women's liberty and access to contraception. It has been evidenced that women with a higher level of education are more likely to access contraceptives compared to those with less, or no, education.

One of the field level secondary girls' school teachers perceived that the government initiatives to promote girls' education is likely to help defer adolescent marriage

> *Of course, the girls are now getting education, scholarships and motivation money at the higher secondary level which is a great boost to defer their marriage and consequently first pregnancy (Female School Teacher, Narsingdi).*

Freedom of choice to use contraceptives is still limited among the women, but more of them are coming under the coverage of contraceptive use with the advancement of autonomy, an outcome of education, the participants claimed.

Most of the participants shared that married women with a sense of autonomy can at least exercise their freedom of choice of contraceptive method, generally. They find that the decision-making around adopting a contraception method was generally mutual. However, the wives mostly decided which method should be used, which one best suits her, and when she should take it. This does not clearly mean that the males, with their imposing choices, were absent, but such impositions were few.

One of the district level FP practitioners with a long career assessed lower earning women's empowerment to be fragile and critical.

> *Again, it's a bit complex, some of the working women especially in the garments or with low income again are not so empowered enough to take the decision. It's true they earn, perhaps the husbands are not interested in condom, or wants his wife should use any method (Deputy Director FP).*

However, it is true it infuses a sense of bargaining power in the women, this participant argued. It has been evidenced that income inequality often leads women to be dependent on male partners, making it challenging for them to negotiate contraceptive use. Working women, especially those in the garment industry, are found to be more cautious and concerned about their pregnancies compared to their counterparts who stay at home and have no engagement with income-generating activities, generally.

One of the FP practitioners remarked that urban women with higher education, living in a nuclear family, are in a far better position than their non-working counterparts in rural areas in terms of making their own choices.

> *This is very simple as women with good education working any type of income generating activities, have to cope with their free time for childbearing, so they don't take the decision abruptly rather they think twice to go for the decision as they have to manage both family and work life(Deputy Director FP,Dhaka).*

6.3.8 Summary

It has been evidenced from the respondents' opinions that access to contraceptives has not yet been fully ensured for all sections of the community. The women with access to contraceptives are also in a complex situation of maximising the benefits of contraceptive use due to their ignorance of contraceptive efficacy and confusion over selecting one suitable to their need. The influence from both inside and outside the home contributes more to place married women in a vulnerable situation when making their choice of contraceptive. How the autonomy issue impacts the behaviour towards contraceptive choice in the typical Bangladesh sociocultural and religious setting has been critically shown. That is, the patriarchy and sociocultural impediments make contraceptive selection for the married women harder. However, the rapid advancement of education and contraceptive awareness have made the present situation more congenial compared to the inception period of FP, the participants clarified. Their critical

evaluation of the issues demonstrates the positive correlation of women's autonomy and CPR in the community. The decisions about preferences, need, and reproductive choices made by women have been found in the diverse opinions of the respondents.

6.4 Adolescent marriage/pregnancy, maternal and child Mortality

The fourth research question of the study is:

How can adolescent/early pregnancy be a significant factor in FP services linking to maternal and child mortality?

This section highlights how adolescent marriage contributes to adolescent pregnancy. It also explores how adolescent pregnancy challenges FP services, widening the gaps, based on the participants' observations. It also endeavours to make a link between maternal and child mortality. Finally, it shows how FP service provisions can reduce adolescent pregnancy as participants claimed.

6.4.1 Reasons for the child/adolescent marriages

The participants revealed child marriage as one of the pertinent reasons for high adolescent pregnancy. Despite the numerous effective initiatives taken by the government with social and legal awareness regarding the prevention of child marriage, it is still a major concern for the policy makers in the country.

Social-cultural-religious impediments were identified primarily by most of the participants as the causes of adolescent marriages. One of the participants shared:

> *Girl children are not seen as assets but as the liabilities in the community. So, the guardians become restless to get them married to release the burden from their shoulders as soon as their daughters experience puberty to avoid elopement or becoming pregnant as a result of non-marital relationship (Family Planning Officer, Narsingdi).*

The patriarchy still stigmatises the adolescent girls for any kind of harassment or and indecent occurrence which is made to them. It is a cultural stigma if an adolescent elopes or becomes pregnant outside of the culturally accepted wedlock system, the participants shared.

Social insecurity of the adolescents has been pinpointed as one of the major reasons for adolescent marriages. Guardians do not feel secure in keeping an adolescent safe at home or beyond as the social setting cannot safeguard the adolescents on their way to school and/or other places. One of the community leaders commented:

> *In a marginalised family, maybe both the parents have to go out for their livelihood, and they have to keep their adolescent girl alone at home. If the parents don't feel it secured to keep the girl child alone at home, they will definitely be getting their daughter married in such an early age (Community Leader, Chattogram).*

Despite the substantial improvement in government law and order, specifically in terms of female safety inside and outside the home, participants shared that still not enough has been done to convince the guardians. Parent's poor financial situation may also lead them to look for wealthy matches for their girls and the parents are easily tempted to choose marriage for them, the participants claimed.

Religious dogmatism and education have a reverse correlation with adolescent marriages in the society. A relative increase in education for girls reduces religious dogmatism and, hence, discourages adolescent marriages, participants shared that better education for girls is going to be more prevalent in the future.

One of the participants, a female school teacher, remarked:

> *Education with girl child can be a better antidote to child marriage. Even after the child marriage, education can help them for spacing between childbearing time (Female School Teacher, Chattogram).*

One female schoolteacher shared her views that religious conservatism acts as an impediment among the Muslim women in accepting contraception. She also pointed out that minority Hindus, with their education and awareness, are ahead of their Muslim counterparts in their acceptance of FP methods:

> *Traditionally Muslim are lagging behind the Hindus in accepting the methods and keeping the family size small. Not only for the methods, but Hindu are also ahead of girls' education, scholarship for the girl students and other social and cultural matters. Muslims most of the times are influenced by the religious personalities and long tradition embedded in their lifestyle (Female School Teacher, Chattogram).*

The Muslim women, as a result of their religious affiliation, were found to choose more traditional or temporary methods than their non-Muslim counterparts. They also reported that religion, caste, education, occupation, and household wealth play a pivotal role in their choice of method among the women. The wealthier section of clients uses modern methods in preference to sterilization.

Most participants found that education of women has a significant and positive association with longer second birth intervals in Bangladesh. Urban residency has been associated with a longer first birth interval as the women tends to be better educated, they shared. Only a small number of women was reported by the participants to have continued their education after marriage. Finishing school after marriage is an indicator of a strong motivation to defer childbearing. Most participants suggest that education is a factor influencing fertility and childbearing timing among the women.

6.4.2 Factors of adolescent pregnancy and its impact on FP services

The trends and factors affecting adolescent motherhood can be determined from the opinions of the participants. Some argued that despite the substantial reduction in total fertility in Bangladesh,

adolescent fertility is still high, and this can be attributed to the failure to prevent child marriage on the one hand, and the low engagement with FP methods by adolescent mothers, on the other.

Lack of knowledge about contraceptives posed as another reason for pregnancy at such an early age for the participants. Couples, certainly newlywed couples, have minimum understanding of various contraceptives/methods suited for their specific age group. Awareness is increasing, although contraceptive use is found have stagnated in last decade. Participants shared that misconceptions and the lack of proper understanding about contraceptives among the users need to be addressed to reduce adolescent pregnancy.

The participants also shared that the married adolescents are not fully aware of the methods. Most of them get their information from their friends, sisters-in-law, or other relatives following their marriage. They also reported that method specific knowledge on the use of contraceptives is not clear among the wives. One participant shared:

> *Couples got conceived may be in their first coitous of marriage life. Some women also perceive that prolonged use of injectables at the earlier years of conjugal life might cause infertility (Female School Teacher).*

The participants shared an interesting cultural/social phenomenon which compels the adolescents to decide on childbearing soon after their marriage, despite the couples' original intention to delay a pregnancy.

> *The in-laws of the couples, especially mothers-in-law become more imposive with the couples to go for childbearing so that they can see the face of their grandchild. The adolescent married woman has to prove the society that she has the physical capability to be pregnant and become a mother soon after marriage (Imam Chattogram).*

This social phenomenon is very popular in the community. Again, it has been found that husbands and in-laws, with their different opinions on the timing of childbearing, influence the decision to defer pregnancy among the mothers. They are likely to prefer an early pregnancy, in conflict with the women.

Most of the participants identified maternal and child mortality as the worst outcomes of adolescent pregnancy. As most of the adolescents are not physically mature enough to bear the pregnancy, they experience various pregnancy-related complexities which consequently lead to maternal and child mortality in the country. One of the major causes of maternal deaths, excessive bleeding during delivery, often happens with the adolescent mothers.

One of the participants shared:

> *As a result, most of them get conceived within 15/16 and I saw the plight of the pregnant mothers with guardians waiting for the boat or ferry to cross the river to visit the doctor at the*

final stage with their labour pain.I saw pregnant mothers dying during delivery as they were too early to be a mother (Female School Teacher, Chattogram).

The participants shared that husbands and family members in the rural areas, in some cases comply with the mothers wish to postpone early childbearing as both the women and family members understand that bearing a child at such an early age could endanger the life of both mother and child.

In the urban areas the awareness is more. In the rural areas, the changes can be seen as well though in smaller scale (Deputy Directot FP ,Dhaka).

However, the participants shared that with the advancement of awareness and knowledge of early pregnancy, maternal and child mortality are contributing to this sociocultural change, despite the slow progress.

Declining health conditions among adolescents is another outcome of early pregnancy, the participants found. It has been evidenced that some of the adolescents become mothers to more than one child during their teens, which is very alarming for their health. Some participants also found that poor health condition of the adolescent mothers is one of the reasons their husbands enter into multiple marriages or divorce.

One of my students from a poor background got married without our knowing before appearing the Secondary exam. She became mothers of 3 children within her 20s. She had poor health. Later she discovered that her husband is having married life with another new wife(Female School Teacher,Chattogram).

Some of the participants shared that they found women would postpone their first pregnancies, primarily for health reasons, and secondarily, to have some time to adapt to the unfamiliar atmosphere and their role in the husband's family.

One of the policy level participants clarified the complex and unusual phenomenon of FP in some regions of the country where there is high child marriage/low fertility and low child marriage/high fertility.

It's a unique thing, a paradox quite unexpected but happening. The answer is like that though adolescents are getting married for various socio-cultural reasons, they are self-motivated or service providers are able to make them aware that they don't need to have babies so early. So automatically fertility is deferred. Or if they have first baby earlier, they are motivated to prolong the second baby which is also deferring fertility. So in these cases despite the child marriage fertility rate has been bridled to a tolerable level, not going beyond as it was expected. On the other hand, other part of the country they don't have so much child marriage but for

some socio-cultural reasons they are not deferring the pregnancies, So reverse things happen here, not so much child marriage but usual with more childbearing norms.

One of the participants demonstrated the societal change occurring with the adolescents in the North-West of the country due to advancements in girls' education, unlike the eastern areas which contribute to the high marriage/low fertility phenomenon:

At Lalmonirhat/Gaibandha [Western part] I found high school girls going to school using bicycle. The girl is from a lower middle class family and she has the intention to study more and more to get a higher status in the society. This trend is not even expected in Sylhet and Chittagong area in Bangladesh. Education leading to women empowerment is making it possible to have a family with low fertility even though they are getting their daughter married relatively earlier than legal age of marriage ((Director ,Dhaka).

6.4.3 Contraceptive use and Islam

Using FP methods in the light of Islam has been found to be a debatable issue among the participants. Although the FP practitioners tend towards a moderate view about access to FP contraceptives, the religious leaders/Imams are found to have very different opinions about the use of contraceptives.

One of the religious leaders highlighted that various scholars have different views regarding the acceptance of FP in Islam. The basic FP contraceptive method, known as *Azl* (withdrawal), is permitted in Islam. He shared:

The permanent methods are not permitted if they are done in the excuse of shortage of food, land and financial issue. Family planning methods are permitted if it is for the sake of welfare of the child or mother (Imam Chattogram).

The fundamental belief of Islam proclaims God has assigned the food and resources for every human being before he/she is sent into the world, so any barrier against the natural process of human germination is against Islam, the Imam shared.

In their interviews, the religious leaders made it clear they are against abortion in the light of Islam, unless it is performed on medical grounds in order to safeguard the mother's life. One of the participants expressed his opinions:

Abortion is not permitted if zygote is created with life. It is equal of killing the embryo. Abortion is discouraged when life is not created but shape of the child is created. If shape is not created at all, abortion is permitted in Islam (Imam,Narsingdi).

Apart from this, some scholars opine that at the early stage of the embryo, abortion is permitted. Before the creation of life for the embryo, abortion is permitted, the religious leaders concluded in their opinions.

The participants among the FP practitioners shared that MR is permitted in the government's FP programme up to a maximum of eight weeks into the pregnancy. They shared that the pregnancy may be terminated by abortion if it crosses the maximum time limit of 12 week into the pregnancy.

One of the policy level FP practitioners shared that MR contributes to the low level of fertility increase, despite the high level of adolescent marriages in the country.

> *MR is popular among newly weds to terminate an unwanted pregnancy. Despite negative notions about MR in the community, the women know about this procedure (whether septic or aseptic), and they prefer to use MR because they believe they are not in a good physical or financial condition to carry the child (Director FP Dhaka)..*

6.4.5 Providing contraceptives to young unmarried adolescents

Most of the practitioners and community leaders expressed their views disfavouring any decision to provide government contraceptives to young unmarried adolescents as this could create grave social unacceptance and disorder.

Based on the sociocultural context, the clinical, non-clinical, and other sections of participants, disfavoured distribution of contraceptive to unmarried adolescents.

One of the community leaders deemed:

> *Existing law doesn't allow distribution govt contraceptives to the adolescents due to strong social and cultural bonding. Moreover the abundance of govt contraceptives will accelerate the social delinquency with high rate of pregnancies and abortion which will, in most cases, defame the adolescents in a patriarchal setting(Community Elected Leader, Chattogram)*.

One of the HO level policy makers, with a long service record at field level, critically analysed the transitions FP had undergone in terms of the sociocultural and religious barriers faced over the last four decades. and claimed that FP has now settled into its present position with good outcomes from the programme, in spite of the hurdles.

> *Any hasty decision of distributing the government contraceptives to the adolescents ignoring the sociocultural values could be disastrous at present situation with a good position in FP. So before we take any decision for FP we will have to evaluate the social values. Still with all the recent development in FP in last 3/4 decades, social structure is still religious and cultural value based which we shouldn't dare to endanger ((Director, Dhaka).*

Prescribing contraceptives/oral pills to regularise menstruation is a common practice among physicians. Other than on medical grounds, it should not be welcomed, one of the participants believed, as it may have an adverse effect on existing values in the community, which Bangladesh society is not yet ready to accept.

Few FP practitioners favoured providing public contraceptives to adolescents based on the transformation which has occurred recently in society due to the impact of social media.

> *In this age of internet and smart phones almost all the nook and corner in the society adolescent girls are having all types of adult contents which invoke them and in fact, adolescents' safe or unsafe relations are being materialized Family Planning Officer, Chattogram).*

From this point of view, few participants favoured the idea of catering FP services to the adolescents to avoid disastrous outcomes from pregnancy. However, the participants also shared that the adolescents can access private commodities on the open market with no restrictions, despite the unavailability of government contraceptives due to the sociocultural context.

6.4.6 Measures to reduce adolescent pregnancy/marriage

The participants emphasised raising both social and legal awareness to prevent adolescent marriages. The elected community leader commented:

> *Legal intervention has been found to reduce child marriages, however, social awareness has been prioritised as most of the factors influencing the adolescent marriage and pregnancy are the outcome of socio cultural and religious issues. The government should conduct courtyard meeting with the presence of Local women Representatives with the women community members(Community Elected Leader,Narsingdi).*

The male members of the community should also attend these awareness meetings to highlight their role in society. Some participants favoured raising the legal and social awareness campaigns simultaneously to discourage adolescent marriage in the community.

Religious impediments can be eradicated by programmes which raise awareness, with the presence of religious personalities to clarify the issues of FP in the light of Islam, the participants emphasised. Education and women's autonomy also help women to escape the barriers of religion. The Islamic system of *purdah* (veil) is a form of ideology that restricts women in the community from reaching their reproductive goals and contraceptive behaviour.

A female schoolteacher of participants commented:

> *In the urban areas women have independent mobility. If the women are facilitated to move from one place to another to visit friends and relatives, their likelihood of using the contraceptives to avoid childbearing and unintended pregnancies increase (Female School Teacher).*

Some of the participants shared that fake birth certificates issued by the elected local government representatives to validate under-aged adolescent marriage is also a concern in the community. However, recent digitization of birth certificates has narrowed this possibility. The participants admitted

it had been a very common phenomena to issue fake birth certificates, which encouraged adolescent marriages.

Again, a field level participant highlighted the importance of the newly introduced 'adolescent corners' in the UHFWCs

> *They are providing all the necessary information to the adolescents regarding changes at puberty, menstruation cycles, side effects of puberty maintenance of hygiene during menstruation, child marriage, and the adverse effects of child marriage both mentally and physically (FWV Chattogram).*

In this way, the adolescents should be kept aware of all these issues, the participant agreed.

Some participants pinpointed that awareness programmes against early marriage and pregnancy, with the presence of all the representatives of society, should be strengthened. A community leader participant suggests:

> *Family planning became a successful campaign in the early 90s when it got a broader support from all sphere of people in a society like politicians, policy makers, academics, health professionals and even the marginalized section of the society (Elected Community Leader,Chattogram).*

6.4.7 Summary

Adolescent marriage, and its direct consequence of early pregnancy, are pivotal parts of the discussion shared by the participants in the present context of FP in Bangladesh. The sociocultural and religious barriers, urban-rural background, and wealth, each play a pivotal part in reducing early pregnancies. All these factors have far-reaching detrimental impacts, not only in widening the gaps in FP service provisions for adolescents and married women, but also making the child and maternal mortality issues more acute. The detailed discussion connects the research question regarding adolescent pregnancy and its linkage to infant and maternal mortality.

6.5 Quality of care, skill increase, and unmet need

This section details the importance of quality FP services to uphold the preferences of the service seekers. The participants explored how quality services in FP are often compromised or breached, and are seldom ensured, upholding the client choices and rights. This entails the participants' observations on how increased skills can lead to quality FP services.

The participants shared their deep insights and opinions about how quality issues have been compromised, breached, and at the same time ensured, in FP at the field level. They also tried to explore

the reasons they believe quality is being hampered and showed some of the ways to ensure better quality in FP.

6.5.1 How is quality of services compromised?

Unavailability of clinical staff at the facilities has been identified as one of the major barriers to ensuring quality, according to the participants. One of the district level FP practitioners commented:

> *We are even struggling to ensure the minimum services for the potential clients due to the lack of sanctioned posts in the facility, ensuring quality is a Utopia to us most of times (Deputy Director, FP).*

The other FP practitioners evaluated how clients can be deemed to be dissatisfied with services due to the lack of follow up visits as a service provider is not available regularly. The participants highlighted the importance of follow up visits to ensure QoC.

Lack of proper screening is an issue raised by the FP practitioners, occurring as result of the shortage of staff. The FWVs are reluctant to maintain the strictly prescribed screening protocol as they have to meet the targets given by their supervisors for increasing the number of users.

One of the physician FP practitioners spoke of this issue as it compromises quality.

> *If a FWV wants to insert IUD with a client, she will have to follow a long checklist. She will have to make sure if the client is medically, physically, and mentally eligible for taking IUD. FWV is bound to take BP, menstrual history, any illness of the client, any lower abdominal pain experienced by the client. But we can easily say that following all the criteria in above three grounds, very few FWVs maintain all these long lists of eligibility criteria of IUD. Rather they go for inserting the IUD in the body of the client just basing on some superficial primary checking (Medical Officer,Narsingdi).*

Some of the clinical participants shared that the providers sometimes disregard the comfort or discomfort associated with certain methods for which the method lacks sustainability. They might also disregard the client's preference in adopting a method most suitable for her.

