Urban women's experiences with implants and contraceptive decision-making in Vietnam: Findings from a qualitative study

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by

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List of abbreviations

CHS	Community health station
CPHCSC	Central Population and Housing Census Steering Committee
CPR	Contraceptive prevalence rate
C-section	Caesarean section
DALY	Disability-adjusted life years
FGD	Focus group discussion
FP	Family planning
GDP	Gross domestic product
GOV	Government of Vietnam
GSO	General Statistics Office
HDI	Human Development Index
HIP	Health Insurance Program
HPs	Health professionals
HSPH	Hanoi School of Public Health
HWs	Health workers
IHME	Institute for Health Metrics and Evaluation
IUD	Intrauterine device
KIT	Royal Tropical Institute
LARC	Long-acting reversible contraceptive
MOH	Ministry of Health
MSI	Marie Stopes International
RP	Reference period
SM	Social marketing
SPs	Service providers
STIs	Sexually transmitted infections
TFR	Total fertility rate
TMA	Total market approach
TTHRHC	Thua Thien Hue Reproductive Health Center
WHO	World Health Organization

Executive summary

With one of the highest contraceptive prevalence rates in the world, Vietnam paradoxically has exceptionally high unintended pregnancy and abortion rates. The implant, as the most reliable long-acting contraceptive method, potentially contributes to solve this paradox. Being introduced in Vietnam more than a decade ago; however, the implant only accounts for a mere 0.25% of method mix. This study sheds light on what is really behind this puzzling low use of the implant and how access to the implant can be improved by exploring urban women's experiences with implants and their contraceptive decision-making. In-depth interviews and focus group discussions were conducted with 29 urban FP users and 4 SPs. The implant potentially fulfills the contraceptive needs of a proportion of urban women owing to its broad eligibility criteria, high effectiveness, convenience, and novelty. Women having sufficient number of children and postpartum women are potentially ideal recipients of the implant. However, high incidence of menstruation-related side-effects signifies the importance of counseling and continuum of care. Fear of infertility, concerns about health risks, and misconceptions are barriers to implant adoption. Urban women's contraceptive implant decision-making seems to be less of an individualistic process than being shaped by their social networks. Enormous gap in communication should be addressed through social network-based approach. Private sector is a potential channel to deliver contraceptive implant services. In order to mitigate cost-related barrier to the implant and improve the quality of services, the inclusion of the implant in the health insurance program is worthwhile being considered.

Key words: Implant, family planning, contraceptive decision-making, social network, male involvement, urban women, Vietnam.

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CHAPTER 1: BACKGROUND

1. Context of Vietnam

Vietnam is located in Southeast Asia with a total land area of 310,000 km^2. The country is divided into six main regions with 63 administrative cities and provinces (GOV 2015). Hanoi, the capital city, is considered as the socio-political center of the country.

Vietnam has a population of 89.5 million, in which females account for 51%. Total fertility rate (TFR) is 2.09 (GSO 2014). Since 2009, Vietnam has entered the period of "golden population structure", which refers to the dependency ratio[1] of less than 50%. The annual population growth is 1.05%. Vietnam has skewed sex ratio (114 boys/100 girls). Around 32% of the population live in urban areas (GSO 2013). Vietnam has 54 ethnic groups, in which Vietnamese is dominant with a share of 85% (CPHCSC 2010).

Vietnam enjoys a stable political environment under the leadership of the Communist Party. Over the past decade, Vietnam has achieved significant progress economically and socially. Vietnam has become a middle-income country since 2008. Gross domestic product (GDP) in 2014 is $186.2 billion (World Bank 2015a). Proportion of households living under national poverty line is 8.2% (GSO 2014). Vietnam has achieved universal access to primary education (GSO 2014).

The average life expectancy is 73 years old (GSO 2013). Maternal mortality ratio stands at 69 per 100,000 live births in 2009. Infant mortality rate in 2012 is 15.4 per 1,000 live births. However, disparities exist among ethnic minority groups and geographically remote areas (MOH 2013). In 2010, cardiovascular disease, road injuries, and low back pain are the leading causes of premature death and disability[2] (IHME 2010). In 2011, government spending on health accounts for 2% of GDP and 8.1% of state budget (MOH 2013).

Vietnam is classified as a country in medium human development category (UNDP 2014). A summary of country profile is presented in Appendix 1.

2. Family planning (FP) program in Vietnam

2.1. Historic and current context of FP program in Vietnam

Pham et al. (2012) divided the evolution of the population policy in Vietnam into three periods: initiation (1960s-1970s), maturity (1980s-1990s), and legalization (2000s-2010s). Over the last five decades, promotion of social norms of small-size family with one or two children by vigorous communication campaigns and expanded provision of contraceptives have remained the key feature of Vietnam's population program. The National Strategy on Population and Reproductive Health 2011-2020 clearly set out a target of reducing TFR to 1.9 by 2015 and to 1.8 by 2020 (GOV 2011). FP program in Vietnam have been criticized for focusing only on married women. The reproductive health needs of unmarried women and adolescents are largely ignored (GOPFP and UNFPA 2011).

[1] The ratio of dependents to the working-age population (working age: 15-64)

[2] Premature death and disability are measured in Disability-adjusted life years (DALYs): A measure of healthy life years lost due to premature death and morbidity

In Vietnam, FP program has enjoyed strong political commitments; however, enormous challenges remain. Pham et al. (2012) pointed out the need to bridge the gap between international commitments regarding women's rights and reproductive rights endorsed by Vietnam and its locally restricted population policy. Secondly, a largest ever population of women of reproductive age (24 million), which is projected to continue to rise to 27 million by 2020, signifies an escalating demand for contraceptives. As Vietnam assumed middle-income country status in 2008, international donors have scaled back their assistance (United Nations Vietnam 2011). Therefore, ensuring contraceptive commodity security in the upcoming periods is identified as a priority.

In response to these challenges, a total market approach (TMA) to contraceptives is considered as a realistic and sustainable solution. This approach helps "bring together the public and private sectors in a coordinated effort to identify segments of the population they are best suited to serve" (Drake et al. 2010, p.48). In 2011, Ministry of Health approved the Operational Plan for Contraceptive Total Market (CTM) (PATH 2012). Free access to contraceptives is granted to a capped proportion of FP users, with priority given to disadvantaged populations. The capped proportion for each method varies across provinces depending on the fertility rates (MOH 2015). Social marketing (SM) is identified as prioritized delivery channel over the period 2011-2015 (MOH 2011). Key milestones of Vietnam's FP program are described in Appendix 2.

2.2. Service delivery systems and patterns of contraceptive utilization

FP service delivery systems

FP methods are widely delivered at all levels of health system in Vietnam[3] (A description of Vietnam's health system is presented in Appendix 3). Contraceptive methods provided in the national FP program include the copper-bearing intrauterine device (IUD), injectables, implants, condoms, and pills (MOH 2015). Condoms and pills can be easily accessed at grassroots level through networks of FP collaborators (Ha et al. 2005). Most contraceptive methods, especially the IUD, are largely provided free-of-charge to married women (Drake et al. 2010). Women also access subsidized contraceptives such as condoms and pills through SM programs. The SM program has been expanded to clinical contraceptive methods such as the IUD, implants, and injectables (MOH 2011).

Operating in parallel with public sector, private sector including private hospitals and clinics also delivers a wide range of contraceptive methods. Women can easily buy condoms, pills, and emergency contraceptives at any drugstores without prescription. Several non-government organizations such as Marie Stopes International (MSI), Vietnam Family Planning Association (VINAFPA), Population Service International (PSI), and DKT are also engaged in provision of contraceptive methods. DKT and PSI are two big SM organizations in the country (Drake et al. 2010).

Patterns of contraceptive utilization

The contraceptive prevalence rate (CPR) among married women is 77.8%. The figure for modern contraceptives only is 59.8%. The most popular contraceptive method is the IUD, male condoms, and calendar methods, used by 31%, 12.7%, and 11.3% of

[3] Community health stations (CHSs), inter-communal polyclinics, district hospitals and health centers, provincial reproductive health care centers, provincial and central hospitals

women respectively (GSO 2011). Composition of method mix is presented in Appendix 4. The dominance of the IUD can be explained by its easy access and a long history of being strongly advocated by the government (Ha et al. 2005).

Among married women, main reasons for non-use of contraceptive methods[4] are health concerns and perceived low risk of pregnancy (GSO 2013, MSIVN 2014). It is interesting to note that the overall CPR tends to be higher in rural areas compared to urban areas; however, the reverse trend is observed when it comes to condoms and traditional methods (GSO 2013). Unmet need for FP is low among married women (4.3%) with 2.3% women having unmet need for spacing and 2% for limiting (GSO 2011). Whereas, unmet needs for contraception among the unmarried is 34.3% (United Nations Vietnam 2011).

The vast majority of contraceptives (86%) are obtained from public providers. In particular, about 94% of IUDs, 70% of pills, and 43% of condoms are obtained from public sector (Drake et al. 2010). In 2010, out of 58% of married women aged 15-49 who were using a modern contraceptive method, 54% used fully-subsidized contraceptives, 40% accessed through SM, and only 6% used commercial contraceptives (MOH 2011).

2.3. Contraceptive implants in Vietnam

The Implanon implant was introduced in Vietnam in September 2000. Implanon is a progestin-only hormonal method, which offers three-year contraception (MERCK 2014). The risk of pregnancy is <1% (WHO 2011). Implanon is one of the most commonly used types of implants worldwide (Blumenthal et al. 2011). It has been registered in 73 countries (JHPIEGO 2014). A summary of key characteristics of the Implanon implant is presented in Appendix 5.