Thus, quality has become an important issue nowadays, the participants shared. Sustaining the IUD/Implant methods has become a top priority to ensure quality due to the lack of side-effect management, according to the clinical participants.

> *We find that the client is not happy both physically and mentally visiting the centres to remove the IUD/Implanon within 2/3 months of fixing the method. In fact, these are happening all over the country (SACMO,FP,Chattogram).*

The participants added that they are now focusing more on ensuring the quality of the services. The participants from FP discussed that some of the screenings, such as blood pressure measurements, breast or pelvic examinations, may be taken but cannot be deemed mandatory for the safe use of hormonal contraceptive methods. Yet, they also shared that the guidelines are suggested by WHO globally and monitored by the National Technical Committee (NTC) of FP, locally. When asked what they think about the long screening processes, the clinical staff who are lower in hierarchy claim to be in dilemma, suggesting reductions of the screening procedures.

> *Some among the series of screening processes can be revised not compromising the quality of care among the clients (Director FP, Dhaka).*

By contrast, the medical graduate practitioners (physicians) emphasised the importance of maintaining the strict screening protocol.

Apart from proper screening and the shortage of required staff, the existing staff are not using their allocated accommodation on the upper floors of the facilities, meaning the facility is out of service outside of daytime working hours. This is happening even in some of those centres selected to be open 24/7 and is a result of either poor conditions in the facility or negligence of the clinical staff who do not want to live in the facility accommodation.

Maintaining the client's ability to attend around the clock follow up visits after the method insertion is important to ensure quality of FP care. Lack of follow up about the side effects after a method insertion also contributes to the increasing poor quality of services. Unfortunately, unavailability of staff at the service centres, and the clinical staff not using the available accommodation, is resulting in failure of 24/7 services for clients.

Lack of awareness about FP methods, along with method failure knowledge, also contributes to poor quality of services for clients. The interviewed FP practitioners placed responsibility for this on the service providers, in some cases, as they give less time counselling clients about method failure. The clients also have poor understanding of the issue.

> *Some clients make mistakes like breastfeeding as an antidote to pregnancy. But the breast-fed mother doesn't know if the breastfeeding doesn't occur 12/14 times (at least once in every 2 hours) in whole 24 hours the mother again can be pregnant. Mother may fall sleepy at night for longer period and unknowingly becoming pregnant with intercourse with partners (Director FP,Dhaka).*

Side effect management of methods, another critical issue responsible for the poor quality of services, has been identified as the outcome of a lack of screening and poor counselling about methods before insertion of an IUD, the policy level FP practitioners shared. The participants who are providers

confessed that some minor side effects of certain methods are disregarded by the provider as knowledge of such may lead a service seeker to discontinue a method which is actually suitable for her.

Sharing proper knowledge and information about the side-effects of the methods by the service providers to the clients can reduce the side-effect issue to a minimum, tolerable level. Sometimes the providers themselves lack proper knowledge about side effects or hide them from their clients. One of the physician practitioners remarked:

> *For example, during inserting Implanon when I ask various questions to clients I surprisingly discover that the client wasn't given proper briefing or the service providers somehow managed the client to fill their targets (Medical Officer,Narsingdi).*

Mistrust also arises, some of the FP practitioners observed, and aggravates QoC. They also shared that they often discover clients are not being provided with all the necessary information from the providers and are sent to the doctors without in-depth information about a specific method.

The participants shared that the clients look for adequate information about side effects of various methods and the providers comply, even though the clients are found to be less interested. This really reinforces the importance of discussing, explicitly, the side effects of contraceptive use, e.g., the changes in menstrual timings due to the progestin-only methods or gaining weight as a result of using the oral pill. It has also been found that the providers should be concerned about various side-effects of the methods among the clients so that the clients feel that their concerns have been addressed. Providers failure to do so may breach the trust the clients have in them.

The participants shared that Health and FP community-based staff motivate various methods among the clients to fulfil their stipulated targets set by the programme personnel, even by misleading the clients with other options of FP methods.

One of the participants argued:

> *Clients' choices and options should be given priority in any situation to ensure the quality of services. It should not be comprised as the lame excuse of fulfilling the targets set by supervising authority (Deputy Director, Dhaka).*

Misconception, or fake rumours, about methods is another issue the clients suffer from, this is the outcome of low-level knowledge of contraceptives among the clients and poor counselling by the service providers, the FP practitioners shared. This aggravates the service quality.

One of the facility-based service providers who inserts these methods for clients, shared the interesting beliefs some clients have about contraceptives:

Some clients believe the IUD would travel to the stomach and other parts of the body from its placement at uterus. One of the commonest beliefs is that using the contraceptives by the newly married couples would turn to infertility in the long run (Family Welfare Visitor, Chattogram).

The participants reported that the women also perceive that prolonged use of injectables in the earlier years of conjugal life might cause infertility. Younger women believe that injectables are suitable for women having two children. Several women think that condoms are the best contraception method for the migrant husbands visiting their wives. However, some deem them a health hazard, destroying their very purpose by leaking.

Another major setback is the currently bad conditions of the infrastructures which are being exploited by the so-called 'private clinics and hospitals'. There is an allegation that these private organisations even try to poach government staff by providing them financial incentives to discourage their clients from going to government hospitals, so eventually government clinics and hospitals struggle to function.

They have already created paid middlemen who convince the clients/patients to the private hospitals. Eventually poor people are compelled to go to private hospitals (Deputy Director FP).

This malpractice can ruin the harvest of the government's FP programme, generally, and the government's healthcare system, specifically. Some corrupt and degenerated staff in the lower hierarchy are responsible for this as those with higher authority make no inspection of the whole system. Their poor performance with the equipment and poor attitude towards clients compels the clients to go to private hospitals.

One of the veteran FP practitioners revealed a faulty purchase policy which handicaps the rural centres in their function:

The autoclave machines which are procured run with 440kwv lines but in most of the UHFWC electric lines are 220kwv. It means that they are not functional at the proper place. The generator machines are not button or auto started, rope driven generators sent to the UHFWCS where the old service provider cannot start it by himself. Sometimes the rope is torn during the starting of the generator (Deputy Director FP).

Client flow is discouraged in FP centres with this existing situation.

Another example of difficulties is in the DDS (Drug & Dietary Supplements) kit box in which there are 21 items of medicines with different expiry dates. The practitioner commented:

The last expired ones are mentioned on top of the box. But after opening the box it is revealed that most of the medicines expired quite earlier (Deputy Director FP).

The whole purchase policy at HO is faulty and sometimes corrupted, some of the policy level participants deemed.

Again, some of the participants raised the faulty procurement of Implanon, one of the hormonal methods offered, for increasing side effect problems which aggravate quality issues. One of the practitioners shared:

> *The clients are not happy about stopping the supply of 1 rod Implanon by the Head Office. 1 Rod Implanon was very popular with the clients with less side effects. But after certain period Government stopped procuring 1 Rod Implanon and started to procure 2 Rod Implanon (Deputy Director FP).*

Since the inception of the 2 Rod Implant method, participants report that it is not so popular with the clients due to its side effects. This is a wrong decision by the FP department and is contributing to the deterioration in the quality of services.

Some participants raised the issue of the dominance of private/commercial contraceptives over public sector supplies on various grounds. Community people may have the wrong idea about the quality of free government FP products compared to those provided by private/commercial organizations. The government's marketing policy should be smart, like the private organisations, and should highlight that the government's contraceptives are of high quality, participants believe this will increase their use among clients.

One of the male Upazila level managers was surprised by his own field research finding in a specific area, he said:

> *60% clients are taking public contraceptives and 40% are taking contraceptives especially 3-month 'Somajet' injection from private organizations. For Condom and ECP (Emergency Contraceptives Pill) the ratio reaches more than that, almost close to 60% to 70%. The quality of the contraceptives are same but the users may be more attracted with the presentation or advertisement of the contraceptives (Family Planning Officer, Narsingdi).*

Private/NGO-provided contraceptives are easily accessible at anytime, based on the flexibility of the clients. Some clients pay for private contraceptives, rather than risking experiencing the unavailability of service providers and other hazards, to acquire free public contraceptives. An effective advertising policy and ensuring round the clock government service providers will increase the demand and efficiency of the government contraceptive provision among marginalized clients, they remarked.

Declining community visits and lower priority given to FP services in the CCs have been identified by the participants as one of the factors contributing to the poor quality of FP services.

> *We are serving at CCs simply as an associate force, not meant to be there to provide FP services directly or as a priority. As we are an associate force at the CCs, clients are not fully motivated to take FP service after the general treatment (FWA, Chattogram).*

If both static centres (community visits and serving at the CC) operate simultaneously, then it is expected the clients are properly served with a FP method. In this way, the quality of services automatically falls down. The participants also shared about making a functional way out of FP service provision in the CCs in the existing modality FP service provision.

6.5.2 How do skill increases contribute to quality?

The participants shared various issues regarding their training, which is not regular, and which lacks basic job-related knowledge and information, making it sometimes ineffective in increasing their skills. All the mentioned issues are pertinent and directly linked with the service quality of FP.

The following information by a FP practitioner bears testimony to what happens with skills training and how effective it is for the service providers:

> *As FP recruit the 10th graders for the fieldworkers, their skills cannot be upgraded to the desired level even though they are given in service training by the graduate doctors. Secondly after the recruitment they have to wait 1/2/3 year or even 5 years to get their basic 2 months training. In the meantime, they learn from their senior cohorts in the field which are not adequately informative, in most cases. Thirdly, they are sent to some training centres where they are given the job training, of course, by the senior officials, most of them are not with a portfolio related to field work (Family Planning Officer, Chattogram).*

The basic field training often lacks the proper skills about how to conduct the field activities or how to fill in the reporting forms, but most importantly, trainees are not attached to any field orientations where they can test the knowledge learned in training.

One of the participants emphasised the importance of providing up to date technical knowledge to the providers so that they can counsel the knowledgeable couples with other ways.

> *Some of the high educated couples are reluctant to take counselling from less educated field staff as they think that field staff are not knowledgeable enough to counsel them (Female School Teacher,Narsingdi).*

This also happens in some cases, the participants observed.

Introducing digital technology to ensure the quality of services is becoming more popular with the advent of smart phone technology, according to the participants who shared their experiences. One of the practitioners reported:

> *Some of the FWVs are doing this. In their smart phones they have registered the mobile numbers of the potential pregnant mothers. They are making phone calls to the others if some of them missing their visit to the FWC for checkup. Sometimes we also make some sample phones to others to double check the information if the clients have been served by relevant FWV. They can also call the husband if the wife doesn't possess a mobile (Deputy Director, FP).*

Strengthening this activity by employing more new initiatives of smart phone use can increase the quality of services, participants added.

The participants also shared that the FP department is going to be going paperless to ensure better quality of service to the providers in various other ways, such as the using TAB (laptop instead of paper register) instead of the Couples Register (list of all couples in an area) , sending reports digitally instead of using hard paper copies, etc. So, the participants reiterated the importance of training to be adapted to these changes, which is happening slowly. Skills increase is vital in rendering quality services to the service seekers (participants shared).

> *Technological developments are happening every day, so the fieldworkers need to be updated with the rapid changes with the new training need. FWAs are using Tab side by side their Registers in order to be converted to a paperless service system they need to be integrated with the digital format of Registers and other manuals (Deputy Director, Dhaka).*

FWAs recruited earlier have some adaptability problems with the new technology, but the new, younger recruits are mostly coping well with the technological shift.

One of the policy level practitioners working at the HO of FP shared that apart from the regular training, some of the community level staff should be given additional basic training for conducting normal deliveries, this can make the facilities more functional and service-friendly with their additional help to the pregnant mothers.

> *Some of the fieldworkers need to be trained with some basic knowledge and understanding of deliveries. Because if the deliveries are done at the facilities, the facility automatically becomes popular among the community people (Deputy Director FP).*

One of the field level staff echoed the need for the additional training related to normal deliveries and clinical issues to assist the physicians and FWVs to increase the level of quality.

6.5.3 Summary

Despite the importance of the QoC issue, it has been evidenced that the burning issues have not been resolved at the various crucial phases of contraceptive uptake, such as preferences, counselling, and insertion stages, rather they are compromised. Shortage of clinical staff infused with proper technical knowledge about contraception has been found to be the main reason. Lack of effort in upholding the choices for clients and lack of proper management of the side effects of various contraceptives are making the services poorer for the clients. Innovation in awareness programmes can stimulate the very poor male contribution in contraceptive use which is aggravating initiatives to increase CARs. The increasing trend of using private sources for contraceptives, against using public sources, will continue as the community visits have declined substantially. Packaging and marketing policies for government contraceptives need to be reshuffled to increase access for marginalised people in the community. Revising the purchasing policy centrally is urgent to ensure QoC by reducing the low standard of contraceptives and equipment in the facilities all over the country. As abortion is legally not conducted, reporting is unauthentic. However, MR is found to be increasing, which may have a positive impact on fertility. Finally, the various issues raised by the respondents are directly, or indirectly, associated with the research questions in various ways. For example, faulty purchase issues or popularity of the contraceptives from commercial organisations are related to the QoC issue, while MR and abortion are related to the adolescent pregnancy issue. However, the issues raised by the respondents are found to be imperative for ensuring QoC for service seekers, upholding their rights and preferences based on their sociocultural context. The final research question of the project was found to be aptly addressed by the views of the respondents.

Chapter 7 Discussion on the findings

7.1 Introduction

This chapter focuses the discussion on the quantitative and qualitative findings and the accompanying theoretical underpinning I initiated in Chapter 2, the Literature Review. It aims to integrate the quantitative with the qualitative findings to address the research questions posed in Chapter 1. The search for answers to these questions highlights the major findings.

Table 18: Table Joint Display of Integration/Inferences for Explanatory Sequential Design

Quantitative Results	**Qualitative follow-up interview explaining quantitative results**	**How qualitative findings help explain quantitative results**
Fertility, contraceptive use, and unmet need are slowly progressing. Decline in community-based visits, high levels of child marriage, high levels of adolescent pregnancy are evidenced. Women's empowerment and education are associated positively with increased contraceptive use and low U-5 child mortality.	Respondents' data gathered from opinions and views demonstrate the reasons for poor field visits, poor function of facilities, child marriage, and adolescent pregnancy. Quality of services compromised due to shortage of service providers and other socio-cultural reasons.	Quantitative findings have been explained by qualitative findings, mostly. Qualitative findings helped to address some of the issues not answered by the quantitative data. Qualitative findings filled gaps in the quantitative data. Integrations were made in the mix of both datasets. Any single method may have failed to answer all the research questions.

Source: Adapted from Creswell (2022,p.101)

I used Creswell's (2022) joint display of integration template to show how the integrations are produced from the mixed approach to the quantitative and qualitative data in an explanatory sequential design. Creswell suggested to use this to draw conclusions from each data type, defined as meta-inferences. Attempts to draw meta-inferences demonstrate that the value of the mixed method approach to research not only depends on what is learned from the qualitative and the quantitative data, but also on what is learned from their combination, or integration (Creswell, 2022). Creswell and Tashakkori (2007) suggested that when writing up mixed method research, the task is not simply to report the two distinct 'strands', but also to integrate, link, or connect these 'strands' in some way (p.108). If the integration is not done, the success and efficacy of the study will be limited, they added. They also added that the

integration may be performed in the form of comparing, contrasting, building on, or embedding one type of data with the other. Creswell and Clark (2018) suggested that the discussion not only suggests an integrated analysis, but that it also tries to relate to the literature, brings attention to the limitations of the research, puts forward some recommendations, and suggests areas for future research.

Based on the individual research questions, this discussion chapter integrates the two types of data to demonstrate how much my findings address the individual research questions, and how much the integration was able to answer each research question.

7.2 Regional differences in unmet need

This section discusses the first research question of the study:

How do the regional differences in unmet need occur and how can they be minimized?

Unmet need for FP is often defined in survey data by calculating the percentage of sexually active women who prefer to cease childbearing, or who want to delay the time of their next births for least two years, yet do not report using any modern or traditional FP contraception methods (Kols, 2008).

7.2.1 Causes of Unmet Need

The almost plateauing situation of unmet need (12%) during almost all of one decade, and the slow decline to 10% seen in the most recent BDHS in 2022 (NIPORT et al., 2023) is a policy concern for FP. Along with sociocultural impediments exposed by the respondents in their interviews, they argue that to explore the causes of unmet need, both the role of the FP service providers and that of the clients are important.

Sociocultural impediments have been identified as increasing the gap of unmet need in various social settings. It is a taboo in the existing sociocultural setting as the newly wed bride has to prove that she is capable of being a mother with reproduction soon after marriage, despite having the intention to delay the first birth. Couples have to bow down to the pressure from in-laws to provide grandchildren within one or two years. Despite rapid sociocultural advancement in recent times, religion remains important, especially in the less educated, rural areas, where couples are negligent in their use of contraceptives due to their strong religious beliefs (Raza et al., 2012). This is a big barrier to solving unmet need, despite the decreasing impact of religion which is a result of expansion of education and increased levels of awareness.

The clinical issues related to unmet need tend to be more aggravated after the deliveries, it has been evidenced. Respondents emphasised the need to ensure round the clock presence of the service providers so that the gap in contraceptive need can be met during the risky time after a delivery. In the context of

unmet need, it is considered to be 10-12 % during the interval period, but this rises to more than 40% during post-partum FP. With a view to reducing unmet need by at least 50%, it is necessary to ensure around the clock presence of service providers. Every delivery, every complication of method, will have to be supplemented with a suitable FP method in a timely manner. Follow up with proper counselling will have to be ensured, otherwise the client will discontinue the method, which adds to unmet need. Whatever the situation, without ensuring round the clock presence of the service providers, unmet need cannot be fully addressed. Gulley et al., (2011) recommends integrated health services as a convenient way of addressing the unmet need of women. For example, if a woman is offered a FP method after an abortion, that will surely save her from repeat abortions. Ensuring the suggestion is fully integrated with policy implementation which can reduce unmet need.

Siddiqua and Kabir (2004) point out that it is mostly socio-cultural reasons, such as existing misbeliefs and taboos about contraception and lack of information about different methods for specific age groups, which have a role to play in the failure to use any method. There are few hard-to-reach areas in the whole country, but lack of sincerity and dedication, alongside unavailability and negligence among the FP field staff are mainly responsible for this. Lack of seriousness resulting from the ignorance of clients often causes the problem as well. For example, if a mother experiences fever, she will do everything possible to collect paracetamol, but if her stock of the Oral Pill is finished, she might not have same level of seriousness.

It has also been highlighted as another critical issue that the measurement of unmet need, where both public and NGO/private services overlap, shows an absence of demand, even though it is actually fulfilled but not reflected in the government stock. If this can be solved, it may help policy makers to formulate policy planning with the real picture of unmet need in the community corresponding with the service rendered by both GOs and NGOs.

7.2.2 How can unmet need be minimized?

Another important issue regarding the supply side, as it has been rightly mentioned, is that the FP department has a huge supply of stock, but as 33% or more of service providers posts are vacant in the rural areas, the clients are out of reach of the supply source. Ignorance makes the issue more severe. The public sector can also encourage the private sector to use private practitioners or promote initiatives such as the social marketing of condoms and oral pills (Philipps et al., 2003). A fine tuning of public/private collaboration may eliminate the economic disparities in contraceptive use and unmet need (Agha & Do, 2008). Such collaboration is working; however, it needs to be strengthened to maximise the CAR. Poor policy planning, such as implementing the same type of awareness campaign all over the country, often fails to cater for the unique and specific needs of some regions, like Sylhet and Chattogram where sociocultural and religious behaviours are not favourable for encouraging the FP programme. The indigenous populations, with their diversity of languages, are really decreasing and

their habitats are being inhibited by the mainstream plain land people in the Chattogram Hill Tracts areas. So, awareness campaigns in the mainstream Bangla language which highlight the small family norm will not work there. However, HO level policy planners are yet to formulate a unique campaign which will highlight the issues in their mother tongue. Rigorous experiments reveal the fact that carefully chosen and well implemented interventions can reduce the unmet need for FP. Re-designing the service delivery systems can increase contraceptive use, lowering the unmet need, even in rural areas with low literacy rates and high levels of poverty (Philipps et al., 2003, 2012).