Before Implanon, Norplant[5] was piloted in Vietnam in 1990. Norplant and Implanon are the only implantable methods included in the 2009 National Guidelines on Reproductive Health Care. The implant can be only provided by trained health professionals (HPs) at the district level upwards. Only Implanon implant is included in the national program; however, the supply is limited in terms of quantity and geographic coverage. While women in rural areas access the implant free-of-charge or at subsidized prices from government-run channels, urban women access the method primarily through commercial channels. The implant remains unknown to the majority of women (MSIVN 2014). It accounts for 0.25% of method mix (GSO 2011).

[4] Not including non-use because of desire to have children

[5] A type of contraceptive implant which is inserted subdermally and provides 5 years of protection

CHAPTER 2: PROBLEM STATEMENT, OJECTIVES, AND METHODOLOGY

1. Problem statement

Investment in FP brings about significant health and socio-economic returns. From public health perspective, FP is an effective primary prevention strategy to combat maternal and newborn mortality in low-and-middle-income countries (Ahmed et al. 2012). From socio-economic perspectives, access to a wide range of contraceptives places women in a better position to take charge of their fertility, contributing to the prosperity of their families and communities (Women Deliver 2014). More importantly, provision of FP methods which enables women to decide freely and responsibly on the number and spacing of their children is critical to the assertion of women's and reproductive health rights (UNFPA 1994). Marked progress has been made over the past decades but enormous gap remains. An estimated 215 million women have unmet need for FP globally (Singh et al. 2009).

Vietnam has one of the highest CPRs in the world (77.8%). Since 1999, the country has achieved replacement-level fertility rate (World Bank 2015). Paradoxically, these achievements seem to stand at odds with high unintended pregnancies and induced abortion rates. Le et al. (2004) found that about 40% of pregnancies in Vietnam were unintended. Vietnamese women, on average, experience 2.5 abortions during their life time (Goodkind 1994). More than 50% of abortion seekers in Vietnam are actually using a contraceptive method at the point of getting pregnant (Ngo et al. 2014). High rates of contraceptive failure are probably due to the difficulties confronted by women in their effort to use their contraceptives correctly and consistently (Bahamondes 2008).

Such paradox makes FP an unfinished agenda in Vietnam. Being a provider-dependent method, the implant has identical efficacy rates between correct use and common use (WHO 2011). Ready access to the implant has the potential to reduce unwanted pregnancy and abortion rates in Vietnam. Bahamondes (2008) stressed that high contraceptive efficacy, long-term protection after a single intervention, low rate of complications, and quick return of fertility make the implant "a good candidate" for FP programs in developing countries.

2. Justification

It is acknowledged that offering as many contraceptive methods as possible maximizes the chance of women's finding the method that suits their needs and lifestyle the most (Sullivan et al. 2006). Shulman (2003) stressed that women should be able to make a successful contraceptive decision at the start rather than after experiencing adverse outcomes as a result of using a method which does not suit her. Ross and Stover (2013) found a strong association between availability of contraceptive methods and CPR. As Vietnam has set the target of increasing CPR to 82% by 2015 (MOH 2011), improved access to and availability of the implant are likely to boost its progress.

Not all contraceptive methods offer the same level of protection. Relying on less reliable methods places women at greater risk of unintended pregnancies. In fact, the implant is the most effective method available (WHO 2011). Furthermore, all long-acting

reversible contraceptive (LARC) methods[6] are more cost-effective than condoms and pills (Mavranezouli and LARC Guideline Development Group 2008). In the context of declining international assistance and domestic financial constraints for FP in Vietnam, highly cost-effective methods should be prioritized.

In Vietnam, although the IUD is the dominant method, accounting for 40% of all use, it is not an ideal choice for women who have anemia, current reproductive tract infections (Hardjanti 1995), and pervious caesarean sections (C-section) (Goldstuck and Steyn 2013). Furthermore, the discontinuation as a result of dissatisfaction with the IUD has been of significant concern (Park et al. 2011). Lack of choices regarding LARC methods, past IUD users tend to switch to short-term and less reliable methods, contributing to the increased risk of unintended pregnancies.

Improved access to the implant potentially contributes to reduced unintended pregnancy and abortion rates, as well as the assertion of reproductive rights among Vietnamese women. Being introduced in Vietnam more than a decade ago, the implant only account for a mere 0.25% of all method use. The question is what is really behind this mere prevalence. Taken at face value, it seems to be merely the issues of health system constraints. Two small-scale quantitative studies suggest relatively low discontinuation rates (2%-8% at year one) and high level of acceptability (94%) among implant users in Vietnam (TTHRHC 2010, Tran 2005). Lack of knowledge, negative attitudes, misperceptions, and partner disapproval have been identified as reasons for nonuse of other contraceptive methods (Ngo et al. 2014, Hardjanti 1995, Park et al. 2011, Belanger and Khuat 1998, Suh and Stier 1997, Do et al. 1993, Duong et al. 2005, Le Thi et al. 1995, Johansson et al. 1996). To date, no studies into the reasons for nonuse of the implant among Vietnamese women have been identified.

In 2011, the government has adopted a TMA for contraceptives (MOH 2011). Urban women who are capable of affording their contraceptives are encouraged to access their preferred methods through commercial channels (PATH 2012). In fact, urban women's contraceptive use has been an under-searched topic, possibly because of the assumption that they have better access to contraceptives compared to rural women. Therefore, there is a need to examine if private sector is a potential channel to deliver contraceptive implant services and what can be done to facilitate urban women's access to the implant.

In order to address these gaps, the present study was conducted among urban implant users and non-users to explore their perceptions of and experiences with the implant and implant-related services, as well as factors influencing their contraceptive decisions. The implant was used as a lens to further explore urban women's contraceptive decision-making in general. Findings from the study are expected to offer useful recommendations for improving the quality of implant-related services, developing effective communication campaigns, and enhancing urban women's access to the implant. The ultimate goal is to enable Vietnamese women to make an informed choice regarding contraception and have ready access to the methods of their choice.

[6] The implant is one of LARC methods

3. Objectives

3.1. General objectives

To explore urban women's experiences with implants and their contraceptive decision-making in order to inform FP program in Vietnam.

3.2. Specific objectives

- To document experiences of urban women with their implants
- To describe factors which influence women's contraceptive implant decision-making
- To provide recommendations for implant-related services and FP program in Vietnam

4. Method

4.1. Study design

A cross-sectional qualitative study was performed, employing in-depth interviews and focus group discussions (FGD). In-depth interviews were conducted with new adopters and current/past users of the implant. In-depth interviews allow the researcher to obtain rich and personal narratives of participants regarding their views and experiences (Kielmann et al. 2012). FGDs were performed among never-users of the implant, including both FP users and non-users. FGD was employed because it is well suited to elicit shared perceptions and explore how respondents' ideas are shaped by the opinions of their peers (Kielmann et al. 2012). This research was approved by the Research Ethics Committee at Royal Tropical Institute (KIT) and Hanoi School of Public Health (HSPH).

4.2. Sample selection

Hanoi was purposively selected because it is a typical urban area. All participants were recruited from two Marie Stopes International[7] (MSI) clinics in Hanoi by purposive sampling and snowball technique (Table 1).

Twenty implant users[8] were interviewed in this study. Eight new adopters[9] were recruited directly at the two clinics between 1/6-8/6/2015. All clients who came to the clinics for implant insertion were invited to participate. Face-to-face interviews were conducted at the clinics subsequent to their procedure. Current/past users of the implant were mainly interviewed via phone. Three participants were recruited from the clinics when they replaced their implant and revisited the clinic for treatment of side-effects. The remaining participants were randomly selected from a list of clients who sought removal services in April 2015 at the two clinics. The researcher contacted 15 participants, 9 clients agreed to participate.

[7] Established since1989, MSIVN is considered as among leading reproductive health service providers in the country with a network of 11 MSI clinics across 10 provinces. Two MSI clinics in Hanoi are located in the city center. On average, around 150 clients are provided with Implanon insertion and 15 clients with Implanon removal services at two MSI clinics in Hanoi monthly

[8] In this report, the term "implant users" refers to both new adopters and current/past users of the implant

[9] New adopters refer to those who have just had their implants inserted, without actually experiencing the method

Two FGDs were conducted with 9 never-users of the implant. These participants were recruited through snowball sampling technique. Enrolled new adopters were asked to introduce their friends to be invited into the study. Participants coming from the same networks are more likely to openly and comfortably share their views and experiences with one another. Both two FGDs lasted for 60 minutes.

Four interviews with service providers (SPs) at two MSI clinics[10] were also performed. Answers from SPs were triangulated with narratives from participating clients. All interviews took placed for 25-35 minutes.

All interviews and FGDs were recorded after asking for permission from respondents. All participants were explained about the purpose of the study and research procedures. A written informed consent (Appendix 5) was obtained from each participant, except for those participating in phone interviews.

Table 1: Summary of data collection methods and sample size

#	Characteristics of participants	Data collect mode	# of participants
1	New adopters of the implant	Face-to-face in-depth interviews	8
2	Current and past users of the implant	3 face-to-face in-depth interviews 9 phone interviews	12
3	Never-users of the implant	Focus group discussion (one group of 6, and one group of 3)	9
4	Service providers	Face-to-face in-depth interviews	4
Total			33

4.3. Data collection and analysis

Within this study, women's experiences with the implant was explored holistically as a process starting with pre-service counseling to actually experiencing the method, dealing with side-effects, and ending with implant removal and method switching. Examination of women's contraceptive decision-making was guided by Socio-ecological Model for Change (Figure 1). The model is an integration of various theories and models. It accommodates the limitations of social cognitive models[11], which focus exclusively on individuals. Rather than assuming that people are always rational in their decision-making and are in full control of their own behavior, it acknowledges that individual's behavior is shaped by multiple and overlapping social and environmental factors. Cross-cutting factors[12], naming knowledge, motivation, ability to act, and norms play out across all levels (C-Change and USAID 2014).