The respondents highlighted geographical variations as one of the reasons of unmet need. A recent study (Khatun & Mollick,2020) is also aligned with another study (Khan et al.,2022)which revealed that socio-economic and demographic trend of contraceptives use varied in various geographical locations in Bangladesh.They recommended policy initiates addressing the specific needs of the regions of showing variance of unmet need.

Some interesting deeper views and opinions have been exchanged about the existence of unmet need, even on the plains which are apparently more easily accessible areas that are covered by the service providers. The issue was raised about the huge number (four million) of adolescents working in the garments industry. When the garment workers leave home for work is the time the service providers visit, when the workers return home, the service providers finish their work, thus they never meet one another. Despite the unavailability of FP staff in the urban/city areas, the adolescents working at the garment factories are compelled to be alert by using the contraceptives for their own accord as an unwanted pregnancy will cause them to lose their job. Some of the factories remain reluctant to comply with maternity leave regulations. El-Saharty et al., (2014) suggested a sustained increase in fertility through increased access to, and provision of, FP contraceptives among the hard-to-reach areas, and those lagging behind others, by expanding the supplies and services of FP longer-acting and permanent methods.

Apart from the unmet need in the garment industry, it has also been shared that there are urbanized/ city areas where unmet need is being created due to the absence of government FP staff, especially in the densely populated slum areas. The reason for this additional large pocket of unmet need in the urban slums and city areas is that, programmatically, FP field staff are not recruited there. The staff come under the jurisdiction of the Local Government division, which does not have FP staff. Some of the NGOs registered with the FP Department are providing FP services in these areas, but compared to the huge population the service providers are few and the quality of services is not up to the mark.

7.2.3 Summary

The common perception of having unmet need in the hard-to-reach areas has been reinterpreted in various other ways. Unmet need does occur, even in moderately provider facilitated areas, for various reasons for which both the service providers and the service seekers are liable, followed by socio cultural

and religious reasons. The critical and in-depth analysis of unmet issues not only addresses the project's first research question but also argues that policy formulation needs to be initiated to address the complex dynamics of unmet need. Theoretical reviews are found to be aligned with the qualitative findings, while the quantitative findings laid the foundation to investigate the issues more deeply from the qualitative findings.

7.3 Community-based home visits, functions of facilities, and unmet need

This section of the discussion is based on the second research question of the study:

> *To what extent do the limitations of community based female workers' house visits and poor functioning of facilities contribute to unmet need for Family Planning?*

Community based female FP workers' home visits were initiated in the government's FP programme in 1976 with the recruitment of the first batch of 10,000 female FWAs, which reached up to 30,000 in the early1990s (Phillips et al., 1996). Each FWA was assigned 600 eligible couples and would make her round of visits to each couple once in every two months. FP experienced a climax in the number of home visits made in the early 1980s to the late1990s. Community-based home delivery is thought to be the contributing factor to the rapid decline in fertility (from 6.3 in 1975 to 3.3 in 1991-93) (Cleland et al., 1994; Schuler et al., 1996; Phillips et al., 2003). Community field visits were halted fully by a government initiative during a five-year policy plan, the HPSP 1998-2003, which integrated the FP and Health Departments, resulting in the full suspension of home visits from 1997-2003 (Phillips & Hossain, 2003). Again, reinstated field visits started declining from 2008/2009 onward with the government's recommissioning of the CCs, a Health infrastructure (with presently more than 14,000 clinics, each one for 6,000 of the population) all over the country. At this time, FP field workers were assigned three days at CCs, very recently reduced to two days (MEFWD, 2022).

Home visits were identified as one of the major pillars of success in FP in Bangladesh in the last four decades. It has been evidenced that the high total fertility rate (TFR) of 6.3 in the mid-1970s (Caldwell et al., 1999) declined sharply to 3.3 in the mid-1990s (reported in the BDHS in 1996-97), almost half of the previous rate within two decades, before it settled at 2.3 in the BDHS of 2011(NIPORT et al.,2014)

7.3.1 Why are female field workers significant to the FP programme?

The importance of the engagement of female field workers in the programme is a widely discussed issue, not only in Bangladesh but all over the world. Prata et al., (2005) closely reviewed CBD activities over three decades and found the importance of CBD programmes in the hard-to-reach, rural areas in the developing countries to still be high in terms of increasing the CAR, along with other FP outcomes.

One of the major successes of the CBD programmes is the judicious selection of FP and Health workers, mainly midwives and traditional birth attendants within the community, who are respected as health leaders (Phillips et al., 1999). The clients, mostly women in most of the FP programmes, are likely to show interest in receiving reproductive healthcare from female CBD agents, and women are more likely to provide services to the women in CBD programmes rather than in fixed, static clinics (Askew, 1989). A study in Bangladesh showed that the women who are served by female CBD agents are likely to use double the number of contraceptive methods than those served by male agents (Phillips et al., 1993).

Simmons et al., (1988) probably best narrated the interface between a female FP worker and rural women in Bangladesh. They argued that female workers contribute to the FP programme in various ways, including their role in:

(1) reducing fear of contraceptive technologies;

(2) addressing and overcoming the religious barriers, child mortality risks, and high fertility preferences;

(3) mobilizing male support.

They made the important point that the female workers' role transcends the boundaries of what is conventionally implied as the role of a supplier of contraceptives. The female can be an agent of change to help shift reproductive decision-making away from passivity. She can also expose women clients to their long seclusion by the Islamic system of *purdah* (veil) to the modern notion of deliberate choice.

A number of studies reveal that if the women are facilitated with autonomy to move from one place to another to visit friends and relatives, their likelihood of using contraception to avoid childbearing and unintended pregnancies increases (Rahman, Mostafa & Hoque, 2014). Arends-Kuenning (2001) found that female workers' visits reduce contraceptive costs and potentially increase contraceptive demand. Oliveira et al., (2014) found that religion, caste, education, occupation, and household wealth play a pivotal role in choosing the methods among the women. The Muslim women, for their religious affiliation, were found to choose more traditional or temporary methods. The female community workers can contribute more to shifting them to more modern methods in such a socio-religious setting.

Prata et al., (2005) took some selected countries with large rural populations and showed some interesting differences in levels of modern contraceptive use and unmet need for FP services in rural areas. Bangladesh and Indonesia, two relatively low unmet need countries, have the larger share of modern contraception from CBD programmes. In contrast, most of countries with a lower share of modern contraception from CBD programmes have a higher percentage of unmet need in the rural demographic setting. This is a clear indication that CBD programmes run by the females have made a contribution to the increase in CAR and can continue to do so.

Joarder et al.(2020) also credited the success story of Family Planning to the field level workers of Family Planning.Warwick(2023) recently described the culture of management of family planning programmes where the contributions of the community level FP field workers have been acknowledged.

On the other hand, the opinions and views provided by a large number of participants in the interviews also reinforce the importance of female workers contribution in FP found in the background literature. In the purview of the socio-cultural-religious setting of the community, the participants emphasised that the declining trend of field visits, for various reasons, can make the previous success of FP challenging against the backdrop of slow progress, or a stagnant situation, among almost all the determinants of FP in last decade.

Based on the above background literature and the participants' views and opinions, there is no denying the fact that the contribution of the female workers in FP programmes remains relevant and unalienable today.

7.3.2 Policy issues to minimise gaps in FP services.

Important policy issues regarding the increase of service gaps have been pinpointed. A large pocket of unmet need occurs in the urban slums and city areas as, programmatically, FP field staff are not recruited there. Some of the NGOs registered with FP are providing services in these places, but compared to the huge population the service providers are few. So, unmet needs are there. Participants also raised the issue of poor policy plans, such as implementing the same type of awareness campaign all over the country in Bangla, this often fails to cater to the unique and specific needs of some regions, like Sylhet and Chattogram Hill Tracts, where indigenous people have their own languages. Ignoring their unique languages and their sociocultural norms in FP campaigns did not have a positive outcome, the participants shared. Area based local initiatives will be fruitful and effective based on the need of the clients. The regions with high unmet need to be monitored and classified so that policy level initiatives may be implemented, the participants recommended. Philipps (2007) also found that rigorous experiments reveal that carefully chosen and well implemented interventions can reduce unmet need for FP. Redesigning the service delivery systems can increase contraceptive use, lowering the unmet need, even in the rural areas with low literacy rates and high levels of poverty.

Disruption to the supply chain, not as a result of running out of stock but due to staff shortages, is aggravating the unmet need issue in some places, it has been found. The service seekers are meeting their need by collecting contraceptives from private sources. The service providers are unable to distribute the contraceptives according to their targets. So, unmet need is created, although realistically the demand has been fulfilled. The practitioners highlighted this critical issue about overlapping services, they believe it may help policy makers to formulate policy planning by having the real picture of unmet need in the locality corresponding to the service rendered by both public and private organisations. It has been recommended that the public sector can also encourage the private sector to

visit private practitioners or promote initiatives such as the social marketing of condoms and oral pills (Jones et al., 2003). The BDHS of 2022 reports that the private sector (60%) and NGOs (3%) have already surpassed the public sector (37%) as the source of contraceptives as the government has encouraged private companies to supply them (NIPORT et al., 2023). A fine tuning of the public/private collaboration may eliminate the economic disparities in contraceptive use and unmet need (Agha & Do, 2008).

An increase in the number of home visits could increase the use of facilities in various ways. Managing side-effects, raising awareness about various misconceptions regarding methods, and motivating the clients to use LAPMs can all be done from the facilities, thereby narrowing the unmet need. Home visits can expedite all these services in the government facilities. It has been evidenced that facilities with institutional deliveries are better functioning as people have trust in the facilities which also cater for ANC, PNC, and general treatment as the by-product of deliveries. Various reviews suggest the public sector can collaborate with the NGO clinics to give more choices to women with improved quality of services. At the same time, they can shed the huge burden of the public sector by encouraging the middle class and those more affluent people to enjoy relatively shorter wait times and better quality of services. In this way the government sector can put in place more resources and better-quality services to the poor and underprivileged (Dayaranta et al., 2000).

As Health Department CCs are now a reality and the FP Department is not able to withdraw field staff from a CC, it is recommended that inter-ministerial coordination and decisions can make CC FP services more functional and effective with the Health services provided by Health professionals, this has been proposed in the population policy of 2012 (MOHFW, 2012). On this existing reality, it cannot be denied, both FP facilities and CCs need to be integrated to ensure both FP and Health services are delivered to the community. El-Saharty et al., (2014) also recommended the coordination of service deliveries and cross-referral between FP and Health departments through the CCs. However, the integration is still not working due to the lack of initiatives. It has been evidenced that women who are offered routine vaccinations and check-ups for their children, can be asked what FP services they may be interested in hearing about. Examples say that 43% of clients have an unmet need for any of the modern contraceptive methods and 40% of them adopt a method the very day they are asked (Solo, 1999). In fact, FP services at the CCs are now experiencing this modality of service approach where patients/couples are offered counselling and methods after the treatment is done.

Prata et al., (2005) suggested the modality of community-based fieldwork to be the core responsibility of the programme personnel who must determine which mode of delivery is more feasible in a given community. It is suggested that based on the models of existing FP programmes, the community field work modality can be streamlined. They also suggest community-based field programmes to partner

with like-minded organisations which provide almost the same kind of service in the arena of FP (e.g., women's health care, family health care, and obstetrics services).

7.3.3 Summary

Both community visits and facilities are part and parcel for the formidable success of FP, as demonstrated in Bangladesh. The participants highlighted the impact of the poor field visits and low functioning of the FP infrastructures by exploring the root causes active behind them. Shortage of field staff (especially in light of the increasing population), engaging the FP staff in responsibilities other than their primary responsibilities, and policy planners giving less priority to FP community activities have been identified as some of the major reasons for the decreasing trend in community visits. Facilities have been found to be under-utilized, or moderately utilized, due to shortages of clinical staff, poor conditions of the infrastructure, social/cultural/religious reasons, and lack of awareness. The limitations aggravated the provision of FP by widening the existing gaps, making the services poorly available to the service seekers. With a view to minimizing the existing gaps by making the field visits and facilities more functional and effective, some policy interventions have also been put forward by the participants. It is expected the implementation of the policy interventions will help narrow the existing gaps in FP, making the services available to the service seekers and reducing the unmet need to a tolerable level. The second research question of the project was addressed by the survey data and respondents' opinions discussed in this section. The literature review on community-based fieldwork has made a direct linkage with access to FP contraceptive use and services, evidenced in the interview findings from the respondents. This question is well addressed by the integration of the mixed method data analysis approach, aligned with the conceptual evaluation in the literature review.

7.4 Needs, preferences, and choices of contraception, and women's autonomy

The section addresses the third research question:

How are decisions around needs, preferences, and reproduction made and negotiated within and beyond the family?

This section critically evaluates the contraceptive needs and preferences of married women and how these preferences are influenced inside and outside the family, based on the quantitative and qualitative findings. It also discusses how decisions around reproduction are made or negotiated within and beyond the family, and how women's autonomy influences the contraceptive uptake decisions made by the women.

A woman's own health care, major household purchases, and visits to family or relatives are identified as three specified decisions for measuring women's empowerment in the BDHS of 2017-18 (NIPORT et al., 2020). Fewer than two thirds of women (59%) responded that they participated in all three decisions, either alone or jointly with their husbands. Around every four out of five (80%) among the currently married women, make the decision about FP jointly with their husbands, while just 16% of women make the decision on contraceptive use independently. Although women's empowerment might not have a direct effect on the mean ideal number of children, it does have an impact on the reduction in U-5 child mortality (44/1000) and the increased use of FP methods (64%), and it helps to meet the gap in unmet need (11.3%) for the women who participate in all three of the decision-making measures.

Couples use contraceptives to limit or space the number of children in their family. The CAR is 64% among currently married women (aged 15-49); 55% of women use modern contraceptives, and 9% use traditional methods (NIPORT et al., 2023). The BDHS in 2017-18 reveals that more than one-third (37%) of users of the contraceptive methods stop using them within 12 months of starting. Discontinuation rates are reasonably higher with temporary methods, like condoms (40%), pills (34 %), and injectables (25%), than other long-term methods like implants (7 %). The pill, injection, IUD, implant, and sterilisation are the different methods available to women, while men are limited to the use of condoms and sterilisation. The participants revealed how married women carry the burden of contraception use, with poor contributions from their male partners they face external and internal influences regarding contraceptive preferences and often have poor understanding about contraceptive efficacy, but above all, they need to understand that autonomy for women can place them in a better position for contraceptive decision-making.

7.4.1 Poor understanding about contraceptives

Contraceptive choices are still not available for all sections of married women in the community, it has been found as a general observation. A lack of contraceptive knowledge among the potential users, as a result of both providers and users' ignorance, has been pinpointed by the participants as a problem. A great number of adolescents are unable to access the current level of contraceptive coverage once they are married. After marriage some want to delay pregnancy, but unfortunately, they are not aware of how to do so.

It has been found that a good number of adolescents become pregnant at their first coitous after marriage. Apart from this, poor understanding about the efficacy or failures of methods also contributes to the lack of proper knowledge about contraception. The participants shared that breastfeeding could act as a method to avoid pregnancy, however, breastfeeding needs to be done every 2/3 hours,10/12 times in 24 hours. If the child falls asleep at night for a longer period, and the couple has intimate relations, this can be regarded as method failure with pregnancy as an outcome, most couples are confused by this, it has been evidenced.

Poor understanding about contraceptives not only occurs among less educated couples, but also among the highly educated, which can lead to disastrous outcomes. One of the clients with four children intended to terminate her fifth pregnancy. When asked about using a method before the intercourse which resulted in pregnancy, the highly educated client responded that her husband used a condom. However, it was reasonably suspected that the husband might have used a condom occasionally, without having knowledge of a safe period for non-use. Khan et al., (2016) found that withdrawal and safe period as traditional methods are understood by the wives, but most of the clients possess incorrect ideas about the very meaning of 'safe period'. They also found some of the women having unintended pregnancies chose MR to avoid future pregnancies. However, it was evident that they prefer planning a method with contraception, rather using MR.

7.4.2 Male involvement in contraceptive use

Male involvement is a burning issue in the attempts to increase contraceptive use among the clients. Almost all the participants shared that male involvement in contraceptive use is really poor compared to their female counterparts due to various sociocultural reasons and, of course, for the limited number of contraceptives available for the males to use.

Males are not interested in sterilisation for sociocultural reasons and are also reluctant to use condoms, which are considered as probably the best method with the least side-effects for both partners. Just 8% of couples using the modern contraceptives found the males to be using condoms in the BDHS of 2022. So, the lion's portion of the load concerning contraceptive methods falls to the women, the participants found. Becker (1999) clarified these differences when analysing the DHS data of three countries—Bangladesh, Zambia, and the Dominican Republic—and agreed that men had been outside of the FP programme as there are fewer methods for them to use themselves (just condoms or sterilisation), thus it is the women who take the lion's portion of the burden of using FP methods under the medical model of contraception.

Husband/wife consultation is another issue regarding the sustainability of contraceptive use by reducing the discontinuation issue, but is found to be poor, the participants shared. Despite the rise in the number of girls in education and improved female empowerment, such consultation is not expected to reach a satisfying level. Again, patriarchy and the financial capability of the males contributes heavily here, working against the consultation process.

In most cases, the husbands are buying the contraceptives/pills without even consulting their wives about their choices. The wives might have some physiological problems which might deteriorate with the use of contraceptives, but this cannot be addressed when husbands are buying them the contraceptives. The men do not even want to consult their wives. They have money and they are deciding the methods for their female partners to use with which the female partners are expected to comply. The participants were found to be somewhat convinced with the low increase in male sterilisation due to the sociocultural

setting, but they were concerned for the decline in male condom use. It has been proved that, apart from providing contraception, condoms act as a barrier against STDs for both partners and, most importantly, they give the women the flexibility to not use contraceptives themselves on the grounds of possible side-effects (Hossain, 2003). Bajos et al., (2003) found that condom use, and the withdrawal method require mutual support and self-control from the male partner.

Uddin et al., (2016) explains that husbands' absolute control over decision-making may limit wives' authority over financial resources, consequently barring their access to reproductive health care services and resulting in poor use of contraception. Kabeer (1999) showed that decisions made jointly between husband and wife have potentially more positive outcomes compared to single partners independent decision-making. It is also suggested that in the context of South Asia, women's autonomy does not fully work alone, rather it is embedded with the cultural values of mutual dependence within the families. Becker (1999) highlighted spousal disagreement and lack of communication between husbands and wives regarding using the contraceptives poses to be a challenge aiming at the ultimate reproductive goals.

One of the findings from a participant who worked on a survey project regarding male participation in contraceptive use is worthy of mention here. This interesting incident portrays the mindset of the males regarding the use of contraceptives by their wives in a semi-urban area. When asked about their wives' contraceptive issues, they were not interested in any discussion. They used the Bangla term "*meyeli masala"*, which means "women affairs", and they were not in a mood to speak about women's matters as they consider contraceptives use is not a matter to be discussed openly.

Most of the FP practitioners and other stakeholders highlighted the low contribution of males in contraceptive discussions and argued that they could contribute more in various ways, they would not even have to accept the methods directly; they could support their wives in adopting FP methods, giving them money to buy the contraceptives they prefer, and discussing the issues if one method does not suit their wives. In various ways, they can motivate their wives to ensure the sustainability of contraceptive use by them.

Some participants put forward some insightful views which seem to be unique and thought provoking in light of making males more inclusive in their share of contraceptive activity. One of the policy level FP practitioners urged the formulation of an innovative counselling strategy for the males, so that their thoughts regarding FP can be better understood, to make them more inclusive in the process.

The participant suggested that it is, in fact, the providers' responsibility to motivate the husbands with proper knowledge of contraceptives and how they can contribute to the process with their wives. There can be less denial of the fact that enough materials are not found, either in advertisements, or even in the institution, which are addressed to male involvement in FP contraception. What the participants recommend echoes Becker's (1999) suggestions for mass media campaigns with specific messages

aimed at the males to encourage their contribution to reproductive health issues and the use of contraceptives, acknowledging their poor participation. Becker (ibid.) hopes that such campaigns can raise awareness among men and ensure equal opportunities when considering family size with their spouses. Gribble (2003) recommends that the male field workers act as a catalyst to increase male participation in FP activities as most of the FP programmes around the world have failed, or struggled, to increase the share of responsibility taken by males. This suggestion by Gribble (ibid.) can be replicated fully by strengthening the field level inspection of the Family Planning Inspectors (FPIs), who are mostly males and are the supervising authority of the female FWAs.

7.4.3 In-laws' influence in contraceptive preferences

In-laws, especially mothers-in-law, play a role in influencing married women in their contraceptive use; a widely discussed issue throughout the history of FP, it has been informed. A mother-in- law's role at the initial stage of community visiting for FP in the early 1980s/1990s was demonstrated as discouraging, rather a challenge for FP at that time. They used to impose mental pressure on the newly wed daughters-in-law to bear a child soon after the marriage so that they can see the grandchild before their death. They were not positive about methods used by newly married couples because of their incorrect perceptions that accepting any method could lead to infertility**.** However, this negative behaviour has mostly been replaced with a more moderate, if not fully positive, role enacted by the mothers-in-law as a result of the advancement of education for girls and FP awareness campaigns in the community.

Findings from Uddin et al., (2016) show that it is a tradition in the rural areas for mothers-in-law to live with newly wed couples and thus have relatively more control over the daughters-in-laws' reproductive decision-making. Son preference is another trait in the agrarian families as sons are viewed as a potential labour force and future financial shelter as parents age. As a result, mothers-in-law also used to act as a barrier to daughters-in-laws' desires to limit their childbearing, longing for a grandson, which is gradually decreasing. Asadullah et al.(2021) in their study found that despite having the decline in fertility, son preference is still prevalent but with steady decline among the women which is aligned with Uddin et al.(2016).

7.4.4 Peer influence in contraceptive preferences

Peer effect was found to be very functional among the married women regarding continuing or discontinuing the contraceptives. Neighbours sharing their comfort, or discomfort, about using a method influences clients more than the motivation from FP professionals. Even in the case of switching to injection or other long-acting methods, sharing information with neighbours influences their decisions over and above professional counselling. Darmawan and Dartanto (2019), in their study, showed that household decisions about whether or not to use contraception has been influenced by the peer effect and by the behaviour of the surrounding people. Dehlendrof et al., (2016) showed that discussing the

use of contraceptives with supportive peers encourages their motivation for contraceptive choices. Women who frequently discussed the use of condoms with their peers, girlfriends, or mothers, show an increased likelihood to become a consistent user of condoms with their partners (Forrest & Frost, 1996).

Peer effect works both positively and negatively, it has been evidenced. However, the participants noted its negative effect more, which is very concerning for the FP programme as most of the hormonal methods have more or less side-effect. IUD users may experience bleeding when beginning its use, this type of news spreads quickly to other potential users. As a result, practitioners have to face challenges with new clients. Unfortunately, the older users discontinue the methods as well due to the side-effects, the participants found. Darmawan and Dartanto (2019), in their study, identified that if most of the group members have already adopted a contraception method, the other members do not want to be left out, thus the bandwagon effect means they soon join the same group.

Using satisfied clients to motivate potential new users is good practice as it works better than professional counselling. However, participants found the clients in the rural areas are not interested in being exposed in front of others, which makes the campaign more challenging. Despite the challenges of being exposed, the participants expressed optimism to use motivated peers to influence others positively.

7.4.5 Influence of FP professionals

The role of community workers in influencing the clients in accepting FP methods has also been shared by good number of participants as motivating, not as imposing. They provide the clients with all necessary information so they can come to a decision on their own.

The participants also shared that the influence of field workers among the clients is relatively greater in the rural areas compared to urban settings. Dehlendorf et al., (2013) suggest that the service seekers can expect intimacy and adequate method related information from the service providers. They can explicitly accommodate and entertain the preferences of clients. If the assistance reflects the client's concerns and preferences, the involvement of the service providers can be taken as a positive initiative, they added. Women's choices and preferences are found to be diverse and contextualized. Women value the autonomy of undirected choices. At the same time, they encourage personal intimacy, and supportive relationships with FP providers who value the individual preferences of their clients (Dehlendorf et al., 2016).

Upadhaya (2001) suggests the providers provide information to the clients which will help them come to a decision about their choice of method. However, when women look for greater engagement with the providers, they find it difficult to choose. Makaoul and Clayman (2006) suggest a shared decision-making approach which caters both to the expertise of the provider as a clinical expert and to the client as the expert of her own values and choices.

7.4.6 Women's autonomy and contraceptives choices

Empowerment or autonomy of woman is an important factor impacting contraceptive use among the married women. The BDHS of 2017-18 reports that empowered women have lower fertility rates and higher contraceptive use compared to those with less autonomy (NIPORT et al., 2020). A review by Upadhyay et al., (2014) about women's empowerment and fertility suggest that women's empowerment has an association with lower fertility, longer birth intervals, and lower rates of undesired pregnancy overall, in most South Asian and African countries.

One of the participants made an interesting observation regarding fluctuating empowerment issues based on the age of the married women. The prime time of pregnancy is generally between 18-30 years when, unfortunately, the married women are not empowered to make decisions. After this period some women become empowered in their family life, however, they do not have to exercise this in most cases as they have completed their childbearing in the meantime, the participant observed. The prime time of pregnancy has been evidenced in the survey data, however, the idea of them having completed their childbearing by the time they achieve autonomy, which the participant suggests, is unevidenced, although it provides information about the sociocultural phenomenon of the study settings.

Education has been found to be associated with women's autonomy or empowerment which has a direct linkage with women's liberty and access to contraceptive use. It has been evidenced that better educated women are more likely to access contraceptives than those with little or no education at all. Schuler et al., (2010) pinpointed education as one of the indicators of women's empowerment.

One of the district level managers revealed the government initiatives to promote education for girls, this has been found to be effective in delaying adolescent marriage. Of course, the girls are now getting education, scholarships, and motivation money at secondary school level, which is a great boost to defer their marriage and, consequently, their first pregnancy. Women with secondary school education have lower fertility than those with lower than secondary school education in the BDHS in 2022 (NIPORT et al., 2023). Freedom of choice of contraceptive is still limited among the women but is found to be gradually widening with the advancement of education and autonomy, an outcome of education, the participants shared.

Most of the participants shared that married women with a sense of autonomy can at least exercise their freedom of choice of contraceptive, generally. Khan et al., (2016) finds that the decision-making for adoption of contraception was generally mutual. However, the wives mostly decided which method should be taken, which one is most suitable, and when to take it. This does not mean that the males, with their imposing choices, were found to be absent, but such impositions were few.

Some of the observations made by the participants critically described the dynamics of women's empowerment in various layers. Again, it is complex, some of the working women, especially in the garment industry, or with a low income, are not empowered enough to make the decision fully. It is true

that they earn money, but perhaps the husband is not interested in using condoms or wants his wife to use any other method.

However, it is true that this infuses some sense of bargaining power in the women, it has been argued. It has been evidenced that income inequality often leads the women to be dependent on male partners, which make it challenging for them to negotiate in condom use (Gutierrez & Gillmore, 2000).

Working women are found to be more cautious and concerned about their pregnancies compared to their counterparts who stay at home with no engagement in income-generating activities, generally. One of the participants simplified this, claiming that empowered married women are in a far better position than those who are simply housewives to make their own choices. This is very simple as women working in any type of income-generating activities have to cope with their free time for childbearing, so they do not make the decision abruptly, rather they think twice before deciding on pregnancy as they have to manage both family and work life. The notion of consensual ideologies (Rosenthal & Levy, 2010) tends to denominate women's participation in coitous relationships, which endangers the control of their fertility regarding the use of contraception (Pratto & Walker, 2001).

It has been evidenced that access to contraceptives has not yet been ensured fully to all sections of women in the community. The percentage of women with access to contraceptives is also a complex situation with challenges in maximising the benefit of contraceptive use due to ignorance about efficacy and confusion over which method to select as the most suitable. The influence from inside and outside the family contributes more to place the married women in a vulnerable situation when making their choice of contraceptive.

7.4.7 Summary

A critical issue shown in the analysis concerns autonomy and how it impacts contraceptive choice behaviour in a specific sociocultural and religious setting. It shows that the patriarchy and sociocultural impediments make contraceptive selection for the married women harder. However, the rapid advancement of education and contraceptive awareness has made the present situation more congenial compared to the inception period of FP, which has been argued and evidenced in this section. The critical evaluation of women's empowerment and other sociocultural factors in the literature review are found to demonstrate the positive correlation of women's autonomy and contraceptive prevalence in the community. Both the survey and interview data, in a combined way, were able to address Research Question 3 of the project in a more detailed way.

7.5 Adolescent marriage and pregnancy, maternal and child mortality

The fourth research question is addressed in the in-depth discussion in this section.

How is adolescent/early pregnancy a significant factor in FP services linked to maternal and child mortality?

It has been evidenced both from the survey and interview data that teenage marriage and teenage pregnancies are a concern for the FP programme. The data show every two out of four (50%) adolescent girls are married (BDHS, 2022) before the legal marriage age of 18 years (NIPORT et al.,2023), this has been singled out by the interview respondents as one of the major barriers to the reduction of child and maternal mortality. Teenage pregnancy is found to be declining slowly—at 33% in the BDHS of 2007, 28% in the BDHS of 2017-18, and 24% in the BDHS of 2022.

7.5.1 Adoloscent Pregnancy

The mean age of marriage for women and their preference for a first pregnancy in MacQuarrie et al.'s study (2015) were found to be 15 and by 17 years old, respectively, which indicates that adolescents are becoming mothers despite continuous efforts from programmatic support. Barot (2008) found adolescent fertility alarming as the largest portion of adolescents are entering into their reproductive age at a time there is enormous demand for services and care, which is deemed to be challenging. Demographers have found that the populations with a higher age of marriage have lower fertility as the higher age of marriage lowers the reproductive age span (Abedin, 2011; Ertem et al., 2008). It is also found that if non-marital births are low or negligible and marriage is universal, then delaying the marriage age has a contributory effect on the reduction of fertility (Bongaarts, 1999; Hirschman 2001, Timaeus & Moultrie, 2008).

High numbers of child marriage are likely to increase fertility, and low numbers of child marriage lower fertility, however, the reverse situation is happening in Bangladesh, a situation well-articulated by the participants. They shared that although child marriage happens due to various sociocultural reasons, married adolescents delay pregnancy. Even so, births do occur as the result of child pregnancies, but the effect of child marriage is not so adverse to the fertility rates, most participants concurred with this. One of the participants demonstrated the societal change occurring with the adolescents in the Northern part of the country due to advancement of girl's education, which has also contributed to the high marriage/low fertility phenomenon.

Maternal and child mortality have been identified as the worst outcome of adolescent pregnancy. As most of the adolescents are not physically mature in their pelvic expansion to bear a pregnancy, they experience various pregnancy related complexities which consequently lead to unfortunate rates of maternal and child mortality in the country. One of the major causes of maternal deaths is excessive bleeding during delivery, which often happens with adolescent mothers. MacQuarrie et al., (2015) found that husbands and family members are, in most cases, not in compliance with the mothers to postpone

early childbearing as both the woman and family members clearly don't understand that bearing a child at such an early age could endanger the life of both mother and child. However, it has also been shared that with the advancement of awareness and knowledge of early pregnancy, maternal and child mortality are reducing, notably.

Religious impediments can be eradicated by raising awareness programmes with the presence of religious personalities to clarify FP issues in the light of Islam, the participants emphasised. Education and its outcome, women's autonomy, also help women to resist the barriers of religion. The Islamic system of *purdah* (veil) is a form of ideology which restricts the women in Bangladesh from reaching their reproductive goals and contraceptive behaviours. One of the reasons for the under-utilization of the FP community facilities has been identified as the women not being completely open-minded to share their reproductive needs with the male service providers in absence of a female one. A number of studies reveal that if the women are facilitated with autonomy to move from one place to another to visit friends and relatives, their likelihood of using contraceptives to avoid childbearing and unintended pregnancies increases (Rahman, Mostafa & Hoque, 2014). Oliveira et al., (2014) found that religion, caste, education, occupation, and household wealth play a pivotal role in choosing the methods among the women. Wealthier sections of clients use modern methods over sterilization. The Muslim women were found to choose more traditional or temporary methods due to their religious affiliation.

Islam et al., (2017) analysed the trends and factors affecting adolescent motherhood and argued that despite the substantial reduction in total fertility in Bangladesh, adolescent fertility is still high, and this can be attributed to the failure to prevent child marriages on the one hand, and the low use of FP methods by the adolescent mothers, on the other hand. The participants shared similar experiences which resonate with Islam et al.'s (ibid.) findings. Covid-19, according to the respondents, aggravated the adolescent marriage situation in the rural areas as some parents found it a better option to get their daughters married than to remain idly at home without education during two years of lockdown. The latest BDHS in 2022 reports that half of the adolescents are married within 18 (50%,) slow progress compared to 59% in the BDHS in 2017-18.

Lack of knowledge about the contraceptives was given by the participants as another reason for pregnancy at an early age. Couples or newlyweds bear minimum understanding about various contraceptive methods best suited to their specific age group. Awareness is increasing; however the contraceptives acceptance rate is found to be stagnant over last decade. It has also been shared that misconceptions and lack of proper understanding about contraception, generally, need to be addressed to reduce adolescent pregnancy. MacQuarrie et al., (2015) disclose that women experience conjugal life with little practical knowledge of contraception. The BDHS in 2014 shows that less than one third (33%)

of the women aged between 15-19 have been informed about contraception either by the media or from the health workers in the community in the preceding month (NIPORT et al.,2016).

Religious dogmatism and education have a reverse correlation to adolescent marriages in the study settings. Relatively increased levels of education for the girls reduces religious dogmatism and, hence, discourages adolescent marriages, a point the participants believe will become prevalent. MacQuarrie et al., (2015) found that education of women has a significant and positive association with longer second birth intervals in Bangladesh. Urban residence has also been associated with longer first birth interval in Bangladesh. The interview data provide evidence that adolescents married before finishing their secondary education have more children and are more prone to pregnancy related complexities than those married after they finish their secondary education. In MacQuarrie et al.'s (2015) study, few women reported to have continued their education after marriage, this was echoed by the interview findings. Finishing school after marriage has been indicated as a strong motivation for deferring childbearing. Thus, education is a factor influencing fertility and childbearing timings among the women.

Again, the participants highlighted the importance of the newly introduced adolescent corners in UHFWCs which are providing all the necessary information to the adolescents regarding physical and mental changes at the age of puberty, menstruation cycles, maintenance of hygiene during menstruation, child marriage, and adverse effects of child marriage both mentally and physically. So, the adolescents should be kept aware of all these issues, the participants shared. MacQuarrie et al., (ibid.) suggested programme personnel should initiate such efforts so that the adolescents/young women may be assisted to achieve their fertility desires by delaying marriage beyond the legal minimum marriage age.

The corrupt practice by local government leaders in the community of issuing fake birth certificates to validate adolescent marriage, and also to overrule legal initiatives, has been identified as a barrier in the way of reducing child marriages. However, due to the digitization of birth certificates the practice is found to be decreasing against the backdrop of raised social and legal initiatives.

Some participants pinpointed that awareness campaigns against early marriage and pregnancy with the presence of all representatives of society, especially the female representatives, should be strengthened. Lee et al., (1998) suggest that FP is found to be successful when campaigning for it has broad support from all spheres of people in a society, including politicians, policy makers, academics, health professionals, and the more marginalized.

Catering to the young unmarried adolescents with government contraceptive supplies was a sensitive and debatable issue, most participants shared. Most, at both field and policy level, expressed their views disfavouring any such decision of initiating contraceptives to the young unmarried adolescents as it

could create grave social unacceptance and disorder. They deemed that existing law does not allow the distribution of government contraceptives to the adolescents due to conservative religious, social, and cultural bonding. Moreover, the sociocultural and religious transitions FP has undergone in the last four decades, and the present position with some good outcomes from the programme overcoming the hurdles, cannot be endangered with such initiative. The abundance of government contraceptives will accelerate social delinquency with a high rate of pregnancies and abortion which will, in most cases, defame the adolescent girls in a patriarchal setting.

Few participants (if not many) favoured providing public contraceptives to the adolescents based on the social and technological transformation which has occurred recently due to the impact of social media. In this age of internet and smart phones in almost all corners of society, adolescent girls can access all types of adult content which may invoke them and in fact, adolescents' safe or unsafe physical relations are being materialized. From that point of view, few participants favoured the idea of providing FP services to the adolescents to avoid the disastrous outcome of pregnancy.

It has also been shared that prescribing contraceptives/oral pill to regularise menstruation is a common practice among physicians. Other than on medical grounds, this should not be welcomed, one of the participants shared. However, the adolescents can access private commodities in the open market without restriction, despite the unavailability of government contraceptives due to the sociocultural context.

7.5.2 Contaceptives use and Islam

Using FP methods in the light of Islam is a debatable issue, according to the participants. Although the FP practitioners express moderate views about accessing FP contraceptives, the religious leaders / *Imams* are found to have quite different opinions.

One of the religious leaders clarified that various Islamic schools have different views regarding the acceptance of FP in Islam. The basic FP contraceptive known as *Azl* (withdrawal method) is permitted in Islam, but the permanent methods are not permitted if they are used as an excuse due to the shortage of food, land, and finance. Family planning methods are permitted only if it is for the sake of the welfare of the child or the mother.

The religious leaders who were interviewed are against abortion in the light of Islam, unless it is performed on medical grounds in order to safeguard the mother's life. One of the *Imams* expressed his opinions about abortion, saying it is not permitted if the zygote is created with life, this would be the equivalent to killing the embryo. Abortion is discouraged when life is not created but the shape of the child is created. If shape is not created at all, abortion is permitted in Islam. Apart from these instances, some scholars have the opinion that at the early stage of the embryo, abortion is permitted. Before the creation of life of the embryo, abortion is permitted, the religious leaders concluded. What the

participants shared are aligned with Roudi-Fahimi (2004) who detailed the permissibility of contraceptives in Islam demonstrating various school of thoughts. Roudi-Fahimi (ibid) hinted the politicisation of FP quoting the instance of Algeria and Iran of 1970s/1980s who dismantled FP programme against political and religious controversies. However, Iran at present has the highest CAR among the Muslim countries.

Latest study of Shabuz et al.(2022) is in consistent with another study by Islam et al.(2013) in Bangladesh which found that muslim women are likely to have more unmet need compared to non-muslims women due to their religious affiliation which reduces the use of contraceptives.

7.5.3 Summary

Adolescent marriage and its direct consequence, early pregnancy, are pivotal parts of the discussions the participants shared in the context of FP in Bangladesh. The sociocultural and religious barriers to reducing early pregnancies have been highlighted so that the factors can be addressed with proper remedies. All these factors have far reaching detrimental impacts on widening the gaps in FP service provisions, making the service acute and unavailable to the adolescents.

The BDHS data provided adolescent marriage, adolescent pregnancy, and child mortality related graphical presentation of the data, with which the opinions and views of the respondents have been found to be consistent. Moreover, the conceptual views developed in the literature review also echo the findings from the data analysed in the mixed approaches and are able to address the Research Question 3 of the study.