The analysis of factors influencing women's contraceptive decision-making is broadly conducted at four levels: (1) Self, (2) interpersonal, (3) Community, and (4) Enabling environment. However, the focus of this study was on personal and interpersonal level. Cross-cutting factors are explored in-depth in "self" ring. The roles of partners, family members, and peers are explored as interpersonal influences on women's contraceptive decisions. How factors at community and enabling environment level such as organizations, services, products, policy, and legislation influence contraceptive utilization in Vietnam has been well-documented in existing literature (Knodel et al.

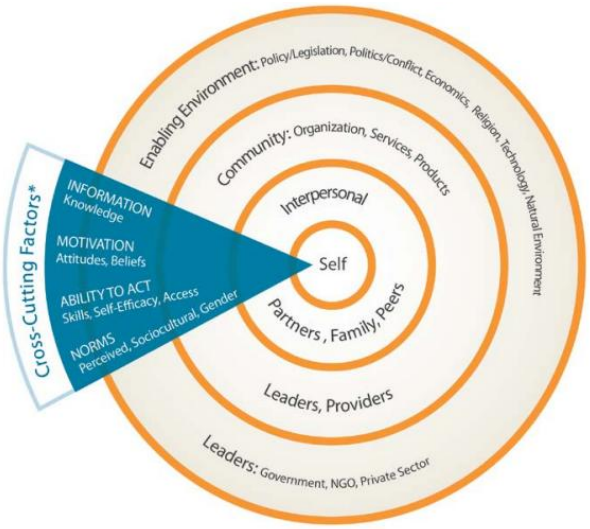
[10] Two SPs at each MSI clinic

[11] Health Belief Model, Theory of Planned Behavior, Stage of Change, and Fear Management

[12] Cross-cutting factors are originally developed at self level

1995, Gammeltoft 1999, Do and Koenig 2007). A detailed description of organizational, institutional, and legal context of FP program in Vietnam can be found in the papers of Pham et al. (2012) and PATH (2012).

Figure 1: Social-ecological model for change
(Source: C-Change and USAID 2014)



Semi-structured interview protocols (Appendix 6) and topic guide for FGD (Appendix 7) were developed and tested before the commencement of the study. Thematic analysis was used to analyze data. Data analysis and data collection were performed simultaneously. After each interview, the audio recording was transcribed verbatim (Cater and Henderson 2005). After four interviews, the researcher developed a list of descriptive codes. Topic guides were modified iteratively based on preliminary findings. Data collection ceased when data saturation[13] was reached. In the next step, descriptive codes were collapsed into analytic codes in order to form main themes. Comparison between responses of participants within each theme was made to identify similarities and differences. The researcher considered the frequency of themes to establish relative priority and trace the connections and relationship between themes by identifying the co-occurrence of themes (Kielmann et al. 2011). Typical quotes were selected to support interpretation and demonstrate key findings. Word Processor 2007 and NVivo 7 were used to organized codes and facilitate data retrieval. In addition, findings from current literature are used to discuss and elaborate main conclusions and recommendations.

[13] The point at which no new information emerged from subsequent interviews

CHAPTER 3: RESULTS

This chapter starts with a summary of characteristics of participants. This is followed by a description of women's experiences with the implant in Section 2. Section 3, structured in alignment with the socio-ecological model, focuses on women's contraceptive implant decision-making. Section 3.1 provides an elaboration of how women's decision to use and discontinue the implant is shaped by (1) Information, (2) Motivation, (3) Ability to act, and (4) Norms. In Section 3.2, the influence of women's social networks (partners, family, and peers) is explored in details. The final section 3.3 is devoted to structural and contextual factors at community and environment level.

1. Characteristics of participants

The mean age of 29 participants[14] is 30.3, with the youngest of 23 years and the oldest of 40 years. Most participants (27 out of 29 participants) are married. Among 27 married participants, 16 participants have two children, 10 participants having one child, and only one participant having 3 children.

Twelve participants were interviewed for their experiences with the implant. Of those, five are current users and seven are past users. Characteristics of participants are detailed in Appendix 8.

As for SPs, four respondents have at least one year of experience of providing implant services. They are all involved in FP counseling and performing implant insertion and removal procedures, as well as other services such as STIs treatment and abortion.

2. Experiences with the implant and implant services[15]

2.1. Pre-service counseling

All implant users made their decision to use the method prior to their visit to the clinic. Consistently, SPs stated that only small proportion of their clients were undecided about which method to use at their first contact with the clinic. Most implant users expressed satisfaction with their counseling. Interestingly, one participant cited that her pre-service counseling session made her "*more anxious*" because positive opinions and experiences from friends and acquaintances stood in stark contrast to numerous side-effects mentioned by SPs. However, SPs believed that it was essential for their clients to be sufficiently informed about the side-effects so that they can "*get prepared*" and "*feel less anxious*" during use. From their viewpoint, some side-effects were less tolerable than others and should be emphasized during counseling:

> *Apart from menstrual irregularities, I often emphasize four main other side-effects, naming weight gain, reduced libido, vaginal dryness, and acne […] I especially emphasize prolonged bleeding because it can have a huge effect on health due to loss of blood. (SP, P1)*

Side-effects and when to seek help were perceived by women as the focal point of a counseling session. SPs believed that the clients often expected individualized and interactive counseling, in which SPs were engaged with their clients, maintaining eye contact and tailoring the information based on specific needs of each client. In addition,

[14] Not including 4 service providers

[15] This section is drawn on accounts of service providers and 12 current/past implant users

using practical examples to demonstrate their points was a useful strategy to facilitate understanding.

> *I always tell my clients that they should try the contraceptive method to see if it suits them or not […] I often take example of a shirt or a dress. It looks good on your friends but it does not mean that it fits you well. (SP, P1)*

2.2. Experiences during use

Most participants felt that the implant was an acceptable method. A third expressed in great appreciation of the feelings of "*being completely secured*" from unwanted pregnancies the implant offered. All participants but one reported side-effects. The most common included menstrual irregularities, vaginal dryness and reduced libido, bad skin, and weight changes. A few participants stated that the most difficult period for implant users was the first few months as their bodies had to "*adjust and get used to the implant*". However, based on actual experiences of participants and SPs' opinions, there did not seem to be fixed and distinct periods which were considered as most problematic for users.

> *I: What do you think is the most difficult period of clients?*
> *P4: It is not important. I always inform clients that side-effects might occur immediate after insertion. In many cases, clients confront side-effects such as prolonged bleeding and amenorrhea in after one or two year in use. (SP, P3)*
>
> *There is no such period. In theory, it is the first year because the body has to get familiar with the implant. But from my observation, my clients might feel ok in the first year but the second and the third year are bothersome. (SP, P1)*

Less common side-effects included bruises at the insertion site, hair loss, chest pain, fever at night, headache and nausea, sleep deprivation, and other "*menopausal symptoms*" such as night sweats, hot flash, and irritability. Interestingly, a few participants expressed uncertainty about the side-effects they experienced. One current user stated:

> *I am not sure if other side-effects such as headache, nausea and poor appetite are due to the implant because my friends and I have reached "old ages". Nowadays, the society is full of toxic substances, which speeds up the aging process. I do not dare to blame anything specifically. (Current user, 33 years old, P12)*

Few participants stated that they suffered from dramatic side-effects such as "*complete loss of sexual desire*", "*excessive weight gain*", and "*severe hyperpigmentation*". Most participants found the insertion and removal procedures were simple and painless, without any complications.

Not all participants made contact with SPs in the face of side-effects. Some accepted them without questioning because they were aware of their possibility to occur. Other looked for information about other's experiences, either through the internet or friends. They felt reassured if many others also were in a "*similar plight*" with them. Also, the perception that any contraceptive method had its own drawbacks encouraged them to accept its side-effects. A common feature across all past users was their endurance

with menstruation-related side-effects. In case of prolonged bleeding, past users often waited from 2 weeks to 3 months before they decided to seek help. Experiencing uncommon side-effects, such as constant fever at night, made some participants panicked and come to the removal decision quickly.

2.3. Removal of the implant and switching behavior

6/6 participants who removed their implant prematurely cited prolonged spotting as the main reason for their removal. SPs also confirmed that it was the dominant reason for implant removal at their clinics. Past users often expressed deep regret at the unsuccessful outcomes of their treatments, which led them to the situation in which they were highly confused about which methods to use. According to SPs' subjective estimate, a combination of counseling and medicines could help up to 50% of implant users to maintain the method in the face of prolonged bleeding.

Amenorrhea[16], weight gain, and reduced libido are also among common reasons for removal. According to SPs, women who came to the clinic for removal because of amenorrhea, proper counseling can make a difference as can be seen from the following quote:

> *Earlier this morning I counseled a client who was determined to have her implant removed at first. After being counseled, she asked me to give a couple of minutes to reconsider. She decided to keep the implant later. (SP, P2)*

Sometimes, barriers came from the client's family members. Misconceptions about amenorrhea might lead them to create unduly pressure on implant users. This suggests after-service counseling might need to be extended to family members where necessary. As shared by one SP:

> *One client told me frankly that her mother and mother-in-laws continuously urged her to remove the implant. After being counseled, she felt reassured and wished to continue the method but she was not able to convince her mothers. I asked her to talk to them via phone but she was reluctant... She decided to remove it, complaining that they kept grumbling for a long time. (SP, P4)*

From SPs' perspectives, weight gain and acne were less tolerable because "*appearance and beauty are a priority for most women*". Reduced sex drive was also less likely to be accepted because it led to unsatisfactory sexual experiences and marital conflicts. However, it was acknowledged by both implant users and SPs that vitamin E and libido-boosting supplements (Juvecare) could make a huge impact, motivating users to maintain the method.