7.6 Quality of care, skills increase, and unmet need

Introduction

The final research question of the study is covered in the discussion in this section.

How can increasing the quality of care narrow the gap between demand and offer of Family Planning?

Ensuring service quality in FP is a burning issue nowadays. Jain and Hardee (2018) suggest that although the quality of services have become a matter of discussion since the ICPD in 1994 and continued to guide the FP programme since then, the 2012 London Summit on Family Planning reinforced the importance of QoC and rights-based programmes that uphold the needs of clients.

7.6.1 Importance of quality of services

Over nearly three decades, from the early 1960s to the late 1980s, the FP programme was meant to address issues related to population control (Seltzer, 2002). In 1990, Bruce pioneered an innovative

Quality of Care Framework for Family Planning services aimed at ensuring quality of services provided to clients by caregivers (Jain & Hardee, 2018). Popularly known as the Bruce/Jain QoC, this framework, upholds clients' preferences in adopting FP services primarily, but with integrated issues. The six elements of the QoC framework are as follows:

- clients choose their own FP method (rather than FP/Health personnel telling them which to adopt;
- access is available to information so that the client can make their own informed choices;
- the professional competencies of the service providers is ensured;
- interpersonal communication is maintained so that the service providers treat the clients with respect;
- follow-up mechanisms are established; and,
- an appropriate cluster of services is available (providing clients a with a choice from among a range of services).

7.6.2 How is quality of services compromised?

The participants shared their deep insights and opinions on how quality issues have been compromised or breached, and at the same time have been ensured in FP at field level. They also tried to explain the reasons for quality being hampered and expressed some of the ways they can ensure quality in FP.

Unavailability of clinical staff at the facilities has been identified as one of the major barriers to ensuring quality, according to the participants. One of the district level FP practitioners commented that they are even struggling to ensure the minimum FP services for potential clients due to the lack of sanctioned posts in the facility. Bruce (1990) argues that quality has been synonymously taken as the availability or accessibility of contraceptives and technical sophistications of the equipment of clinical operations, neglecting the interpersonal dimensions of care embedded in it.

The other FP practitioners evaluated how service to clients can be deemed unsatisfactory due to a lack of follow up visits as a service provider is not regularly available at the facilities. Jain and Hardee (2018) highlighted the importance of follow up visits to ensure QoC.

Lack of proper screening is an issue raised by the FP practitioners and are happening due to the shortage of staff. The FWVs are reluctant to maintain the strictly prescribed screening protocols as they have to meet targets set by supervisors for increasing the number of method users. If a FWV wants to insert an IUD for a client, she will have to make sure the client is medically, physically, and mentally eligible by checking BP, menstrual history, any illness, or any lower abdominal pain experienced. Very few FWVs maintain all these long lists of eligibility criteria for the IUD. Rather, they insert the IUD based on a superficial primary check.

Some of the clinical professionals shared that the providers sometimes disregard the comfort or discomfort of certain methods for which those methods lack sustainability, potentially increasing the discontinuation rates. Bertrand et al., (1995) defined this as 'providers bias' for encouraging, or discouraging, some specific methods without a sound medical rationale. They might also disregard the client's preference to adopt a method suitable for her.

Thus, quality has become an important issue nowadays, the participants shared. With a view to sustaining the IUD/Implant/methods, QoC will have to be prioritised. This is one of the main reasons why clients are not happy, physically or mentally, and are visiting the centres to remove the IUD/Implant within 2/3 months of its insertion**.** Grimes (1993) suggests that some of the screenings, like BP or serum cholesterol measurements and breast or pelvic examinations, may be taken for further prevention, but cannot be deemed mandatory for the safe use of hormonal contraceptive methods. Cottingham and Mehta (1993) argue that the primary motive behind reducing the medical barriers is to uphold the values of women's autonomy and, thus, their preferences. The aim is to relieve them from undesired, long, and unnecessary medical procedures. Some of the critics against reducing medical barriers doubt that doing so in the name of wider access to FP preferences might compromise QoC as it stresses the number of clients served, rather than the quality of services provided to them. In fact, there is no paradoxical stance between QoC and access to services, and suggestions have been found that improved QoC reduces the number of minor medical procedures.

Maintaining follow up procedures around the clock following the method insertion is important to ensure quality of FP care. Lack of follow up services about side-effects after a method insertion also contributes to increasingly poor quality of services. Unfortunately, unavailability of staff at the service centres, and not using the accommodation by the clinical staff, is leading to failures in 24/7 services at some facilities.

Facilities in the community are found to be unwelcoming due to the shortage of both facilities and clinical staff. Few facilities are found to be overburdened with clients and service providers confessed that clients find staff to be unwelcoming at times as they queue for service. Bertrand et al., (1995) related this with QoC issues about treating the clients disrespectfully, they linked the shortage of facilities with access issues. Although QoC and access issues are meant to be two distinct elements, Bertrand et al., (1995) deemed that access issues are an integrated part of QoC issues. The priorities for each cannot be compromised.

Lack of awareness about FP methods, along with method failure knowledge, contributes to poor quality of services for the clients. Among the interviewees, the FP practitioners place responsibility on service providers, in some cases, as they give less time to clients for counselling about method failure. The clients also have poor understanding about method failure. Bertrand et al., (1995) discussed the issue of

service providers' qualifications as not all the providers are qualified to insert certain methods, like IUDs.

Management of the side-effects of methods is another critical issue responsible for poor quality of services; it has been identified as the outcome of a lack of screening and poor counselling about methods before insertion, according to the policy level FP practitioners. Bertrand et al., (1995) mentioned this in the Quality of Care Framework as *Inappropriate management of side-effects* which may include some minor side-effect of a certain method being disregarded by the provider and leading to women to discontinue a method which may actually be suitable.

Proper side-effect knowledge and information about the methods provided by the service providers to the clients can reduce the side-effect issue to a minimum, tolerable level. Even the providers lack proper knowledge. For example, during insertion of Implant (a long-term hormonal method inserted under the arm) it was discovered that a client was not given a proper briefing, or the service providers somehow managed the client only to fulfil their target.

Dehlendorf et al., (2013) suggest that clients will be looking for adequate information about the side-effects of various methods and the providers will be less interested in providing it. This really reinforces the importance of explicitly discussing the side effects of contraceptive use, e.g., the changes in menstrual timings due to the progestin-only methods or gaining weight by the use of the oral pill. Dehlendorf et al., (2013) also suggest that the providers should be concerned about various side-effects of the methods among the clients so that the clients feel that their concerns have been addressed. Providers failure to do so may breach the trust the clients have in them. Studies show that health and family planning community-based staff motivate sterilization and other methods among the clients to fulfil their stipulated targets given by the programme personnel, even by misleading clients with other options of FP methods (Srinivasaan, 1998).

The QoC framework of Jain and Hardee (2018), in fact, upholds clients' preferences in adopting FP services primarily, alongside other integrated issues. It highlights that the client can choose a FP method of their own choice, rather than FP/Health personnel telling them which to adopt. Yeakey et al., (2009) remarks that improving the quality of services not only attracts new clients, but also reduces contraceptive discontinuation. It is a very sensitive issue if clients are not given enough time to make their choices or if their choices are not prioritised.

Misconceptions, or fake rumours, about methods is another issue for clients, this is the outcome of low levels of contraceptive knowledge among the clients and poor counselling by the service providers, the FP practitioners shared, and this aggravates the service quality. Studies also reveal the fact that women

have misconceptions about side-effects of oral pills, resulting in infertility, but few had experienced or knew someone who actually experienced such a side-effect (Ochako et al.,2015).

Some clients believe the IUD would travel to their stomach or other parts of the body from its placement in the uterus. One of the popular, commonest beliefs is that using contraceptives by newly married couples would result in infertility in the long term. Khan et al., (2016) report that women also perceive that prolonged use of injectables in the earlier years of conjugal life might cause infertility. Younger couples believe that injectables are suitable for women having only two children. Several women think that condoms could be the best contraception method for the migrant husbands visiting their wives. However, some deem condoms a health hazard, destroying their very purpose by leaking.

The following issues are linked to QoC. Firstly, the low functioning infrastructures are being exploited by the so-called private clinics and hospitals. There is an allegation that these private organisations even try to corrupt the government staff by providing financial benefits to send the clients to private hospitals so that government clinics and hospitals struggle to function. They have already created paid middlemen to convince clients/patients to go to the private hospitals. Eventually, poor people are compelled to go to private hospitals. This malpractice can ruin the harvest of the government's FP programme, generally, and its healthcare system, specifically. Some corrupted staff in the lower hierarchy are responsible for this as the higher authorities do not inspect the whole system. Their poor performance with the equipment and poor attitude toward clients compels the clients to go to private hospitals.

Simultaneously, it has been revealed that a faulty procurement policy also handicaps the FP centres with poor functioning. The autoclave machines run on 440kwv lines, but in most of the UHFWCs electricity lines are 220kwv. This means that the machines are not functional in the place they are needed. The generator machines are not button or auto started, but are rope driven and often the service provider cannot start it by himself. Sometimes the rope is broken during the starting of the generator. Client flows are discouraged in FP centres with this situation.

Another example occurs in the DDS kitbox, in which there are 21 items of medicines with different expiry dates. But the last expired ones are mentioned on top of the box. Often, after opening the kitbox, it is found that most of the medicines have expired already. The whole procurement policy at HO is faulty and sometimes corrupt, some of the policy level participants deemed.

Again, it has been revealed that the faulty procurement of Implant, one of the hormonal methods responsible for increasing side-effect problems among the clients, aggravates the quality issue. The clients are not happy about stopping the use of 1 rod Implanon, by FP HO, which was very popular with clients. However, after a certain period of time, the government stopped procuring 1 Rod Implant and started to procure 2 Rod Implant on administrative grounds. Since the inception of the 2 Rod, the report

says that it is not so popular with the clients due to its side-effects. This might be a wrong decision from the FP Department. Bertrand et al., (1995) termed these types of issues as regulatory methods, such as the time consumption involved in the purchase, distribution, or faulty purchase issues. It aggravates the quality, making the clients vulnerable and unwilling to accept certain methods.

The dominance of private/commercial contraceptives over public sector supplies is also a quality issue. The BDHS in 2022 reports that the private share of contraceptive supply is already 60%, a rapid growth. Community people may have an incorrect notion about the quality of free public FP products compared to those provided by private/commercial organisations. The government's marketing policy should be smart, like that of the private organisations, to highlight that government contraceptives are of high quality, some participants believe this will increase their use among their clients.

One of the participants was surprised to see one finding in a specific area that showed 60% of clients are taking public contraceptives and 40% are taking private contraceptives, especially the three-month *Somajet* injection. For condoms and the Emergency Contraceptive Pill (ECP) the ratio differs, closer to 60% to 70%. The quality of the contraceptives is same, but the users may be more attracted by the presentation or advertisements the private services provide. The marketing policies of the private organisations give clients a biased impression that their products are better than government products. The government's advertising policy needs to change in this regard in order to compete with the private organisations. This will increase the demand and efficiency of the government contraceptive service among the marginalized clients, participants remarked.

Declining community visits and lower priority given to FP services in the CCs have been identified by the participants as one of the factors contributing to the poor quality of FP services, FP staff serving in them are seen as an associate force, i.e., not there to provide FP services directly as a priority. If both the static centres (community visits and service at the CCs) are available simultaneously, then it is expected that clients are properly served with a FP method. As they are an associate force at CCs, one cannot expect direct FP services from them with their full motivation. In this way, the quality of services falls down. Prata et al., (2005) suggests that for implementation, funding, and sustainability, organising community-based programmes can be affiliated with national or international organisations. Community visit programmes might partner with like-minded organisations who provide almost the same kind of service in the arena of FP (i.e., women's health care, family health care, and obstetrics services).

7.6.3 How does skill increase contribute to quality?

Although the survey data do not provide straightforward information linking quality with skill increase, the qualitative data raised various issues regarding training, which is not regularly done and which also

lacks basic job-related knowledge and information, making it sometimes ineffective for increasing skills. All the mentioned issues are pertinent and directly linked with the service quality of FP.

As the FP Department recruits 10th graders for fieldworkers, their skills cannot be upgraded to the desired level, even though they are given in-service training by graduate doctors and high-level officials. Secondly, after recruitment they have to wait 1/2/3, or even 5, years in some cases to get their basic two months training. In the meantime, they learn from their senior cohorts in the field, who are not adequately informative in most cases. Thirdly, they are sent to some training centres where they are given on the job training, of course by senior officials, but most of them do not have a portfolio related to field work. The basic field training often lacks coverage of skills in how to conduct the field activities, how to fill in the reporting form, and most importantly, they are not attached to any field orientations where they can test their learned knowledge from training.

Introducing digital technologies to ensure the quality services is becoming popular with the advent of smart phone technology, the participants shared. Some of the FWVs have registered the mobile numbers of potentially pregnant mothers. They are making phone calls to the others if some of them missing their required visits to the FWC for checkups. The supervisors also make some sample calls to others to doublecheck the information if the client has visited a relevant FWV. Supervisors can call the husbands if the wife does not possess a mobile phone. Strengthening this activity by employing more new initiatives using smart phones infuses more skills among the providers, which is found to impact the quality of services for clients.

The FP Department is planning to be paperless, in the near future, to ensure better quality of service to the providers in various ways. Using TAB (laptop-based couple Register) instead of the Couples Register, sending reports digitally instead of hard paper copies, are examples. Technological developments occur every day, so fieldworkers need to be updated with the rapid changes, creating a new training need. FWAs are using TAB side by side with their Registers in order to convert to the paperless service system they need to be integrated with the digital format of registers and other manuals. FWAs recruited earlier realistically have some adaptability problems with new technology, but the newer, younger recruits are mostly coping with the technological shift more rapidly. The infusion with new technological knowledge will boost the confidence of the service providers.

It has been reported that, apart from the regular training, some of the community level staffs should be given additional basic training for conducting normal deliveries and primary clinical issues so that they can assist the physicians and FWVs with normal deliveries. This will make the facilities more functional and service friendly amidst the shortage of clinical staff with their additional help to the pregnant mothers. It has been positively evidenced that providing multiple services to train community level staff and permit them to use basic clinical procedures like IUDs and injectables (Farr, 1998) is good for

FP programmes as it narrows down the referrals, optimizes the scarce resources, and above all, makes the community workers more reliable to the clients.

7.6.4 Summary

Despite the importance of the QoC issue, it has been evidenced that the burning issues have not been addressed at the various crucial phases of contraceptive uptake, such as preferences, and counselling at the insertion stage. Shortage of clinical staff infused with lack of proper technical knowledge about contraceptives has been found to be the main reason. Not upholding the choices of clients and a lack of proper management of the side-effects of various contraceptives, are making the services less effective for the clients. Catering to the unmarried adolescents with FP supplies realistically makes them vulnerable against the backdrop of a conservative sociocultural setting, despite the progress and advancement made in increasing the CAR moderately. Innovation in awareness programmes can stimulate the poor male contribution to contraceptive issues which is aggravating the initiatives to increase CAR. The increasing trend of private organisations as the source of contraceptives compared to the government sources will continue as community visits have declined substantially. Packaging and marketing policies of government need to be reshuffled to increase access for the marginalised people in the community. Revising the purchasing policy centrally is an urgent matter to ensure QoC by reducing the low standard of contraceptives and equipment for facilities all over the country.

However, initiatives for skills transfer with the practitioners are found to be imperative for ensuring QoC to the service seekers, upholding their rights and preferences based on the sociocultural context. Although the BDHS data lacked information relating to QoC in FP services, interview respondents shared various QoC related issues and suggested ways of improvement. The literature review was able to accommodate the diverse conceptual issues of quality related to Research Question 5 which are found to be aligned with the respondents' views.

Chapter 8 Conclusion and Recommendation

8.1 Introduction

The study has investigated the existing gaps in FP services focusing on the unmet need so that it can put forward some recommendations for the policy makers and practitioners to update the service provisions in the country. The study has developed important insights about the diverse contraceptives preferences of women and how these preferences are impacted by the complex socio cultural factors like empowerment, education, religion, place of residence and so on. This chapter summarises the findings to have a closer view discussed widely in the discussion chapter mainly basing on the research questions. Thereafter, the chapter in the light of the key concepts initiated in Chapter two and three demonstrates the crucial contributions and new knowledges added by the study. It also highlights the recommendations basing on the investigation for the FP policymakers and practitioners. It is wrapped up followed by the limitations of the study and further research initiatives which could address the limitations of this study.

Unmet need issue both conceptually and programmatically has been investigated in this study as it is the driving factor of the existing gaps in family planning services. Addressing the first Research Question required to demonstrate the complex dynamics of unmet need in multi-faceted ways. The quantitative data was able to reveal the existing differences in unmet need regionally by its graphical presentations. However, qualitative data, in narrative form revealed the dynamics of unmet need in a bigger dimension focusing on exploring the way out from the problem.

Socio-cultural and religious barriers posed to be the important causes of creating unmet need more in the rural area, qualitative data found. Women's intention to use contraceptives is hampered by the embedded religious belief escorted with numerous cultural reasons and lack of awareness. The impact of religion, education, cast and other socio-cultural factors in contraceptives use of women found by Blanc (2001) and Oliveira et al. (2014) has also been reiterated by the findings of Rahman, Mostafa & Hoque (2014) and Talukder et al. (2020).

Hard-to-reach areas (hills, islands, rivers, slums) and city areas without Government community staffs have reasonable percentage of unmet need. However, misconception regarding hard-to-reach areas with GO-NGO overlapping is also a problem in measuring the unmet need in those areas. Some of the NGO-served hard-to-reach areas without FP community workers are being accounted with having unmet need though the need is fulfilled there with service from NGO. Areas with different demographic trend and with inhabitants of indigenous community who have poor and decreasing population are being catered with same awareness programme of plainland with high fertility resulting no visible changes with the programme outcome. The respondents' opinions here have been reiterated by Philipps et al. (2003,2012)

as well who recommended to redesign the service delivery systems to increase contraceptives use at low educated poverty stricken, and hard-to-reach areas to cater the specific needs.

Garments factories with huge number of adolescents are almost out of the service net of FP community workers due to mismatching of the working hours of both the service providers and service seekers. However, most of the garments are located in urban areas where FP community staffs are not recruited. Some of the recent initiatives of FP department along with the effort from the development partners are supplementing the services at the garments during working hours. The findings of my study regarding the issue have been echoed by Phillips et al. (2003,2012), Agha and Do (2008) who recommended a fine tuning of public-private partnership to eliminate the economic disparities in contraceptives use and unmet need.

The major finding in this section is that it challenges the typical definition of hard-to-reach areas as unmet need was found to be high even in plainland with high accessibility due to various socio-cultural, and administrative reasons. The finding will contribute in policy formulation providing an added information having high unmet need even at accessible areas like slums, densely populated industrial areas.Based on the above context, the thesis also contributes in the understanding of geography by focusing on the individual and spatial variations in contraceptives intake by the women. It contributes substantial advantage by revealing the complexity of surrounding individual and area that influences contraceptive intake behaviour.

The qualitative findings in details support and integrate the quantitative findings which are mostly aligned with the scholastic review conducted earlier in the study. The joint display of the mixed method approach of data analysis succeeded in addressing Research Question 1 of the thesis.

The importance of the field workers particularly the females has been overall emphasised for the past success of Family Planning. However, the specific and unique job accomplished by the females at the community and at the facilities has been evidenced to be instrumental with positive FP outcomes basing on the socio-cultural context of Bangladesh. Especially with a more religious contextualized setting due to the less mobility of the rural women, they have been found to be positive for the programme. Prata et al. (2005) reviewed the importance of community visits, Askew (1989) and Philipps et al (1993) both showed how female based community activities of FP can work better than static clinics. Simmons et al.(1988) perhaps best showed the contribution of female community workers in Bangladesh with their diverse roles. The success of FP programme with the dramatic reduction of fertility (6.3 in 1975 to 2.3 in 2011) and manyfold increase of contraceptives use (8% in 1975 to 64% in 2022) (NIPORT et al.,2014,2023) in last four decades has been credited with the female-labour oriented FP programme in the community level. On the other hand, almost stagnant situation or slow progress with some of the determinants (fertility, contraceptives use, unmet need) has been shouldered upon more or less with the

declining or poor community visits by the service providers (Cleland et al.,1994; Schuler et al.,1996;Phillips et al.,2003).The findings from the literature reviews are aligned with the respondents' opinions regarding the poor community visits and low performance of FP services.

Government's politically priority project CCs of Health Department initiated by the present Government for facilitating doorstep healthcare (each CC/6000 people) at the community level has been engaging the FP community staffs at CCs along with Health staffs. This modality of service provision is making the FP community staffs scarce in the fields due to their affiliation with the CCs for high level policy decision. CCs are now a reality and Family Planning field-staffs are serving there two days weekly recently by government decision instead of three days (MEFWD,2022). As the FP staffs are associate force at CCs, inter-ministerial co-ordination revising the modality of service delivery can make the CCs more functional, productive, and accessible for the FP clients. Both Khan (1986) and Akhter (2004) have shown the integration of FP and Health became malfunctional due to various administrative reasons which has been voiced by the respondents as well. Solo (1999), Prata et al. (2005) highlighted the integrated health and FP services and El-Saharty et al. (2014) specifically recommended the coordination of service deliveries and cross-referrals between FP and Health through the CCs owned by Health Department to maximise the benefits for the clients.

The findings in this section can add new knowledge with the existing ones, at least, in two major ways. Firstly, the findings highlighted how increasing field visits could make the facilities more functioning with client flow. It has, in fact, reiterated the importance of the community visits. Secondly, the study was able to contribute some new knowledge with existing literature regarding the impact of integration of FP and Health from the respondents' views and opinions. It showed direct integration doesn't have a good outcome, however, carefully chosen initiatives highlighting the issues of both Health and FP can have better outcome. There are some literatures regarding the issue, however, they were found to be inadequate to demonstrate real scenario of the impact of health and FP integration. The findings can contribute to formulating strategy to make FP fieldworkers' activities more accessible in the existing CCs.

The BDHS analysis in the quantitative portion provides little information about the functioning of facilities compared to poor visit by the field staffs. However, the interview data was able to make detailed analysis about the declining home visits of the community staffs which supplemented and expanded the quantitative data. The second Research Question was also found to be addressed by the integrated approach of both the quantitative and qualitative data analysis.

Contraceptives choice and preferences were found to be limited by the users due to various socio-cultural impediments. Lack of knowledge of method efficacy results to method failure leading to pregnancy. Various methods like hormonal methods (IUD, Implant and injection) have side effects but due to the lack of side effect, and absence of proper and timely management of them lead to discontinuation of methods which make the women vulnerable to unwanted pregnancy. Like the interview findings Hossain et al. (2005), Vaughan et al. (2008) and Kamal et al. (2007) are in consensus about switching to less effective method and abandoning the methods completely by some women especially pill users which leads to huge discontinuation rates. It has been identified as one of the major concerns of FP programme for the stagnant of fertility as Singh et al. (2010) and El-Saharty et al. (2014) reported.

However, males' poor contribution with limited number of methods (condoms and sterilization only) and also reluctance to participate with their shares due to socio-cultural reasons aggravate the situation. Bajos et al. (2003) found that condom use, and withdrawal method require the mutual support and self-control from the male partner which was found to be problematic due to reluctance from male partner. Due to patriarchy and as agency of financial control, males aren't found to be concerned about the comfort or discomfort of the contraceptives they buy for their wives. Spousal agreement and consensus among the couples can increase the sustainability of the contraceptives reducing the discontinuation, it was evidenced. FP programme all over the world are struggling to increase the share of the males, however, careful planning of the strategy highlighting and including the unique needs of the males can make their participation more visible and inclusive with their partners. Becker (1999), Kabeer (1999) and Uddin et al. (2016) have upheld the importance of spousal agreement and communication between couples in reaching the reproductive goals by ensuring the individual shares of both male and female.

Though mothers-in-laws' interference in women's reproductive decisions are decreasing day by day, yet in some cases, it creates a psychological pressure on the daughters-in-law in the given social hierarchy. For example, in-law's son preference encourages the couples to go for repeat childbearing in case of two or three daughters. Uddin et al. (2016), Saha and Bairagi (2011) found that fertility of women without sons are higher than those with sons which is in consensus with similar findings with the respondents.

Peer effect on the continuation or discontinuation of a method among the women is very instrumental in both positive and negative way. Forrest and Frost (1996) found that woman who frequently discussed about the use of condoms with their peers or girlfriends or mothers, had the likelihood to be a consistent user of condom with their partners. Darmawan and Dartanto (2019) referred it as the bandwagon effect in which most of the group members adopt a method and the others don't want to be left out. The

interview findings are fully aligned with Darmawan and Dartanto (2019) though it is more replicated in a negative way with the side-effect and discontinuations.

However, as FP method needs are contextualised basing on the various socio-cultural settings, ensuring the degree of interference from both sides of providers and users is a complex issue. Kalmuss et al. (1996) and Poldtrack et al. (2011) showed how imposing a method could result to unsustainability while providing preferences of client could make the method sustainable. Both Upadhaya (2001) and Dehlendorf et al. (2013,2016) highlighted the client preferences in selecting contraceptives, however, what Makaoul and Clayman (2006) suggested summarises the client-provider dynamics. They recommended a shared approach where the provider is a clinical expert, and the client is the expert of her own values and choices.

It has been evidenced , huge amount of literature are available highlighting the clients' preference for the contraceptives and providers interference in the global context. The in-depth analysis of the needs, preferences and choices of contraceptives of the women in the literature review and the opinions and views from the respondents could contribute some added knowledge with the existing ones in the context of Bangladesh.

Autonomy of women has always been found to be associated with lower fertility and higher contraceptives use in straightforward way (NIPORT et al.,2023). Education has been an important indicator of women empowerment. Empowered women can at least exercise or bargain with their freedom of choices with contraceptives (Schuler et al.,2010). Again, it doesn't mean that the males with their imposing choices are absent there, rather such impositions are found few.

Age-specific autonomy with the women is interestingly found to be fluctuating regarding their childbearing decisions. The prime time of childbearing is between 15-30 years while unfortunately most are not in job and apparently are not able to exercise their choices. On the other hand, they become more empowered gradually after 30 years while very few have to exercise their choices as they have already completed their reproductive cycle. Though this is not considered to be a new knowledge as the quantitative findings informed us earlier, however, qualitative findings highlighted the socio-cultural implication of this finding.

Again, the complex dynamics of women autonomy with their empowerment in various layers has contributed some new knowledge in my understanding by this study in a given socio-cultural setting like Bangladesh. Though there are existing literatures regarding women empowerment and contraceptive intake relationship, the study was able to produce new empirical knowledge how contraceptives intake attitude can be impacted basing on various layers of economic scales of women. It was able to identify the innate challenges faced by the low-income cohort of women in upholding their choices of contraceptives. It has explored some embedded facets of empowerment dynamics

regarding women's attitude which cannot be perceived straightforward without extensive analyses of various interlinking issues.

The third Research Question of the study was more conceptually grounded as it raised the issues of preferences, choices, comforts or discomforts in using contraceptives and hence, addressed by the diverse views and opinions of the interview respondents reasonably. However, BDHS data highlighted the linking issues of empowerment and increased use of contraceptives, women empowerment, and its impact on reduction of U-5 child mortality etc. Therefore, the integration of the mixed method approach also worked (more qualitative, less quantitative due to research question's nature) to answer the third question of the project initiated by the in-depth conceptual reviews presented at the outset of the thesis.

Child marriage and its outcome, adolescent pregnancy is a concern for FP as Bangladesh has the highest child marriage in Asian countries and fourth highest globally. As a result of the child marriage, adolescent pregnancy is going to be alarming as a big portion of adolescents are entering into the reproductive age in the meantime with enormous amount of demand. It is deemed to be challenging for the service providers point of view despite their continuous effort. Deferring the marriage age or at least delaying the first pregnancy or early pregnancy could be a good remedy to reduce fertility reducing other health and socio-cultural hazards embedded with child marriage phenomenon.

Socio cultural and religious reasons are found to be active behind the soaring, increasing trend of adolescent pregnancy. Poor knowledge and less use of contraceptives after the marriage, wrong societal pressure of childbearing immediate after the marriage, lack of education and lack of women autonomy exacerbate the situation. Child pregnancy or the adolescent pregnancy has the worst outcome on reproductive motherhood with maternal mortality and child mortality. Kamal and Hassan (2015) showed that the adolescent mothers are often prone to preterm pregnancy, miscarriage, obstructed labour, child with low birth weight, and so on due to the immature formation of pelvic which carries the child. Adolescent pregnancies have relatively high under-5 children mortality and morbidity than the older women. Bongaarts (1999) and Hirschman (2001) found that, if non-marital birth is low and negligible and marriage is universal, delaying the marriage age has a contributory effect on fertility. This observation is found to be valid from the interview respondents which also echo other study findings saying, higher age of marriage lessen the reproductive age span (Abedin,2011;Ertem et al.,2008). All the studies (Talukder et al.,2020;Ali et al.,2020) are aligned with same findings that influence of religious affiliation, especially in the context of Bangladesh, has been found to be instrumental in shaping the mindset of the patriarchy ignoring the women's development in individual, family or community level. Muslim women have the higher level of pregnancies after the marriages, all the studies are in consensus with that. Ensuring the legal initiatives in complying the legal age of marriage can also reduce the gravity of the situation though it is not being ensured due to the weaker enforcement of law (Akhter,2019; Plan

International,2015). Raising social awareness rather than legal action has been emphasised due to the socio-cultural elements being embedded in it.

Mahmud and Amin (2006) found that most of the early marriages result to dropping from the schools immediately or soon after the marriages. Gender inequality has been identified as another driving force of child marriages as girls are considered to be an economic burden than the boys and parents become restless to release the burden soon (Nasrin & Rahman,2012). Government initiatives with girl education, stipend with the adolescent girls up to higher secondary are working well in retaining them at school discouraging marriage at early ages. MacQuarrie et al. (2015) have found that adolescent married before secondary education have more children and are prone to pregnancy related complexities than those married after secondary education. However, during Covid-19 parents were reluctant to keep the adolescent girls inside home with the lockdown and some instances of adolescent girls' marriage were found to be conducted in secret, it has been evidenced.

The answer of the demographic conundrum, a highly unlikely demographic situation (high adolescent fertility vs high contraceptives use, and low adolescent fertility vs low contraceptives use) is considered to be the new knowledge found from the qualitative data which quantitative data also reported but failed to answer. The North-Western part of the country with high adolescent marriages was found to have less fertility, below or very close to national average of 2.3. It was revealed, though this part has high adolescent pregnancy, yet they were found to stop their reproductive cycle by stopping childbearing soon after the desired family size (usually 2 children) is ensured. On the other hand, the Eastern part has relatively high marriage age, but they have less access of contraceptives use due to imposing socio-cultural and religious factors. The mix up of both contrasting situations didn't have any adverse impact on fertility, the study found. The study was able to explain this critical situation aimed at the outset.

The study initiated the early pregnancy issues, and its potential outcome in child and maternal mortality with the fourth Research Question. The conceptual analysis at the beginning and BDHS data analysis regarding the adolescent pregnancy have been found to be consistent with the respondents' opinions and views about the detrimental effect of adolescent pregnancy on child and maternal mortality. Though child mortality and maternal mortality are in moderately good position now, the integration of the both the data analysis was able to demonstrate the soaring impact of adolescent pregnancy in diverse ways.

The FP clinical professionals at the facility level do not strictly maintain the prescribed screening protocol for the clients to insert a clinical method due to the shortage of clinical staffs and also for the reason, to meet the targets given by their supervisors. As the providers sometimes disregard the comfort and discomfort of the clients, insertion of IUD or Implant does not sustain the required period resulting the misuse of resources and wasting the provider time increasing the discontinuation rate. On the other

hand, lack of follow up due to shortage of providers is also leaving the facilities underutilized or less utilized. Grimes (1993) and Cottingham and Mehta (1993) deem that all the medical screenings aren't meant to be mandatory and want to uphold the values of women autonomy by reducing medical barriers. However, some critics also argue that quality of care issue should not be compromised in the name of upholding women's values and choices.

Misconception or fake rumours like use of oral pills before first pregnancy may lead to infertility with young brides or IUD might travel all the way out of uterus. These are some of the outcomes of lack of proper knowledge or counselling from both the parts which also contribute to poor quality of services. Both Ochako et al. (2015) and Khan et al. (2016) report that these are the misconceptions among the couples. Ochako et al. (2015) added, few had experienced or knew someone who actually experienced such side effect.

The supply source from FP head office is also responsible for poor quality as they stopped procuring 1 rod Implant which was popular and had less side-effect than the 2 rod Implant among the clients. The DDS kit supply from HO are often with expired amount of items which deteriorates the quality making the clients vulnerable. The generators sent to community level infrastructures require 440kwv supply line to function. Unfortunately, community level infrastructures have 220kwv lines which means the generators are out of functions in the right place endangering the autoclaving of surgery equipment in absence of electricity. This situation also invokes some government staffs from the lower hierarchy to deviate the clients to private clinics/facilities working as the middlemen by the commercial clinics due to poor supervision of the public facilities. Marketing policy of private sector commodities dominates over the government contraceptives due to poor marketing strategy of public contraceptives despite having the same quality. Huge time consumption of contraceptives procurement, distribution, faulty purchase of contraceptives…. all these issues are termed as regulatory issues in the medical barriers of quality of care by Bertrand et al. (1995). These issues also aggravate quality of care in the facilities.

Community workers with some elementary knowledge with clinical methods can assist the clinical personnels or at least cater some of the basic needs of the clients in absence of clinical personnels due to their additional job responsibilities with couple of centres simultaneously. Farr (1998) is found to be in concordance with the respondents' view by saying that some of the field staffs can be given additional training like IUDS and injectables as it can narrow down the referrals, optimizes the scarce resources and most importantly, makes the community staffs more reliable to the service seekers. Dovlo (2004) also echoed with Farr by saying that general medical officers can be skilled with more technical knowledge of obstetrics or sterilization. Scarcity of service provides specially the clinical ones can partially be compensated by implementing this.

Quality of care and its impact to narrow down the gaps of Family Planning services was the last research question of the study. The respondents' views unfolded the diverse facets how quality of care is

compromised, or even breached according to the standard set of protocols. There were no quantitative data or findings directly linked to this Research Question. However, all previous four questions had the testimony of having some embedded information which supplemented to shape quality care of services implicitly in the fifth Research Question.

It is expected that basing on this added knowledge along with these overall findings, the existing implementation strategy of FP programme can more be strengthened and streamlined. The new knowledge can not only provide some potential remedies of the gaps of FP service provisions of Bangladesh but also can cater new knowledge in these aspects which can be replicated to other regions/countries having the same socio-cultural setting of Bangladesh.

8.2 Recommendations

In this section I put forward some recommendations derived from the findings of the study and revisit my positionality and reflexivity. My positionality as a FP practitioner helped me to provide a useful framework for acknowledging my biases and viewpoints. As it has been shared earlier, being a practitioner facilitated my research in many positive ways. However, there is no denying that sometimes it tried to narrow down my outlook, based on my previous experiences. Again, I thought that being a practitioner provided me the space to explore the existing problems both professionally and personally which could have been a hard job to materialize other than being a practitioner. For example, the questionnaire on catering the government contraceptives to young unmarried adolescents was a challenging one. Some of the practitioners due to their professional orientation spoke out positively raising the favourable and disfavourable sides of the issue focusing socio-cultural context. However, all the community leaders, teachers and *Imams* ruled it out as soon as they understood my query. My positionality at the power hierarchy placed me in a comfort zone to explore views on this type of sensitive issue which most of them disfavoured. To respond to these biases and viewpoints, I considered them as they would benefit me from acknowledging and centring it in the process rather than minimising or denying them (Jamieson et al., 2023). The ways in which I have interpreted both are the quantitative and qualitative data, drawn the conclusions and framed my analysis, all largely reflect my positionality and lived experiences (Jamieson et al., 2023).

After scrutinising the findings, I have formed recommendations of what needs to be addressed by different categories of people, and from various points of view, as they require the engagement of different sets of organizations. The Ministry of Health, as the top-level policy approver, the DGFP as the implementing agency and policy maker at HO level with its lower hierarchies in the field, other sister organisations of the DGFP (like the Health Department and NIPORT), and other Ministries are responsible for implementing the recommendations in a coordinated way. However, the DGFP should be the protagonist as the head of the coordinating body with the concerned ministries and other

organisations regarding the implementation of the recommendations. It can be argued that it is not so straightforward to specify or to demarcate the responsibility of an individual organisation. However, attempts have been made to cluster the recommendations under the jurisdiction of a potential implementing authority to have a fair understanding in the following ways:

For the DGFP and field level offices:

- Round the clock service delivery should be ensured at the UHFWCs by appointing the basic clinical personnel (FWV and SACMO) and ensuring their overnight stay at the accommodation assigned for them. All the required amenities (water, electricity, gas, etc) should be ensured to be there.
- To minimise the widening gaps of services due to shortage of FWVs, some of the selected field level workers need to be given additional training with technical knowledge of clinical issues. They can assist the FWVs, or at least attend the service seekers while FWVs are not available at the facilities due to their additional responsibilities in other facilities. Moreover, overall training facilities for all the providers should be ensured to understand their responsibility as well as the importance of upholding the clients' choices and preferences with the passage of time.
- Overlapping of services by public and NGO providers needs to be reduced to have a clear measurement of unmet need and also to maximise productivity of the service providers. The DGFP can partner more like-minded NGOs to cater for the vacant posts which are not covered by the DGFP providers.
- Based on the sociocultural diversity and regional differences, awareness campaigns in policy framing need to be formulated and revised to address the specific needs of different regions. Areas with indigenous people and regions with specific demographic trends should be more focused on the awareness programmes using local dialects and respecting embedded sociocultural settings. Stereotyped awareness campaigns should not be delivered to the diverse range of the population spread over the country.
- As the decreasing trend in child marriage is slow, more awareness campaigns should be designed, planned, and formulated to increase the marriage age and to defer the first pregnancy among the newly married couples so that the adverse effect of child marriage can be reduced, lengthening the childbearing age.
- In a view to increasing the males' share in FP contraceptive use, awareness programmes exploring the unique needs of the males should be formulated. Despite the limited number of contraceptive methods which are specific to males, careful and well-designed involvement in the programme can encourage their contribution in various ways, apart from accepting the methods.

- Ensuring digitization of FP services delivery by using smart phones has been suggested to increase quality of services. Despite the technical limitations among the older providers, with their poor understanding of how to use some technological devices, lists of pregnant mothers, adolescent mothers, ANC, PNC, and other service information can be coordinated by the smart phones or laptops. The authority should facilitate all the providers with the supply of smart phones and notepads/laptops connected to the internet.

For the DGFP and the Ministry of Health

- The FP implementing agency DGFP, with the close supervision of the policy approving Ministry, need to update their recruitment policy in a timely fashion to keep pace with the shortage of personnel at various levels to ensure the quality of services.
- Procurement policy by HO needs to be revised so that it can address the realistic needs of the supplies of both contraceptives and clinical equipment. Procuring time for commodities should be reduced and requisition/needs from the field should be upgraded to serve the purposes of the facilities at field level.

For the DGFP, Health Department, and Ministry of Health

- Home visits at the community level need to be strengthened by the fieldworkers while they are not engaged in CCs with increased supervision and monitoring by the supervisory level of officials. It is recommended that based on the models of existing FP programmes, community field work programme modalities can be streamlined.
- More attention is needed to make the FP services more inclusive and accessible to the clients at the CCs by revising the service modality of FP at these locations. Government initiatives from the top level can prioritise FP workers from an associate to a mandatory workforce for the clients at the CCs.
- As the CCs are to be recruited with more CHCPs, the key service provider according to the organogram, the DGFP should continue bargaining with the Health Department to withdraw all levels of FP personnel for the remaining two days from the CCs to revitalize the fieldwork activities of FP.