> *I am using some supplements. The results are not really as good as expected, but the dryness has been improved a lot. (Current user, 34 years old, P15)*
>
> *Since we advised clients to use some supplements, the rate of removal due to vaginal dryness and reduced libido has plummeted. (SP, P2)*

[16] Absence of monthly menstruation

According to SPs, other less common adverse experiences which triggered implant removal included sleep deprivation, headache, hair loss, unexplained feelings of irritability and discomfort.

Six participants who decided to remove the implant prematurely expressed no intention to reconsider the implant or use the IUD in the future. They were afraid that they would "*suffer from side-effects of the implant again*". At the same time, negative perceptions about the IUD kept them way from the method. They reluctantly returned to their previous methods with which they already had difficulties using. Condoms and pills were the most common methods that past users switched to.

3. Contraceptive implant decision-making

3.1. Self

3.1.1. Information (knowledge)

a. Knowledge about contraceptive methods and the implant

Most participants were aware of and had experiences with a range of contraceptive methods. Injectables and permanent methods were least commonly known.

Implant users knew that the implant is the most effective method available; whereas, never-users were generally not aware of its effectiveness. One condom user expressed her uncertainty:

> *And I wonder what the proportion of failure of the implant is. Any method has a failure rate. Thus, I have considered the implant several times but not yet decided it. I am still using condoms. (Condom user, 27 years old, P21)*

Interestingly, both groups appeared to have a comparable level of knowledge about side-effects. Menstrual irregularities, vaginal dryness and reduced libido, acne, and weight gain were commonly cited. Amenorrhea was the most frequently mentioned side-effect.

b. Most reliable sources of information

The vast majority of implant users knew the implant from their friends and the internet. It was a common practice among participants to use Google to search for random websites or specifically look for information in large online forums such as Webtretho and Facebook groups. Only 2/20 clients cited that they were aware of the method when they visited the health facilities.

Friends and acquaintances were considered by most participants as the most trustworthy source of information, even more reliable than HPs' advice. Two participants stated that some doctors warned them about the possibility of developing cancer and thinning of endometrium[17] as a result of using the implant. However, vicarious experiences from friends helped them to overcome this fear. They felt that information on the internet was not fully trustworthy because of its diverse and conflicting nature.

[17] Inner lining of the uterus

Some stated that HPs "*had clinical expertise" and "were able to give the most accurate information".* However, a few expressed doubt about the personal motives and interests of doctors working in private facilities.

> *For example, if you go to private clinics, they will advise you to use services that are most profitable for them. (Unmarried, 24 years old, P23)*

Remaining participants stated that they did not fully trust any sources of information before actually experiencing the method themselves. They believed that each body responded differently to the same method; therefore, they tended to seek various sources before making their decision.

3.1.2. Motivation (attitudes and beliefs)

a. Attitudes towards contraception and FP

FP was seen by participants as "*obvious*" in modern society. They emphasized a salient point that "*taking care and raising their children is much more important than giving births*". They stated that FP allowed them to have a "*relaxed family life without being kept busy with children*" and to realize their future plans.

At the same time, most participants considered FP as a complicated, time-consuming, and tiring task. It took participants in this study between several months and up to one year before they made their decision to adopt the implant. Participants believed that they always had to deal with constant fear of infertility as a result of contraceptive methods on the one hand, and a risk of unintended pregnancies and other health risks on the other hand, stating that no method offered 100% protection and was side-effect free. One participant cited that FP was the "*most arduous task*" facing women:

> *Very tiring, I think what makes women tired the most is family planning […] I feel very tired because I wonder what method I should use. Withdrawal is not safe at all, the IUD then still getting pregnant and expulsion of the IUD, some people use the pills but it was hard to remember and they ended up in unintended pregnancies. Very dangerous! (Past user, 29 years old, P20)*

Regarding top priorities in consideration of a contraceptive method, high effectiveness and "safe for health" are most frequently mentioned criteria. High level of protection was the dominant criterion for most implant users, who often cited "*100% prevention from pregnancy*", "*absolute safety*", and "*contraception is key*". In contrast, never-users tended to place emphasis on the extent to which the method interfered with their bodies and health. These differences were clearly reflected on their ranking of their preferred methods. All new adopters and current users put the implant as their top priority with natural methods placed at the bottom. On the contrary, for never-users, condoms, natural method, and the IUD were the top prioritized methods with the implant ranked at the bottom.

b. Perceptions about the advantages of the implant

Majority of participants were aware of various advantages of the implant. They tended to see the implant in comparison with other methods, especially the IUD. A high level of protection was the advantage that was most frequently cited by implant users. In their

perceptions, with the protection rate of 99.95%, the implant offered them "*absolute protection*". A number of participant cited that they chose the implant primarily because it is the most effective method available. What emerged from accounts of both users and never-users was unacceptably high failure rates associated with other methods ranging from natural methods, condoms, pills, to the IUD.

The second most preferred attribute of the implant was its convenience and literally no attention required.

> *I think I need a method that makes me feel safe, without worrying about forgetting, running out of condoms, or all of a sudden sexual desire. (New adopter, 27 years old, P2)*

Those who cited this feature tended to compare the implant to pills, condoms and natural methods. The implant set them free from having to take the pills daily and having to calculating "safe" days which they found complicated and burdensome.

> *Either calendar method or condoms are inconvenient. I found them all inconvenient. This [the implant] is very safe method. When using it, I do not have to think too much. (New adopter, 32 years old, P1)*

Implant users tended to have substantial difficulties using condoms in comparison to never-users. Adopting the condoms required them to "*store a sufficient number of condoms*", to "*remember to use* and *use it correctly*", and to control spontaneous sexual desire. They claimed that using condoms made their sexual experience less satisfactory.

A number of participants considered the implant as a "safe" method. One participant thought the implant was safe because many postpartum women were using it. Another participant cited:

> *I: What matters you the most when choosing a contraceptive method?*
> *P: Generally, the first thing is safety.*
> *I: Safety means?*
> *P: In terms of both contraceptive protection and health. The implant has the highest level of protection, even higher than the IUD. That is the first thing I care. Secondly, the implant is safe because it do not affect our health, although it has side-effects but these side-effects are not severe, they do not have much effect on our health. The implant meets both these 'safety' criteria. (Current users, 35 years old, P3)*

Other advantages included long-lasting protection, instant return to fertility, uncomplicated insertion/removal, and being free from monthly bleeding. A few implant users liked the idea of amenorrhea. In their perspectives, the absence of periods meant they did not have to worry about sanitary pads, saving money, enjoying the cleanliness and reduced risk of infections. Amenorrhea was considered as an appealing feature of the implant, especially by those having heavy and long periods, persistent stomachache and backache while menstruating, and those who were on business trips frequently.

> *Well, it is like when I was pregnant, I felt very happy because during my periods, all my activities are inhibited, because I feel uncomfortable, irritated, and tired because of loss of blood. When I lose blood, I feel so uneasy. So I find it even better if I do not have my periods for a year. (New adopter, 25 years old, P5)*

The implant versus the IUD

There was a distinction in the perceptions of implant users and never-users regarding the IUD. For never-users, they believed that the IUD was much better than the implant, mainly because it does not interfere with their hormones. A participant, who was confusing between the implant and injectables, expressed her preference for the IUD.

> *It is just that I cannot use the IUD. It would be much better if I can use it. […] I have waited for 3-4 years after my C-section. But they still said that… I should not use the IUD. They were doctors from National Obstetrics Hospital. (Condom user, 33 years old, P26)*

The implant and its mechanisms of action were generally perceived by non-users as being "*abstract*", "*too modern*", "*unfamiliar*", and "*risky*". As one implant user explained why her friends did not use the method:

> *Most of my friends do not know about the implant. Some might know but not with much details. They often said that this method was new so they did not dare to try, they are afraid of taking risk. (New adopter, 25 years old, P5)*

In contrast, majority of implant users considered the IUD as their last option. What emerged from their accounts was that the IUD was notorious for STIs, discomfort and pain during sex, heavy bleeding, and high failure rate. Most participants cited that that they knew someone who had unintended pregnancies when using the IUD. In their opinions, the implant clearly had an edge over the IUD.

> *I am not sure but my friends often whispered in one another's ears that our husbands would be "bitten" by the IUD. It is very uncomfortable for them. (Current user, 33 years old, P12)*
>
> *I came to know that the implant is the most effective method. I also used to consider the IUD. However, I have some friends, they use the IUD but they suffered from such heavy bleeding that they almost fainted. Because of this, I excluded the IUD out of my list of contraceptive methods. (Current users, 34 years old, P15)*

Furthermore, it was a common perception among implant users that the IUD was old-fashioned, and was associated with older generations and rural women.

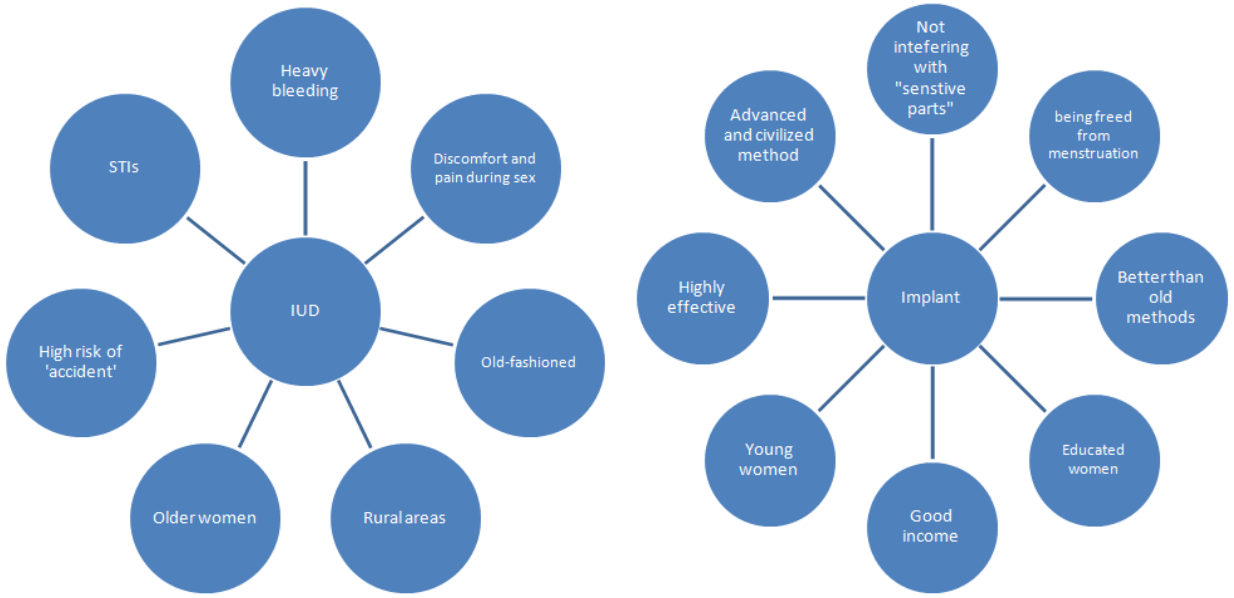
> *In rural areas, women often use the IUD. In the community, they often talk about it. (Unmarried, 28 years old, P24)*
>
> *Younger generations only, older women seem not really… They are afraid of overweight, and this and that. (Past user, 28 years old, P11)*
>
> *Older women seem to prefer the IUD. (New adopter, 27 years old, P2)*

In contrast, the implant was seen as a "civilized" and advanced method, which was popular in developed countries. They stated that the insertion site of the implant which was under the skin of the upper arm gave them the feeling of security and being in control, rather than the IUD which was placed in their "*sensitive parts*" and "*within their bodies*".

The implant is a very civilized and interesting method. For example, it is inserted in the arm, right under the skin, rather than within the body. Therefore, it is very safe and I also found it comfortable because it does not cause reproductive tract infections. (Implant user, 35 years old, P3)

The procedure of insertion and removal of the implant were perceived to be much simpler compared to the IUD. One participant related the implant with medicines, believing that "*new medicines are always better than the old ones*". Apart from these, implant use is associated with high level of education, good income, and better access to information. SPs stated that after the introduction of the implant, the number of clients seeking the IUD reduced substantially. Perceptions of implant users about the IUD and the implant are visualized in the Figure 2.

Figure 2: The implant versus the IUD from implant user's perspectives



c. Concerns around the implant

What emerged from the account of participants is that the implant decision-making seemed to involve numerous concerns. Women appeared to have to weigh the benefits and risks associated with the implant. Metaphorically, different fears compete against one another to decide which fears matter the most to women. The following section start with describing women's concerns which are "against" the implant use. Fears "for" the implant were explored later. Competing concerns are visualized in Figure 3.

Figure 3: Competing fears for and against the implant

Fear of infertility
Fear of hormonal changes: uncontrollable, unpredictable, and irreversible impacts on health
Fear of amenorrhea: menopause and menopause-related health issues, aging, bodily abnormality, "not normal", building up of toxic blood, irritability and discomfort, infertility
Fear of "not matching"
Fear of pain and transportation of the implant
Fear of others side-effects: Prolonged bleeding, reduced libido and vaginal dryness, bad skin, and weight gain

Fear of unintended pregnancy: Unintended pregnancies pose severe health risks, abortion-related experiences, life plans are turned up-side-down

Cannot use other methods because of specific health conditions: IUD is not recommended to women with caesarean section, women suffering from uterine fibroid are advised not to use pills, severe side-effects with the IUD

Fear of infertility

Fear of infertility was the dominant concern among both implant users and never-users.

> *Many people out there, they could get pregnant immediately after removal [of the implant] but for me… I might be different. I might be in the minority group. After removal, I become barren… What should I do then? (Condom user, 27 years old, P29)*
>
> *My first and foremost concern is that after removal, whether or not I can give birth again. (New adopter, 27 years old, P2)*

Explaining for unpopularity of the implant, implant users emphasized that fear of infertility was prevalent among their friends.

> *I: Among your friends, are there many people using the implant?*
> *P: None of my friends used it, it is only me. They are afraid that not being able to getting pregnant if they have the implant inserted. They are all afraid of this. Then, they also fear that the implant poses a danger to their health. (Past user, 28 years old, P11)*

Most participants believed that every modern contraceptive method had a certain level of effect on women's fertility and reproductive health.

> *I: How do you feel about selecting a contraceptive method?*
> *P: It is difficult. As I told you, every one worried about barrenness. (New adopter, 27 years old, P2)*

They believed that condoms and natural methods were the best choices for women who still wanted more children because these methods "*are least harmful on women's fertility*". Menstrual irregularities, a noticeable side-effect of the implant, seemed to add credibility to their fear. As reasoned by a participant:

> *The implant causes hormonal changes. When hormones change, there will be a lot of health consequences, especially for the unmarried. The hormones plays an important role in determining a woman's ability to conceive. (Implant user, 34 years old, P15)*

Because of such fear, many participants stated that young girls and women should only use the implant in "*inevitable circumstances*". Women having sufficient number of children were perceived to be free from such fear. Therefore, they could use the implant without much thoughts and consideration.

> *For those who already have two children, it [infertility] does not matter to them. It is just women like me who have to concern about it. (Current user, 26 years old, P10)*

Out of 20 implant users interviewed in this study, 11 participants affirmed that they had no intention of giving births in the future. As they finished their fertility responsibilities, they found themselves in a more favorable position to opt for the implant than others.

> *But I already had enough children. I chose to use the implant because if it did not fit me, it would not be a big problem. I am different from those who only have one child and wish to have another child in the future. They will definitely have to think very carefully. (Past user, 40 years old, P13)*

Fear of infertility appeared to be reinforced by participants' perceived high rate of infertility in society.

> *Nowadays, infertility was so popular. My sister-in-law… She already had a baby boy. She then used contraceptive methods to wait until she could buy a house. The boy is now in 8th grade but she has not been able to give births. She just used condoms and pills. She has gone through 3 rounds of assisted reproductive technology but she all failed them. (Condom user, 27 years old, P29)*
>
> *Hormone-related infertility is prevalent at the moment, and treatment is not simple at all. (New adopter, 32 years old, P1)*

In some cases, fear of infertility comes from consultation with SPs. A condom user stated she was advised by her doctors to "*prioritize the condom if she still wants to have more children*". Although SPs in this study did not explicitly state that the implant affects fertility, they were inclined to encourage young clients to use condoms.

> *For young and unmarried clients, we always counsel more about condoms. The unmarried should use condoms. The condoms are also helpful in case of unprotected sex. I always direct their attention to the condoms. (SP, P4)*

Fear of infertility led both users and never-users of the implant to the perception that the implant is more suitable for some women than others. The belief that the implant is most suitable for women having sufficient number of children is of uniform across all participants, including SPs. However, implant users tended to take more relaxed viewpoint. Some mentioned "*many*", "*almost all*", or "*every*" in response to the question of who should use the implant.

"I fear nothing but hormonal changes..."

Concerns over hormonal changes were paramount among never-users of the implant. From their viewpoint, side-effects, including amenorrhea, were not worrisome because they were just temporary and they could control them by "*taking rest*" and "*using tampons*". However, they expressed deep concerns about long-term health impacts of hormonal changes as a result of the implant.

> *I fear nothing but hormonal changes. It is what I am worried about the most […] Hormonal changes are a not a simple problem. It is uncontrollable. (Condom use, 33 years old, P26)*

In their way of thinking, hormones played an important role in the body physically, emotionally, and psychologically. They believed that hormonal disturbances could result in uncontrollable, unpredictable, and irreversible changes to their bodies.

> *It can change your skin, make hyperpigmentation worse, it can cause… I have witnessed so many cases. Hormonal changes can result in profound and dramatic changes. I don't like it. It can change your hair and your skin. It causes a lot of changes. (Condom user, 33 years old, P26)*

They claim that once the implant caused changes, the removal would not solve the entire problem because "*It is not like a shirt, you do not like it, you can take it off and then it is not on your body. Is it right? The point is that it is already in your blood".* Some claimed that hormones and health were closely related. Thus when there were changes in hormones, the health would suffer.

On the other hand, users of the implant were inclined to adopt a narrower view about the impact of hormonal changes. They tended to separate hormonal changes from health.

> *I am afraid that the implant is affecting my hormones and it might affect my health. In my case, it has not affected my health yet, but it is affecting my hormones. I experienced prolonged bleeding. Many people shared that they suffered from headache and dizziness, they could not bear with the implant and they had to have it removed. I have not had them yet. (Current user, 26 years old, P10)*

"Amenorrhea is not merely amenorrhea"

Amenorrhea is the side-effects which are most frequently mentioned by participants. It was perceived differently by implant user and never-users. A number of never-users associated amenorrhea with menopause. They cited that early menopause was getting more and more popular and many women have been trying different ways to "*prolong their menstruation to enhance their beauty, youthfulness, and sexual pleasure*". In their perceptions, menopause meant aging process and the occurrence of various health conditions and emotional collapse.

> *Nowadays, you see… Menopause is prevalent. So many people wish to prolong their menstruation because they do not want to go through menopause. Together with menopause, there are so many diseases coming along. (Condom user, 27 years old, P29)*

Amenorrhea was also considered as a sign of "*bodily abnormality*", "*being a normal women*" and "*hormonal balance*", which determined their libido, vaginal discharge, and sexual pleasure. One past user explained how her friend felt about amenorrhea:

> *It has been deeply rooted in the consciousness of Vietnamese women that every month, they must have their periods. Otherwise, it must be a bodily abnormality. (Past user, 36 years old, P19)*

One condom user even related it to the cease of monthly bleeding when she suffered from stress and depression.