The DGFP, Ministry of Health, and other Ministries

- As adolescents are a big cohort entering in their reproductive age every year, there should be more adolescent corners established at all the facilities, highlighting their needs in various ways in existing sociocultural settings. Awareness campaigns against child marriage and adolescent

pregnancy should be conducted with the presence of all the elected local representatives, especially women representatives, along with the community members.

- Both legal and social awareness should go hand in hand, emphasising more on the latter to restrain the increasing trend of child marriage in the community. Social awareness was found to be instrumental in restraining child marriage as most of the causes are embedded in the sociocultural setting.
- Inter-ministerial committees should be made more active for the smooth functioning of the facilities at *Upazila* level.The committees are already there, however, they need to be strengthened and made more functional so that both the FP personnel and members of the committees are accountable to each other regarding their jobs.

8.3 Study Limitations

The research was conducted by employing a mixed methodology with greater emphasis on the qualitative data collected from three study settings in Bangladesh via online interview with various types of stakeholders and secondary data analysis.

- Although the research involved 28 online participants ranging among four categories (FP practitioners both from the field and HO, local government representatives, religious leaders/imams, and female teachers), the major limitation of my research is the absence of FGDs among young/married women of different age ranges. Ethical issues and Covid-19 travel sanctions in both Bangladesh and the UK compelled me to revise my anticipated field tour of Bangladesh planned for June 2020 onward and deferred to June 2021. Finally, the University School Ethics committee permitted me to conduct an online field tour with the above-mentioned stakeholders at the end of June 2021. FGD was not at all approved with any type of participants due to Covid-19 restrictions.
- The research was conducted with the stakeholders across three settings in Bangladesh. Therefore, the findings cannot be generalized to reflect the views and opinions of the participants in the wider context of the whole country.
- The research does not represent participants from both urban and rural settings to compare and contrast. Rather, it has representations from two settings (areas with low and moderately good performing areas) and from the HO of FP.
- The quantitative analysis could have been a more in-depth SPSS based descriptive one. Moreover, some of the specific findings from the qualitative data could have been validated by the quantitative analysis.
- The thesis fairly discusses the regional differences in contraceptive use. However, there is an absence of urban-rural information based on the qualitative data.

- As NGOs are contributing partners with Government FP programme, absence of the voices of NGO member among the respondents is found to be a limitation.

8.4 Further Research

The thesis was able to detail policy issues to reduce the gaps in the provision of FP in Bangladesh. Based on the findings and limitations, the thesis suggests further research as follows:

- Young/adolescent mothers and married women with children are the contraceptive users. So, opinions and views of the direct users of contraceptives can reflect authentic views about contraceptive use, the side-effects of methods, and women's needs and preferences for the contraceptives. Further research with face-to-face FGDs with married/young women can be conducted to explore the unmet need among the users and initiate policy interventions.
- The influence of the in-law's, peers, neighbours, and relatives has been found to be important in understanding the unmet needs of the women. Therefore, further research focusing on the views of the above-mentioned stakeholders can potentially provide more in-depth views about the problems accessing FP services in Bangladesh.
- Service provisions at both urban and rural settings may vary in different sociocultural settings. Therefore, further research which selects urban and rural participants from all eight administrative regions of Bangladesh can further expose the unique attitude toward contraceptive use based on this specific sociocultural setting.
- NGOs are the development partners of Family Planning success story for decades.Further research with respondents from NGOs can also fathom out various dimensions in gaps in Family Planning services.

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Appendices

Appendix A: Online Interview Questionnaire

(This online interview questionnaire will be for Family planning personnel. The number of respondents will be around 16-18. The interview time will be approx. 45 minutes/participant)

Family Planning Practitioners

A. Personal Information

1.Can you please tell me about your role in your organization?

(Follow up Questions will be on gender, ethnicity, age, urban/local,religion,length of service etc)

B. Home Visit , Quality of service and Health Facilities

2.What is your opinion about Family Planning (FP) programme in Bangladesh? How do you see the role of family planning fieldworkers home visits? How has this changed in recent years?

3.What is your views about home visits have impacts on the service seekers to get quality service at doorstep? How?

4.What do you think if there is a need for skill-increase among FP fieldworkers? Which skills would improve quality of services?

5.What is your perceptions about facility-based FP services? How the FP services at facilities are different from home visits?

6.What are the barriers for the clients for physical access to FP facilities? What do you think, the facilities are underutilized or overutilized?

(Follow up Questions will be prompted on home visit guidelines, understanding of quality of care/services and types of health facilities)

C. Unmet Need, Discontinuation and Geographical variances of FP methods

7.What influences the clients, you think, to use FP contraceptives? What influences not to use as well?

8.What do you think, FP contraceptives use differs in region to region or not? How it affects the FP programme?

9.How do you think the regional variations in FP can be minimized?

(Follow up questions will be on the types of contraceptives used by clients, understanding on unmet need of FP and variances in using FP methods)

D. Women autonomy and contraceptive use

10.What do you think influences married women can choose FP methods by themselves?

11.Who do you think influence women in opting FP methods within the household and beyond?

12.What is the role of husbands in decision making of selecting methods for wives?

13. What is the impact of mothers- in-law' influence on married women in using contraceptives?

14.What is your perception, working women are more empowered in accessing FP services? How?

(Follow up questions will be on practitioners' perception on contraceptives use of married women with job, attitudes of women, how job empowers women in taking decision etc)

E. Child Marriage and Adolescent Pregnancy

15. What is the link you find between child marriage and maternal mortality?

16.What could be the potential FP offer to reduce adolescent pregnancy?

17.What do you think the role of awareness in eradicating child marriage in Bangladesh?

(Follow up Questions will be based on practitioners perception of child marriage in society, how adolescents consider child marriage, detrimental effect of child marriage etc)

Thank you very much for your time with the interview. You are welcome to add anything you think you have missed.

Appendix B: Online Interview Questionnaire

(This online interview schedule will be for Local Govt. Representatives, High School Teachers, Imams. The number of respondents will be around 6-8. The interview time will be approx. 45 minutes/participant)

Local Govt, Representatives,Teachers,Imams

A. Personal Information

1.Can you please tell me about your role in your organization?

(Follow up Questions will be on gender, ethnicity, age, urban/local, religion, length of service etc)

B. Home Visit, Quality of service and Health Facilities

2.What is your opinion about Family Planning (FP) programme in Bangladesh? How do you see the role of family planning fieldworkers home visits? How has this changed in recent years?

3.How in your views home visits have impacts on the service seekers to get quality service at doorstep?

4.In your view, what skills do FP fieldworkers need and are there any gaps in their skills? Which skills do you think would improve quality of services?

5.What is your perceptions about facility based FP services? How are these used by clients? How do FP services at facilities differ from home visits?

6.What are the barriers for the clients for physical access to FP facilities?

7 What other barriers do clients face in accessing/ taking up FP services?

(Follow up Questions will be prompted on home visit guidelines, understanding of quality of care/services and types of health facilities)

C. Unmet Need, Discontinuation and Geographical variances of FP methods

7.What influences the clients, you think, to use FP contraceptives? What influences them to take up less as well?

8.In your view, why does FP contraceptives use differs in different region ? How it affects the FP programme?

9.How do you think the regional variations in FP can be minimized?

(Follow up questions will be on the types of contraceptives used by clients, understanding on unmet need of FP and variances in using FP methods)

D. Women autonomy and contraceptive use

10.What do you think influences married women's use of FP methods? To what extent do you think they are able to make their own choices?

11.Who do you think influence women in opting FP methods?

12.What is the role of husbands in decision making of selecting methods for wives?

13. What is the impact of mothers- in-law' influence on married women in using contraceptives?

14.What is your perception about whether the employment status of women influences their use of contraceptives and FP services? How?

E. Child Marriage and Adolescent Pregnancy

15. In your view, how child marriage and maternal mortality are related to each other, if at all?

16.How might FP services help to reduce adolescent pregnancy?

17.What do you think your role includes awareness to tackle child marriage in Bangladesh? What have you found works well?

Local Representatives

18. how young (adolescent) married women use family planning services? What barriers they face? How would you describe attitudes to child marriage in the community? How do families and communities respond to pregnancy in unmarried young women? What services are they able to access etc?

19.As Chairman and President of Union Level FP Committee what role you play in the committee? How far are you satisfied with the outcome of the meeting?What suggestion you provide to different higher forums to improve FP services in the community?

20.Your office is entitled to issue birth registration certificate before marriage.How far you think your office is involved in child marriage by providing false/fake birth certificate?What socio-cultural factors instigates to issue these fake certificates?

Secondary School Teachers

18.What do you teach your adolescents about child marriage? How do you motivate them in preventing child marriage? Despite your efforts if you have adolescent married girls in your class what suggestions you will provide to defer their pregnancy?

19.What do you feel about including child marriage and adolescent issues in high school curriculum (Year 6-12 class)? How far do you think it contributes in preventing adolescent pregnancy?

Imams (Islamic Religious Leaders)

18.How far in the light of Islam Imams can contribute in using FP contraceptives for the women?

19. Some Imams are affiliated as Marriage Registrar as well. How your role can discourage the early marriage in your community? How your preaching/discussion in Friday big congregation can highlight the government campaign of child marriage reduction?

Thank you very much for your time with the interview. You are welcome to add anything you think you have missed.

Appendix C: Participant Consent Form

Research Project: Family planning in Bangladesh: implementation and health impact

Funding Organization: **Prime Minister Office, Government of Bangladesh**

The information provided has been collated based on interviews with selected participants and are not necessarily representative of the views or practice of relevant organisation or institution.

I have read and understood the Participant Information Sheet	
I have been given the opportunity to ask questions about the research study.	
I agree to take part in the research study. Taking part in the research study will include taking part in an online/ telephone interview, which will be audio-recorded.	
I understand that my personal details e.g. name will not be revealed to people outside the research team and that they will be stored separately from anonymized data.	
I understand that the interview transcripts will be anonymized, and that transcripts will be archived securely.	
I understand that my words may be quoted or paraphrased in publications, reports, web pages, exhibitions, and other research outputs but my name will not be used.	
I understand that data will be stored according to University of Reading guidelines, The data will be destroyed after the completion of the project or end of the publication.	
I understand that my taking part is voluntary; I can withdraw from the study at any time with no consequences, and I will not be asked any questions about why I no longer want to take part.	
In case I decide to withdraw *after* the interview has taken place, I understand that I will need to inform Mohammad Badsha Hossain before December 31,2021 so that all the information I have provided can be removed from any publications, reports, web pages, and other research outputs. I understand that if I withdraw after December 31,2021 it will not be possible to guarantee that the information I have provided will be removed from the final project report.	

Name of Participant Signature Date

Mohammad Badsha Hossain _____ _____ _____

Name of Researcher Signature Date

Your contact person for this research study is:

Investigators: Principal Investigator: Mohammad Badsha Hossain,PhD Student,Geography & Environmental Science,University of Reading.**Co-Investigators**: Dr Sylvie Dubuc,Associate Professor,Human Geography,Dept of Geography & Environmental Science,University of Reading,Reading RG6 6AB,

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.Email: s.dubuc@reading.ac.uk Phone: +(44)01183788657.

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Appendix D: Participant Information Sheet

Research Project: Family Planning in Bangladesh: implementation and health impact.

Funding Organization: Governance Innovation Unit, Prime Minister Office, Government of Bangladesh.

Investigators:

Principal Investigator: Mohammad Badsha Hossain, PhD Student, Geography & Environmental Science, University of Reading.

Co-Investigators: Dr Sylvie Dubuc, Associate Professor, Human Geography, Dept of Geography & Environmental Science, University of Reading

Prof. Ruth Evans, Professor, Human Geography, Dept of Geography & Environmental Science, University of Reading

Background and aims of the study:

The overall aim of this research is to identify and analyse potential gaps in family planning provision across Bangladesh and assess factors which may help to reduce unmet needs for family planning. It will investigate this topic through the intersection of population, social and economic geographies, and an analysis of FP organisation and management. Identifying gaps in FP provision and ways to enhance it will provide evidence about women and families' reproductive health needs and preferences. It may also help to inform efforts to reduce fertility and accelerate economic growth (the demographic dividend) as well as help reduce Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR).

Why have I been invited to take part?

You (Family planning professionals, community leaders, religious leaders and teachers) have been invited to take part in Online Interview in this research project as you are one of the important stakeholders in decision making process of adopting family planning methods in Bangladesh

What will I have to do if I take part in the study?

You are invited to take part in Online Interview. The topics I would like to discuss with you are: issues of unmet need of family planning(FP),use of contraceptive methods, reasons of continuation/discontinuation of FP methods, side effect of methods, decision making power in using contraceptives, attitudes of husband in adopting FP methods, intention about limiting/spacing, source of contraceptives, views on seeking healthcare from government facility, service quality of government health centres, early marriage and pregnancy.

The online interview will take up minimum 45 minutes.

Timescale: July-Sept 2021.

Giving consent?

If you are willing to participate, you will be asked to give consent to the interview to discuss your views about the issues mentioned above and you give consent to the researcher to note/write/audio-record the discussions and use this information in the researcher's doctoral research.

How will my personal data be managed and used?

The discussion and information you will provide will be used in journal articles and will form part of my PhD thesis, conference presentation and any other output delivered as part of the PhD research.

All information will be treated with the strictest confidence. Our discussion will be recorded (by Mohammad Badsha Hossain) and shall be transcribed and presented anonymously (using codes to identify participants). Your information will be held in complete confidence and we will also follow ethical guidelines of the University of Reading. This project has been reviewed and approved by the University of Reading Research Ethics Committee. Reported citations will be carefully selected and using different name so that you cannot be recognised and identified.

All the information shall be securely stored by me and shared only for the research purpose with my supervisors. To protect participant confidentiality, the information will be stored by the University of Reading, UK in a secure system with password protected until completion of my PhD. The information will be destroyed after completion of all publications in accordance with the University of Reading policies. The information will not be shared outside the research team as listed above.

All published output will include a disclosure statement that the information provided has been collated based on interviews with selected participants and are not necessarily representative of the views or practice of relevant organisation or institution.

What happens if I decide to withdraw?

You have absolute liberty to withdraw from the interview during the discussion and within December 31, 2021 without giving any reason.

What are the possible disadvantages and risks of taking part?

The research will cover the online interview on the issues like use of family planning contraceptive methods, early marriage, early childbearing, reasons of discontinuation of contraceptives, side effects of various family planning methods, reproductive health which may be sensitive to some respondents.

Regarding the sensitivity of the research topic, the researcher will avoid asking about any distressing experiences of the respondents and the focus will be on their professional and community work, rather than personal experiences. The researcher will conduct online interview by phone/mobile/laptop, whatasapp or skype.

What are the possible benefits of taking part?

Your participation will help the researcher to explore the gaps in meeting unmet need in family planning which will help provide evidence of women's and families' reproductive health needs and preferences and to improve the offer of family planning and reproductive health provision to women and families. It may also help reduce Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR).

Who do I contact if I have any questions or concerns about this research?

You can contact Principal Investigator and Co-Investigators in the contact details below:

Contact Details: Email: mohammadbadsha.hossain@pgr.reading.ac.uk
Phone:

.Email: s.dubuc@reading.ac.uk Phone: +(44)01183788657.

Email: r.evans@reading.ac.uk,Phone:+(44) 01183787755

Appendix E: Themes and Codes

Family Planning in Bangladesh: implementation and health impact

1.**Home visit**

Codes:1. Declining home visits 2. Poor client: worker ratio 3. Lack of inspection 4. Less priority for FP 5. Demotivated staff

2.Facility visit

Codes:1. Shortage of clinical staff 2. Poor FP infrastructure 3. Poor location of facility 4. Attitude of clinical staff 5. Religious barriers 6.Cultural barriers 7.Physical barriers

3.Quality of fp services

Codes: 1. Unavailability of staff 2. Lack of awareness 3. Choices of clients 4. Mismanagement of side effect.

4.Adolescent marriage

Codes: 1. Girls as liability 2. Poverty 3. Social insecurity 4. Awareness (social &legal) 5. Religion 6. Fake birth certificate 7. Education

5.Adolescent pregnancy

Codes;1. Child marriage 2. Lack of contraception knowledge 3. Societal pressure 4. Maternal mortality 5. Child mortality 6. Poor health condition

6.Women autonomy

Codes:1. Education, 2. Freedom of choice 3. Working women 4. Housewives

7.Contraceptives choice

Codes:1. Lack of contraceptives knowledge 2. Peer effect 3. Influence by husband/in law 4. Influence by community workers

8.Unmet need

Codes:1. Awareness about methods 2. Negligence of clients 3. Negligence of providers 4.Cultural / religious reasons

9.Regional difference in services

Codes:1Unavailability of services 2. Religious norm 3. Cultural norm 4.Hard to reach areas 5.Poor policy plan

10.Skill increase

Codes:1. Lack of specific training 2.On Job training 3.Low entry

Appendix F: Sample Coding of Interview Questionnaire with a respondent

(This online interview schedule will be for Family planning personnel. The number of respondents will be around 18. The interview time will be approx. 45 minutes/participant)

Family Planning Practitioners

Respondent's Pseudonym: P

(Deputy Director FP)

A. Personal Information

1.Can you please tell me about your role in your organization?

I am Deputy Director FP……...I roleplay as a coordinator at the district level with the FP head office and other organizations for the smooth functioning of the programme.

B. Home Visit , Quality of service and Health Facilities

2. How do you see the role of family planning fieldworkers home visits? How has this changed in recent years?

I joined the FP service in 1989 in a waterlogged area Jamalganj,Sunamganj district.We had a vibrant fieldwork in that time ,a concerted effort from the FWAS,FWVs,SACMO,FPIs.There were lots of limitations in FP programme then but field staffs used to enjoy the door to door visit.**The present situation we see a bit changed with fieldwork becoming irregular[1.1].The Fieldworkers have to attend Union level meeting, monthly meeting at upazilla, attend clinical campaign with a long acting client, they have to do office 3 days at the CC[1.4].**All these occasions made the fieldvisit of the FWAs narrower to discharge their activities. **Moreover, shortage of fieldstaffs[2.4] is also big reason.**

We don't have the regular recruitments, but everyday FWAs are getting to retirement making the posts vacant. Even some of the recruitees also leave the job just after joining **if they find better options in other organizations making the staff:client ratio[1.2] more unmanageable.**

5.What is your perceptions about facility based FP services? How the FP services at facilities are different from home visits?

To my observation most of the facilities(UHFWCs) are not working well due to some practical reasons. Some of the UHFWCs have been listed for 24/7 but they are posted with only one FWV, there **are UHFWCs where no SACMO is posted, even the support staff Aya[2.4]**.These centres can not run well. At least 2 FWVs should be there so that 24 hours can somehow be covered. Again the recruitments of the FWVs is a long process. After their recruitment is done ,we have to wait for long 18 months to post them. So there lies always a big time gap which suffers the clients in getting services from them. I suggest the status of the **FWVs should be upgraded to midwives with proper training[10.1].**The midwives should be posted in these posts so that their services can be rendered to the clients direcrly. In this way the centres can be made more functional.

3.What is your views about home visits have impacts on the service seekers to get quality service at doorstep? How?

4.What do you think if there is a need for skill-increase among FP fieldworkers? Which skills would improve quality of services?

If we have required manpower, that is itself a skill. Yes, we need to improve the skill of the service providers. There is no alternative of it. Pathfinder and other NGOs are providing one day training course in my area which seem to be scattered and sometimes a showdown to me. The trainees should be motivated after getting the training but the trainees with the new knowledge from the training can not implement it in the job atmosphere. So **we should think it from that point of view so that trainees can exercise the knowledge in job arena[10.1].**

What do you think the attitude of the service providers also affect the service ?