A few participants perceived that menstrual blood was "*toxic*", which should be discharged through monthly periods. To them, menorrhea meant the building up of toxic blood in the body which was not only harmful to health, but also causes "*discomfort*", "*irritability*", and even "*ovarian atrophy*". These findings were also consistent with accounts from SPs.

> *They [client] are afraid that if they did not have their periods, they would not be able to discharge all toxic substances out of the body. They claimed that if they could not discharge the toxic blood which must be discharged, it would not be good for their health. (SP, P3)*

They found it acceptable to experience menstrual irregularities for the first few months when their bodies got familiar with the implant. But more-than-three-month amenorrhea was considered as "*abnormal*". Participants who did not experience the absence of periods following delivery were more likely to adopt these views.

> *I have never experienced the stop of my periods before, even after delivery, I had my period back in the second month. Thus, I am worried… Yes, I am worried. (Condom user, 27 years old, P29)*

On the other hand, implant users simply saw amenorrhea as a "*temporary condition under the effect of the hormonal changes*". They trusted information published on websites of big hospitals and HPs' opinions, which described mechanisms of contraceptive action of the implant. In addition, they believed that if a contraceptive method actually caused infertility and had adverse effects on women's health, it could not "*make it way to the market*". They believed that this condition would disappear once the implant was removed. Undergoing pregnancies and experience both prolonged bleeding and amenorrhea while breastfeeding made it easier for implant users to tolerate and accept menstrual irregularities.

> *I am not afraid of it because it is just similar to when I breastfed my children. After the delivery of my first child, my period came back after 1 year. With the second child, I had my period back after 3 months. I found that it did not affect much […] After delivery, I had my period for up to 15 days. So I think I can tolerate it, it is not worrisome for me. (New adopter, 31 years old, P6)*

An understanding of how implant users overcome their fears can be used to guide FP counseling and development of communication materials to effectively reassure prospective implant users and dispel their misconceptions.

Fear of 'not matching'

Participants also expressed concerns about if the implant would "*fit*" or "*match*" their bodies. The implant was considered as being matched their bodies if they did not experience undesirable side-effects. It is interesting to note that although both implant uses and never-users expressed these concerns, implant users seemed to be more willing to try it to see if the implant would fit their bodies. "*Experiencing is believing*" and "*trying is believing*" were recurrently cited by new adopters.

> *If the implant does not fit me, I will remove it. Trying is believing. (New adopter, 40 years old, P4)*
>
> *About side-effects, I do not worry too much. Everyone's hormones are different so I only know if I try it. (New adopter, 26 years old, P10)*
>
> *Every one's body is different. I might be not lucky and might suffer from side-effects like other people, prolonged bleeding for example. If this is the case, I can remove the implant because the implant does not match my body. Just that! (New adopter, 32 years old, P1)*

The above quotes suggest that the fear of "not-matching" can be mitigated to by reassuring women that the implant can be removed at any time in case of "not-matching". The idea of "matching" was used by SPs to encourage reluctant clients to try the implant by confirming that the best way to determine if the implant "matches" their bodies is to actually experience it.

> *When clients come to me, I often tell them that they should try to method to see if they have side-effects or not […] I tell them I cannot tell if the implant matches their bodies. If I could foresee this, I would have told them. (SP, P3)*

These findings might give SPs in general some useful suggestions regarding how to respond to their client's concerns during counseling sessions, as well as the design of communication materials for the implant.

Fear of pain and transportation of the implant

Fear of pain is also a major hindrance to potential users of the implant. Participants stated that they were afraid of injection, having a cut in the skin, and bruising and swelling after insertion. Never-users of the implant expressed a firm belief that both insertion and removal were very painful procedures.

> *The implant is inserted under the skin, so both insertion and removal should be very painful. Cutting and boring through the skin must be very painful. (Single, 25 years old, P23)*

For implant users, although they were reassured by their friends, they still expressed an overwhelming fear of pain.

> *I was afraid of pain. I told you I had given birth once time, I was terrified of pain…. My friends told me that the insertion was not painful at all but I was still anxious. (New adopter, 27 years old, P2)*

Some implant users also recalled their worry about transportation of the implant in the body. However, SPs stated that it was not difficult to reassure their clients and dispel

their fears over pain and transportation of the implant. They confirmed with their clients about the presence of desensitizer and gave them the chance to eye-witness an insertion procedure if they would love to.

Other concerns

While never-users concerned much about amenorrhea, prolonged bleeding was the top concern among implant users.

> *Prolonged bleeding causes loss of blood, loss of much blood is not ok at all. I had to remove it. It was not clean also. (Past user, 28 years old, P11)*

However, according to SPs, clients who came to the clinics often confused between prolonged spotting with menorrhagia[18]. Most of new adopters felt that they could only tolerate prolonged bleeding if it lasted for less than 10 days.

Reduced libido and vaginal dryness were among the most well-known side effects of the implant, followed by menstrual irregularities. Participants seemed to place a great value on sex. A satisfying sexual life was essential to overcome different sorts of stress and tiredness in life, bringing joy and pleasure for both the husband and his wife. They believed that low libido and unsatisfactory sexual experience could be "*affects family life" and "devastating to their marriage*".

> *For me, I attached much importance to sex. That is the reason why I am reluctant [to use to implant] until now. (New adopter, 25 years old, P5)*

Bad skin was also of significant concerns for both users and non-users because it affected their appearance and that treatment was complicated and time-consuming. Some participants were extremely afraid of gaining weight. This fear was profoundly expressed by post-partum participants.

> *I am afraid of weight gain the most. After delivery, I have already put on a lot of weight. I do not want to take any more unwanted weight gain. (New adopter, 31 years old, P6)*

***F*ear of unintended pregnancies**

Fears of unintended pregnancies motivated women to consider and adopt the implant. Some participants stated that unintended pregnancies could pose a severe threat to their health because of multiple historic C-sections.

> *So doctors warned me. I already had two caesarean sections, if I get pregnant, it will be very dangerous. So I have to protect myself. (Condom user, 33 years old, P26)*
>
> *I just need a reliable method. I have just had a caesarean section, so I did not want to get pregnant too soon. (Past user, 29 years old, P16)*

One participant recalled her worries about the risk of getting pregnant and having to take emergency contraceptives as a provisional solution:

[18] Heavy bleeding

> *I thought to myself that I had better use the implant as soon as possible because a week ago, my husband could not control his desire. I then had to use 72 hour emergency contraceptives. I think that drug is not good for my health at all. (New adopter, 25 years old, P5)*

Abortion-related experiences especially built up women's fear of unwanted pregnancies. Eight participants spontaneously revealed that they used to have an abortion in the past. Among those, two participants recalled their life-threatening status as a result of massive hemorrhage and retained products. One new adopter expressed profound feelings of guilt after her abortion:

> *I planned to come to the clinic to have the implant, but it was just before I was about to go… I had to terminate my pregnancy. I really felt pity for the unborn baby. I was overwhelmed with feelings of guilt. After that abortion, I was determined that I would have to use a method which guarantees 100% of protection. You know… giving up a baby is very traumatic, very traumatic. I never want to undergo this again. (New adopter, 27 years old, P2)*

Negative experience seemed to strengthen women's decision to use the implant. A similar example was also found in the following quote from a SP:

> *A month ago, there was a client coming to the clinic. She told me that she was already counseled about the implant. Actually, she used to come here for the implant, but after being counseled about side-effects, she was afraid and ran away. That day she came for abortion and she made an appointment for implant service in two weeks. Unwanted pregnancy is very traumatic, economically and mentally. (SP, P4)*

However, according to SPs, abortion-seeking clients were not likely to use the implant.

> *I: Which methods do clients who seek abortion services often use?*
> *P: At my clinic, most abortion clients chose pills, only few use the implant. Normally they use pills because the pills have two benefits. It helps prevent pregnancy and at the same time, it restores the lining of the uterus. After being counseled, clients often choose pills. (SP, P1)*

It was unclear from this study why the implant is not common among abortion-seeking women.

Lastly, most participants believed that an unplanned pregnancy could "*turn their life up-side-down*" and they could not take good care of their children. One client recalled:

> *I told my husband that I gave birth this time only, because taking care of my first child was too hard, that I had no idea what it is like with the second child. I found that it has already been too hard for me, completely exceeding my initial expectations. So many plans were turned upside down […] I do not want to be in same situation as my older sister. The first child was not paid attention sufficiently. He was still small and was not aware of much thing. He just felt being ignored. So I think I must be determined. (New adopter, 26 years old, P5)*

Fear of unintended pregnancy was strongly expressed by postpartum women, especially first-time mothers, as a result of overwhelming experiences with pregnancy, delivery and taking care of children. Many participants shared that their periods came back right away after delivery, which also meant the return of their fertility. One participant stated she had reasons to worry about getting pregnant postpartum, even this period was often considered as having low risk.

> *Some of my friends did not use any methods. Just 7 months after delivery, she got pregnant again. (New adopter, 25 years old, P5)*

Therefore, postpartum women were more motivated to find a highly effective method compared to others. SPs stated that postpartum women accounted for a large proportion of implant users at their clinics. However, most current/past users waited for their periods to come back or until their child was six month old to use the implant.

"I cannot use other methods"

While majority of implant users in this study choose the implant because of its positive attributes (as discussed in the advantages of the implant), others stated that they opted for the implant because they had limited choices. Specific health conditions such as C-sections and uterine fibroid[19], severe side-effects when using other methods limited contraceptive choices of these women. As shared by one past user:

> *I used the implant because I urgently needed it. To be honest, I have uterine fibroid, I cannot use the pills […] Before the implant, I have attempted the IUD twice but I suffered from severe stomachache and infections all the times. (Past user, 36 years old, P19)*

3.1.3. Ability to act

All participants felt that they were capable of making contraceptive decisions and had no difficulties in accessing and using the implant. Strong personality and equal decision-making power in the family enabled them to autonomously adopt the methods of their choice and negotiate their use with their husbands.

a. Personal attributes

Implant users were inclined to present themselves as individuals with strong personality and critical thinking. Despite so much fear and conflicting opinions existing around the implant, they demonstrated a strong ability to judge the credibility of the information they came across in order to make a fully informed choice. Some implant users stated that they might listen to other people's opinions but did not let them drown out their own ideas.

> *I am kind of stubborn so I rarely follow other people's opinions. Although I listened to them but I am always the one to make the final decision. (New adopter, 27 years old, P2)*
>
> *Every individual has her own standpoint. Whenever I make a decision, I am hardly or rarely distracted by divergent opinions, like some people said this, others said that. I always listen to different opinions and do my own analysis. (Current user, 30 years old, P3)*

[19] Benign muscle tumors of the uterus

Others claimed they loved to experiment new things. They were willing to take risks, believing that any innovative products coming with its own shortcomings.

> *I have an impulsive nature, whenever I made a decision, I am always adamant without the lightest reluctance and hesitation […] I am not afraid of new things. It is the way thing works out in this life, modern products rarely come along with energy efficiency. If we are always shied away from new things, we cannot do anything. (Current user, 33 years old, P12)*
>
> *Frankly, I always pioneer in trying new things. As long as it is new, I would love to experiment. I love novelty. I am kind of risky by nature. (New adopter, 25 years old, P5)*

These findings offer implications for development of communication materials for the implant. The image of the implant should be portrayed in alignment with the way implant users perceive and feel about themselves.

b. Power dynamics within the family

A strong equal husband-wife relationship was observed in this study. Husbands did not seem to be a barrier for women's contraceptive utilization. The condom, a contraceptive method requiring spousal collaboration, is a typical example to demonstrate this egalitarian relation.

> *If I tell my husband that today is "safe" then he just goes ahead. If I tell him to use condoms, he is never against it. When to use and how to use the condoms are absolutely up to me. (IUD user, 40 years old, P22)*
>
> *I never have to buy my condoms myself. If he buys something that is too smelly, I ask him to switch to another brand. He just goes to the drugstore, asking for the best condoms. (Condom user, 27 years old, P21)*

Autonomous decision-making power was demonstrated in women's ability to made decision on their own. Four out of 20 implant users revealed that they actually had their implant inserted without informing their husbands in advance; however, they strongly trusted that their husbands would support them.

> *I: Did you tell your husband that you are about to have the implant?*
> *P: No. I think he will totally support this issue. I used to use other methods previously and he had no problem with it. Although I have not told him but I believe he will support my decision. (New adopter, 32 years old, P7)*

Equal decision-making power also allowed women to effectively negotiate contraceptive use with their husband. A number of participants stated that there was no single method which was satisfying to both the husband and his wife at the same level. Therefore, inconvenience and sufferings caused by contraceptives should be divided equally between the husband and his wife.

It is the acceptance and endurance between the husband and his wife, based on mutual respect and comfort. He suffers now and I would suffer later. That's it. There is no other way. (Condom and injectable user, 33 years old, P26)

He feels uncomfortable but I have no problems with condoms. I told him that I have already suffered a lot with contraception [side-effects of the implant], now it is his turn. (Past user, 36 years old, P19)

Beyond FP, half of participants claimed that they had dominant voices in making decisions about the number, timing and spacing of their children, even if their wishes were against their husbands' desire.

I: In your family, who is the main decision-maker?
P: Me
I: What about in case of conflicting opinions?
P: Still me. (New adopter, 27 years old, P9)

Whether or not to get pregnant is my decision. It is my body. No one can force me to something I do not like. (New adopter, 33 years old, P13)

The other half cited that they were always able to reach a consensus with their husbands. They believed that "*giving birth and children is an important business",* therefore, it was important for them to have "*mutual consent*" and "*harmony*". Only one participant stated that in case of conflict, final decision would rest with her husband.

3.1.4. Norms

Two children, ideally one boy and one girl, were considered as desired number of children for most participants.

It is not like in the past when women gave births whenever she conceived. Nowadays, each couple wants to have 2 children only. (Current user, 26 years old, P10)

Son preference was reflected in the accounts of a few participants; however, much relaxation was observed. Some mentioned several tips to intentionally select the sex of their children. Interestingly, while son preference is normally considered as an burden for women, one participant used it as a strategy to gain her power in the contraceptive decision-making.

My husband did not complain anything about condom use. I told him that if he wanted a baby boy, he would have to be patient and bear with it. If he wanted another baby girl, then I would not force him to do anything. (Condom user, 27 years old, P29)

Majority of participants cited that they did not face any child-related pressure from their husbands and their families, stating that their husbands were "*very open-minded*", "*does not care about sons or daughters*", and "*either son or daughter is our children*".

Regarding the perception of a good husband, it was of uniform across accounts of all participants that they emphasized the "sharing" between husbands and wives.

A good husband means respecting and sharing with his wife. (New adopter, 27 years old, P2)

The most importance thing is the sharing between the husband and the wife, even regarding the smallest issues. (Current user, 35 years old, P3)

What I love the most is sharing. What I fear the most is that I could not share my worries with my husband and he did not understand me. (New adopter, 31 years old, P6)

3.2. Interpersonal

3.2.1. Roles of friends[20]

Friends and peers seemed to be the most significant factor in the adoption of the implant. As discussed above, friends' opinions and ideas were considered as the most reliable source of information. Most participants stated that they could openly share and discuss with their friends about contraceptive methods. Majority of participants stated that they were aware of the implant for a long period of time. However, the tipping point of implant adoption appeared to be substantially triggered by friends.

P: […] Actually, I have just decided a couple of days ago.
I: What made you decide so quickly?
P: Honestly, I talked with my younger sister about this issue by chance and she shared with me that she had her implant inserted at this clinic. (New adopter, 32 years old, P1)

It was easier for women to make decision if they had their friends and acquaintances who used to use or were using the implant.

I am not courageous enough to be the pioneer. But provided some one used the method, and I also waited for 6 months before I made my final decision. I think listening directly from acquaintances and friends are most trustworthy… I always need actual lived experiences. No matter how interesting the method is, I would never dare to be the pioneer. (New adopter, 40 years old, P4)

During counseling, clients often feel more comfortable to use the implant if they have friends and relatives who use the implant and feel good about it. Other clients are more confused and reluctant. (SP, P3)

Once they tried the implant and their expectations were met, they enthusiastically recommended the method to their friends, as stated by one participant:

I cajoled dozens of my friends to follow me. (Current user, 33 years old, P12)

However, some new adopters stated that they would need to experience the implant for a certain period of time before recommending the method to others. Facebook groups

[20] Family members and acquaintances that are of the same age with participants are included in this group because they influence women's user in the same way as peers and friends. Roles of mother and mother-in-laws are discussed in a separate section later.

and online forums seemed to be the most popular way implant users spread their opinions and experiences.

More importantly, motivation for switching to a new contraceptive method sometimes was stimulated by their peers' opinions, rather than coming from their own fertility intentions and past experiences. A "*so-so*" method was accepted until their friends recommended a new method by "*whispering in my ears about that method because I am lazy to look for information"*. They felt more secured and reassured if they were part of a group who looked for information and tried the implant together, as metaphorically expressed by a current implant user, "*if we would have to die, we would have died together*".

On the other hand, fears about the health impacts of the implant, expressed by their peers could easily put those who were considering the method off. This was observed in group dynamics during the second FGDs. One participant changed her mind to use the implant after listening to a story about a women suffering from ovarian atrophy because of hormonal disturbances from another participant.

3.2.2. Roles of partners

A number of participants shared that they always consider their husband's feelings and opinions in their contraceptive decision.

> *I did not want to continue to use condoms because I felt pity for my husband. My husband used to make a joke that "Are you going to make me use the condoms in my whole life?" That is it. I am determined that I have to find a method so that we do not have to use the method any longer. (Current users, 30 years old, P3)*
>
> *I do not like withdrawal. I feel that it creates troubles for my husband. (New adopter, 31 years old, P6)*

One participant even stated that it was important for women to be "sensitive" to their husband's feelings.

> *Sometimes they say that they are ok with condoms, and that they have no problems with it but we need to be sensitive about their reactions… (Condom and injectable user, 33 years old, P26)*

After making decision, majority of participants (16 out of 20) discussed and informed their husbands about their choice of the implant. Although participants stated that their husbands often advised them to choose the methods that were "*effective*" and "*least harmful to their health*", they shared that their husbands neither actively searched for information nor giving any disapproving comments about their decisions.

> *Honestly, when I shared with him, he just told me that it was up to my decision. He did not give any comments. (New adopter, 25 years old, P5)*
>
> *I told him in advance. This [the implant] is the most modern method, upon removal, fertility will return immediately. Compared to other methods, it is very safe. It is safer than pills, for sure. I have to tell him in advance so that he would not wonder or question me later. (New adopter, 25 years old, P10)*

The involvement of the husband in the implant adoption appeared to be modest. However, their role was more apparent in implant continuation. In case of side-effects, the husbands generally expressed concerns when their wives shared their worries and encouraged implant removal. In few cases, the husbands initiated removal decision. A SP recalled:

> *One client came to me, saying that her husband told her "What is the implant for?" Because of spotting, they did not dare to have sex […] I witnessed a husband escorted his wife to the clinic for implant removal because of this. (SP, P4)*

Considering the whole process of contraceptive decision and utilization, it seemed that the husband played a fairly passive role. To explain this, there seemed to be two dominant discourses emerged from the accounts of participants. On the one hand, the husbands were perceived as being "irresponsible" and "selfish". Some participant claimed that Vietnamese males were completely careless about FP issues.