No, we have improved a lot in the recent past. For example: IEM Unit is trying hard to make fp programme visible in different media including radio tv.The adolescents related scroll and message made for TV and Radio are good but I suggest the timing of the telecast of the scrolls/media should be readjusted so that it matches with adolescents timing/availability. Otherwise the huge investment won't have any outcome for mismatching the timing.*Sukhi Paribar* call centre is really working well. Director General and other officials reiterated the importance of spreading the call centre number to nook and corner of the country.

NB:Timing of TV scroll/Radio jingle for raising awareness.

Remarks:

The timing of the tv scrolls and radio jingles are at school timing/inappropriate for the adolescents. As awareness programme in TV/Radio and other mass media is huge expensive, authority should make sure the proper timing so that visibility is most reached to the targeted audience.

6.What are the barriers for the clients for physical access to FP facilities?

What do you think, the facilities are underutilized or overutilized?

Government is taking initiative to update the infrastructural conditions of the FWCs,especially fixing air condition in the OT room,making the major repairs, building separate accommodation for the Security guard and Aya.All these will ensure 24/7 delivery and more functioning of the FWCs.

I also think that the InterMinistrial meetings held to make these centres more functioning are not working. Because the various committees working at the Union level, very integrated with the functioning of the FWCs are not being held regularly. The Chairman of the Union Parishad is not so interested to conduct the meetings regularly and the other Committee meetings are also held as a routine meeting highlighting no specific outcome at the end. So realistically social awareness for the Committee Heads and members are required to make the meeting functional. These are the committees which make the FWC accountable for their activities to the community people

.***NB:policy issue to strengthen the functioning of the facilities)***

Remarks:

All the elected representatives are the chairs of various committees of various hierarchies which are mostly unfunctional or less functional. Interministrial coordination should be strengthened so that field level activities are evalutated duly.

Moreover, another major setback the present sad situations are being exploited by the so called Private Clinics and hospitals. There is a allegation that these private organizations even try to degenerate the government staff so that government clinics and hospitals struggle to function. They have already created a middleman who convinces the clients/patients to the private hospitals. Eventually poor people will be compelled to go to private hospitals.

NB:derailed govt staff disfunctioning the facilities)

Remarks:

This malpractice can ruin the harvest of Government FP programme in general and healthcare system of Government specifically. Some corruptedand degenerated staffs of lower hierarchy are

responsible for this as the higher authority have no inspection over the whole system. Their poor performance with the equipments and low attitude with the clients compel them to go to private hospitals.

The autoclave machines which are bought don't run with 440kw lines but in most of the UHFWC electric lines are 220kw.It means that they are not functional at the proper place. The generator machines are not button or auto started but rope driven generators sent to the UHFWCS where the old Night Guard can not start it by himself. Sometimes the rope is torn during the starting of the generator. We cant have client flow in our centres with this existing situation. Another example in the DDS kitbox, there are 21 items of medicines of different expiry dates. But the last expired ones are mentioned in the box. But after opening the box it is revealed that most of the medicines expired quite earlier. The whole purchase policy in the HQ are faulty and sometimes corrupted.

(NB:faulty purchase policy of government from the HQ)

Remarks:

Recently digitization of supply system can easily explore the contraceptives shortage instantly in a specific service delivery point which ensures smooth supply chain all over the country. However purchasing the low quality medicines and other equipment is a big management issue often alleged to be corrupted and faulty.

C. Unmet Need, Discontinuation and Geographical variances of FP methods

Unmet need is attributed to remote areas/hard to areas. How far do you agree?

Unmet need is a big issue in our programme. Yes its true. But I want to discuss the topic from another point of view. I think if the proper screening of the clients by our service providers ,I mean who is eligible for which method, what will be sideeffect„,if all these issues are not addressed and our service providers just insert a method to the clients with some primary examinations, its not going to work. Most of the IUD drop out are done just for this reason. The client is not fit for IUD but the FWV inserted her iUD to meet her stipulated quota, the side-effect compels the client to withdraw it

NB: Importance of screening before method acceptance

Remarks:

Unrealistic targets/quotas on service providers by higher authority to increase performance has the bad outcome of lower level of screening with high drop out of IUD,Implanon.This policy issue can be addressed if both the upper and lower hierarchies are agreed with realistic target. This will increase quality of service, a major concern all over the county now a days.

Again they may have some sideeffects **but if the sideeffects are not properly managed**[3.4] and counselled by the FWV to the clients, the clients surely lose the trust on the method. So unmet need happens.

7.What influences the clients, you think, to use FP contraceptives? What influences not to use as well?

8.What do you think, FP contraceptives use differs in region to region or not? How it affects the FP programme?

9.How do you think the unmet need in FP can be minimized?

Target/projection is one of the major reasons which compels the FWVs to go for these imposed things

NB: Causes of lack of screening issues.

If the door to door home visits can be further increased by providing vehicle support to the FPIs,lady Scooties to the FWAs,they can motivate the clients more like the earlier times.Tab should be given to all the FWAs.Job satisfaction for all sections of the fieldstaffs should be ensured.**They are supposed to lose motivation**[1.5] **rendering service with the same status in their whole service life.**

D. Women autonomy and contraceptive use

10.What do you think influences married women can choose FP methods by themselves?

I think that though presently the women are not fully able to opt[6.2] **for the contraceptives but days are not far, with the recent economic development, women education**[6.1] **and women contribution in the garments sector will make it possible**. The garments employees know by their own effort how to prolong the child bearing as child bearing will deviate her from the job. **Our clients are not getting in touch of the workers'**[3.1] **the workers are finding out their own methods for them**. There was a misconception earlier that in the slum areas people have more children and fp department launched lots of awareness campaign there at all 6 city corporation areas. But I think scenario has changed now a days. **They are now well aware**[6.1] **and I think change in economic condition among the slum dwellers is the main reason. People now understands what they should do now.**

Fp messages are no longer alien to the commoners. The way Bangladesh economy is progressing hopefully that good day will come soon. Presently we need to recruit and post 9 fwa for 9 administrative ward so that each of them can have a separate committee with each member of the ward. **So my suggestion is to redistribute the 3 wards to 9 wards of a union as already the number of couples have increased to 1500 t0 2000**[1.2] against each member .For example I had been posted 7/8 years in Banderban where 11 to 13 communities of indigenous people live .They have their different languages and culture which is alien to their neighbouring other community of another indigenous community.

The fieldworkers mostly are recruited from the mainstream Bangladeshi community whose language are not clear to them vice versa their language is not understandable to the service providers. If IEM Unit can implement[9.5] special awareness program for the indigenous people using their own language. Highlighting the local context is very important. Planning the program from the HQ can not be a easy solution to all the areas at the same time.

Corona situation has taught us something new. During the pandemic the pregnant mothers were discouraged from the big hospitals. Our UHFWCs in the meantime have become their trust for the normal delivery. Corona has facilitated the UHFWCs to become more familiar with the clients and patients in absence of the mainstream hospitals.

11.Who do you think influence women in opting FP methods within the household and beyond?

Same situation is not prevailing everywhere. **We need to develop an intrgrated work plan to address the individual problem with specific approach**[9.5]**.** For example the problems in FP we face in Banderban, Khagrachari, Rangamati will not be valid for other mainland of the country. These districts have very low population which are lower than national level. So basing on the context of these regions'unique needs special programmes should be taken to address their needs.

NB: Regional packages to address the variation of services

Remarks:

Banderban, Rangamati, Khagrachori are three hill areas where indigenous people live. Their population is very low.Government's stereotype FP programme with small family norm made for mainland isn't popular there as they think, FP programme will further shrink the population there turning them into a sheer minority. So family welfare aiming the reduction of maternal/child mortality should be focussed there so that indigenous people are convinced that Govt FP programme is there to ensure the reduction of maternal mortality and child mortality, not to encourage FP for establishing small family norm.

12.What is the role of husbands in decision making of selecting methods for wives?

Purchasing power has increased and people have their own choices. Moreover as the members of the male dominating society, they will exercise their power. There is nothing new in it. But it's also true that as living standard and purchasing power increased, clients are not so interested for the permanent methods. They look for simple and easy methods .Its true ,permanent methods like tubectomy is like a major operation. Ideally 6 beds are assigned for the FP sterilization patients but forget about the 6 beds, the clients are not even enjoying the single bed. They are under the operation table in the morning and they are returning home in the afternoon. So the care and management of the patients of a sterilization client is not in any sense upto that standard. The other long acting methods are popular with the clients.

But if the follow up and screening are not done minutely, they will lose trust on our treatment and eventually will be dropped out. Follow up has high investment of financial expenditure.

NB: less importance of permanent sterilization

Remarks:

The screening and care management of the permanent methods is not upto the mark. Female sterilization is decreasing day by day, male strelization is also decreasing. However, that isn't unexpected as awareness level is increasing and community people are adapted with a life style without permanent sterilization. But low standard in managing the tubectomy/other long acting clients at hospital with poor facility will endanger the trust of the clients increasing the drop out rates.

Despite the good condition of the communication **the FWV and SACMO are not staying in their service stations as they are lead by doctors and they also don't stay at the stations[2.4].**So the higher authority can not compel the fieldstaff to stay at the stations. Another bad side of good communication all over the country has imparted some bad news, the FWV and SACMO are regularly coming to the stations from their own hime from a fair distance. They are not interested to stay at stations. I shared the info with a higher authority that if the members of the UHFWCs are made under transfer job from one district yo another district, there is a chance to make them stay at stations. **In this way the centres will be more functional with quality of service[10.4]**

13. What is the impact of mothers- in-law' influence on married women in using contraceptives?

14.What is your perception, working women are more empowered in accessing FP services? How?

E. Child Marriage and Adolescent Pregnancy

High child marriage low fertily,,,how can you assess it

I think the reason is very clear to me .Social media and digital technology is very popular today especially with the younger generations. So they are getting lots of adult contents in the media. They are having the relationships but they know better how to bar the pregnancy. This is happening with child marriage. For various reasons they are getting married, this is true, but they are reluctant to childbearing so early or at least they make spacing or they finish the cycle earlier. In this way it doesn't have any adverse effect on our fertility.

(***N.B: High Child marriage and lowfertility/ pregnancy conundrum)***

Remarks:

A common phenomenon in FP programme in last two decades: high child marriage and low fertility miracle In Bangladesh. Both paradoxical phenomenon are going hand by hand with minor adverse effect in total fertility. Socio cultural situation in both the regions is responsible for this type of unique demographic phenomenon.

I don't have faith in the fact that more girls are being pregnant before 18.I believe its not so huge as it is shown.

15 . What is the link you find between child marriage and maternal mortality?

It is easily understood that if there is early marriage[5.1] there will be some maternal mortality5.4

16.What could be the potential FP offer to reduce adolescent pregnancy?

17.What do you think the role of awareness in eradicating child marriage in Bangladesh?

Women empowerment should be ensured.**If the education[6.1] with some benefits what govt is already doing ,can be done ,if the girls are engaged with some learning,child marriage will automatically decline**. Our UHFWCs have lots of facilities including adolescent health corners. These informations need to be transmitted soon to the community so that the adolescent can make the best use of it. The more we can engage the social elites with this process, the more we will go forward in preventing child marriage.The good suggestions and counselling from the adolescent comer can open up their mind for the new thinking for future. they can dream for new life with the knowledge and information. **I still believe that it can not fully be eradicated with interventions of law forcefully rather awareness programme[4.4] in the society** engaging all sections of people can make it happen.

Adolescents should be given to fp contraceptives?

The culture, heritage, values are different in our country. **We respect the social values[2.6] and religious teachings[2.5] which are against this**. This can bring catastrophe to the social structure of morality. But we can provide them lots of information like what is the risk of early pregnancy, the impact of early pregnancy in a adolescent life.

Thank you very much for your time with the interview. You are welcome to add anything you think important.

Appendix G: DHS Dataset Description

Since 1984, the DHS has been providing technical assistance to more than 300 demographic and health surveys in over 90 countries (dhsprogram.com) (DHS,2023). The DHS collects and disseminates accurate, nationally representative data on health and population, especially on fertility, contraceptive use, maternal health, maternal and child mortality, among others.

Beginning with an edition in 1993-94, the BDHS produced its 9th edition of surveys in 2022. Individually, they cover the following periods: 1993-94, 1996-97, 1999-2000, 2004, 2007, 2011, 2014, 2017-18, and 2022. The surveys generate evidence of basic national indicators of social progress, including fertility, childhood mortality, fertility preferences and regulation, maternal and child health, nutritional status of mothers and children, and awareness of/and attitude towards HIV/AIDS.

Recode Files: Among the various files, the SPSS recode files below have been selected for analysis.

HR: Household Recodes

Unit of analysis: Households

This file includes household characteristics, the household roster, and biomarker rosters as repeating sets of variables. The dataset is used for the calculation of household level indicators, such as access to water and sanitation.

PR: Households Members (or Persons) Recode

Unit of analysis: Household member

This file includes characteristics of household members, including age, sex, marital status, and education, as well as biomarker measurements. The dataset includes both de facto and de jure household members. It also includes the characteristics of the households, whether the individual lives in the household or was visiting at the time of the survey.

IR: Individual (Women's) Recode

Unit of analysis: De facto woman interviewed.

This file contains all the data collected in the Woman's Questionnaire for de facto women, plus some variables from the Household Questionnaire. Data were collected from those with up to 20 births in their birth history, and up to six children under the age of five, this includes data about their pregnancy and postnatal care, immunization, and health and nutrition data which can be found as repeated variables in this file. This dataset is used for most woman-level analysis, including marriage and sexual activity, fertility and fertility preferences, FP, anthropometry and anemia in women, malaria prevention for women, HIV/AIDS, women's empowerment, adult and maternal mortality, and domestic violence. .

BR: Births Recode

Unit of analysis: Birth

This file contains the full birth history of all the women interviewed, including information on pregnancy and postnatal care, as well as immunization, health, and nutrition data for children born in the last five years. Data for the mother of each of these children are also included. This dataset is used for fertility and mortality analysis.

KR: (Children) Kids Recode

Unit of analysis: Children under the age of five born to a woman interviewed

This file contains information related to the child's experience of pregnancy and postnatal care and immunization, health, and nutrition data. The data for the mother of each of these children is included. This dataset is used to look at child health indicators, such as immunization coverage, vitamin A supplementation, recent occurrences of diarrhoea, fever, and cough for young children, treatment of childhood diseases, nutrition for young children, and malaria prevention and treatment.

MR: Men's Recode

Unit of analysis: De facto man interviewed

This file contains all data collected in the Man's Questionnaire aimed at de facto men, plus some variables from the Household Questionnaire. This dataset is used for most man-level analysis, including marriage and sexual activity, fertility preferences, and HIV/AIDS.

CR: Couples Recode

Unit of analysis: Married woman and man

This contains data from women and men married, or living together, who have both declared that they are married to, or living with, each other and have completed individual interviews. This dataset is the result of linking the IR and MR files based on whom they each declared as their partner. In polygynous societies a man's data may be linked to more than one woman's data. This dataset is used for analysis of couples, principally related to HIV.

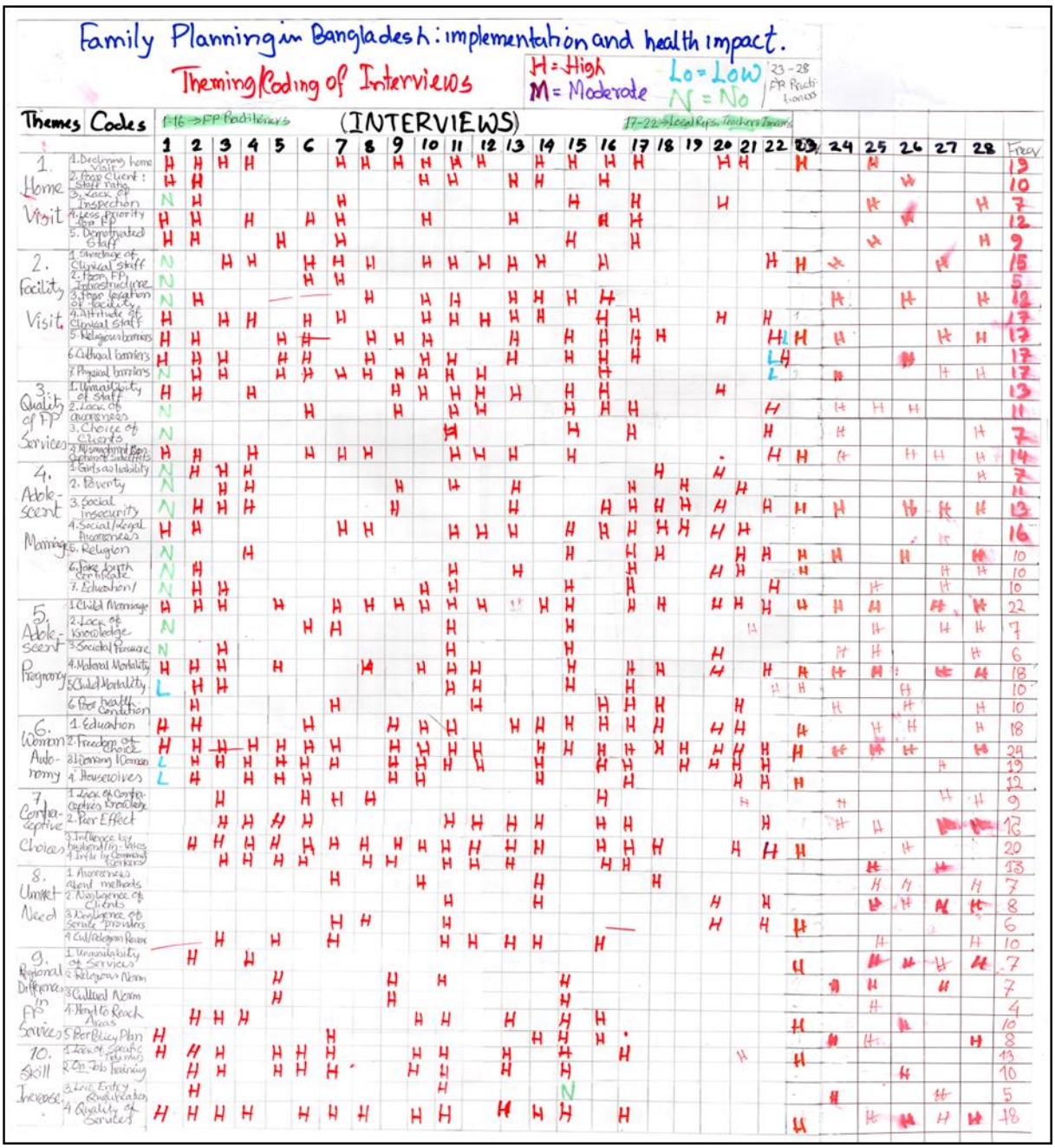
SQ: Service Availability Recode

Unit of analysis: Service given

This file contains all data related to service quality based on variables which include: distance to health facility, types of services provided, mode of transport available to reach the facility, health provider living in the locality, among others.

Apart from BDHS datasets, other national and international organization datasets were also used.

Appendix H: Coding Matrix



Appendix I: Ethics Permission Letter

University of Reading

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21 June 2021

Dear Badsha,

SREC Application SREC2021/ 11

Title: Family Planning in Bangladesh: implementation and health impact

Your ethics application was considered by the SAGES Research Ethics Committee on 3rd June 2021 and approved subject to:

1. Amendment of SREC application form to clarify :
   - Specifically where the data will be securely stored (local disc, server, cloud etc)
   - When will the recordings of the interviews be destroyed?
2. Amendment of consent form with specific date by which participants can withdraw by

Please send all updated documents to Susie Fullarton (s.fullarton@reading.ac.uk)

With best wishes for your research.

Yours sincerely

Professor Avril Maddrell
Chair, SAGES Research Ethics Committee