> *They do not want to do anything and do not care what women are doing. What they care is that at the end of the day, unwanted pregnancy does not occur… My brother-in-law even did not know which method my sister is using and when she started using it. (New adopter, 25 years old, P5)*
>
> *My husband said that it [family planning] is women's business. When I asked, he told me to do whatever I want, he did not care and that he did not know. (New adopter, 23 years old, P8)*

One participant claimed that male's lack of interest in FP because it did not have any direct effects on their health.

> *Males do not care about this issue [family planning]. We should care because it directly affects our health […] It is not that they are unable to learn but they do not pay attention to it […] Conception and delivery directly affect our health, not their health. There is no effect, isn't it? (Current user, 26 years old, P10)*

On the other hand, others perceived the male's involvement from the angle of division of responsibilities within a family, "mutual respect", "trust", and "rights of women". As stated by a participant:

> *He always trusts my decision. In generally, each of us has different concerns and different business to decide. (New adopter, 27 years old, P2)*
>
> *He knew that I have learned about it [the implant] thoroughly before making this decision. So he greatly respected my choice. (New adopter, 27 years old, P2)*

It is difficult of draw a clear line between these two discourses because they were both reflected in the accounts of same participants. There seems to be an overlap between the burden of being the one who is responsible for contraception, and the freedom and autonomy in contraceptive decision-making.

3.2.3. Roles of mothers and parents-in-law

FP was generally considered by most participants as a "*sensitive topic to discuss within the family*", especially between members of different generations. Some participants asked their parents for their opinions about the implant; however, they had no clue about the method.

While mothers and parents-in-law had little influence on women decision to adopt the implant, they might play a role in their continuation of method. As illustrated in section 2.3, they encouraged, and even forced, women into removal decision due to worries about prolonged bleeding and misperceptions about amenorrhea. On participant recalled:

> *It [prolonged bleeding] was so interminable that I could not remember for how long I had it. I just remember it was so long that my mother noticed and became fidgety. She urged me to have the implant removed. (Past user, 27 years old, P18)*

3.3. Community and enabling environment

Three emerging barriers at community and environmental level in this study included costs, lack of information, and limited access to implant services.

3.3.1. Costs

Never-users stated that costs for implant were much higher compared to other methods, claiming that the current prices of the implant were unaffordable for many women in Hanoi. The prices for the implant cited by participants ranged from *1,800,000 VND ($90) to 3,000,000 VND ($150)*. Moreover, they also raised concerns about "*investment preferences*", which served as a hindrance for women to access the implant.

> *Although we are talking about Hanoi, not all women are willing to spend a huge amount of money for the implant. The prices of the implant are much more expensive than other methods. The implant can be used for 3 or 5 years so if we take the full period of 5 years into calculation then it is not too expensive. But giving up such a huge amount of money and having the willingness to spend that much money for a contraceptive method is a real issue. Let say, the IUD – it is provided free of charge. If you go want to pay out-of-pocket, then it is only 300,000-500,000 VND ($15-$25). The most expensive oral pill is only 60,000-70,000 VND ($3) monthly. It is easier to spend bit by bit every month rather than having to spend a big amount of money all at once. (Condom user, 34 years old, P25)*

For most users of the implant, the service fees were considered as highly reasonable and acceptable. By recognizing its long-lasting protection, they concluded that the implant was actually more "*cost-effective then condoms*". However, they raised concerns about the costs of in case of early removal and costs for removal services.

> *I think the price for the implant is reasonable. It can be used up to 3 years, so it is very cheap. The main point is if it matches my body. If it matches and I can use it for 3 years then it is ok but if I have to remove it early, then it is quite expensive. (Past user, 26 years old, P10)*

Costs-related barrier to the implant was also reflected in the perceptions of both women and SPs about the prospective users of the implant. They believed that "*women in urban areas*", "*clerical employees*" and "*those with high income*" were more likely to use the implant. Group discussions with never-users of the implant suggest that cost was an overarching barrier. Removal of this barrier might help never-users to overcome the fears of infertility and adverse health impacts.

> *P26: What is the service fee for the implant at MSI clinics?*
> *P21: It is 900,000 VND [a partially subsidized program]*
> *P26: Oh, I will reconsider the implant then. Oh, yes. Let try it! We can always remove it at any time, we can always do that.*
> *P25: If our bodies do not respond to the implant favorably, they will definitely remove the implant for us.*
> *P21: I am just worried it would not fit my body.*
> *P25: No, if it does fit you, they will have to remove it for you, for sure.*

3.3.2. Lack of information

Lack of information was also a hindrance to the uptake of the implant. As stated by many participants, most of their friends were almost unaware of the method. This suggests an enormous gap for communication campaigns.

> *Not many people know this method. Seriously, I asked my friends… But it is almost a brand new method for them… When I asked older people like my parents, they do not know any methods rather than the IUD and condoms. (New adopter, 25 years old, P5)*
>
> *Most of my friends do not know the method. I have just known it thanks to my younger sister. (New adopter, 40 years old, P4)*

3.3.3. Limited access to implant services

While the implant has been included in the National FP program, it is not widely available across provinces. As stated by a participant from Vinh Phuc province:

> *I used to ask one doctor from a public hospital in my town, he told me that they actually provided this method but they had not served any clients. They told me that if I would like to use the method, they would provide it for me on another day. Because my sister had her implant inserted at this clinic, I decided to come here. (New adopter, 40 years old, P4)*

MSI clinics were perceived by participants as a major provider of the implant in Hanoi. A quarter of implant users admitted that besides MSI clinics, they did not know any other implant SPs. Others cited "*big hospitals*" and some private clinics.

However, limited physical access was not the only problem. Lack of trust in health facilities compromised the willingness of FP users to access implant services. While they were reluctant to use services at private clinics because of its perceived poor quality and profit-driven motive, they were not comfortable with the "*bureaucracies*" and "*crowdedness*" at public hospitals.

> *People always see MSI clinics as private facilities. Private sector is always associated with commercial service provision. They might doubt about the quality of services. Regarding National Obstetrics Hospital, many women want to use the implant services there but the hospital is too crowded and they would have to wait. (Condom user, 34 years old, P25)*

Regarding enabling environment for the uptake of the implant, legal and policy context of Vietnam are described briefly in the in section 2.1 and Appendix 2. A detailed description of contextual and structural factors influencing on contraceptive implant utilization is beyond the scope of this study.

CHAPTER 4: DISCUSSION

In this chapter, key findings emerging from this study are discussed in relation to current literature. Based on main findings, corresponding solutions and recommendations are proposed and discussed.

4.1. Experience with the implant and implant services

The implant was an acceptable contraceptive method from urban users' perspective. They generally appreciated its high effectiveness. However, the incidence of menstruation-related side-effects was high. Bleeding disturbances are popular among users of progestine-only contraceptives (Adams and Beal 2009). Reviewing bleeding patterns of 942 women using the implant from 11 clinical trials, Darney et al. (2009) reported that 78% of all reference periods (RP)[21] during the first two years are characterized by menstrual irregularities[22]. As implant users tended to judge if a side-effect was normal based on its incidence among other users, it is important for SPs to sufficiently inform them about the commonness of menstrual irregularities.

Prolonged bleeding was dominant reason for implant removal. This is consistent with other studies conducted in Vietnam (TTHRHC 2010, Tran 2005). SPs stated that it was almost impossible to predict the most vulnerable period for prolonged bleeding. Croxatto et al. (1999) confirmed this, showing consistent incidences of prolonged bleeding of around 20% across 7 RP staring at month 4 until the end of year 2. Excessive endurance of prolonged bleeding might lead to unnecessary delay in seeking clinical help and possibly harmful effects on women's health. These findings emphasize the importance of follow-up care. Ready access to post-service counseling and prompt clinical interventions should be ensured to facilitate continuation of the implant. In addition, removal services should be made accessible to women at any point during use. Furthermore, in pre-service counseling, prospective users should be provided with information about in which case and when to seek clinical help. Careful consideration is required for scaling-up of the implant in resource-constrained settings, where frequent access to health facilities and health workers (HWs) is questionable.

Vaginal dryness and reduced libido were cited by implant users and SPs as common side-effects of the implant. They were also one of the most well-known side-effects reported by new adopters. Strikingly, these side-effects are not mentioned in any mainstream guidelines for implant services in Vietnam, including the 2009 National Guidelines on Reproductive Health Care (MoH 2009). They are also absent in authoritative international guidelines[23]. While SPs draw intensively on the 2009 National Guidelines to guide their practice, this suggests possible room for improvement in the updated version of the guideline. According to SPs, women were less likely to tolerate them; however, simple interventions such as vitamin E and other supplements can make a significant impact on continuation rates. In a systematic review published by Adams and Beal (2009), decreased libido is documented as a rare side-effect. Their unusual popularity observed in this study might be attributable to the belief that vaginal dryness and reduced libido are go hand in hand with amenorrhea, which is a common side-effect, and the importance of

[21] Reference period is defined as a period of 90 consecutive days starting on the day of implant insertion

[22] Menstrual irregularities: infrequent bleeding (33.3%), amenorrhea (21.4%), prolonged bleeding (16.9%), and frequent bleeding (6.1%)

[23] Family Planning: A global handbook for providers (WHO 2011); Providing contraceptive implant: Reference Manual (JHPIEGO 2014)

a satisfying sexual life in Vietnam (Khuat et al. 2009). Although findings from this study are drawn upon a small sample and SPs at MSI clinics only, one might question its validity and generalizability. However, it is worthy for SPs in Vietnam to be aware of such side-effects and their management. It is promising that simple client-controlled interventions might significantly improve users' satisfaction and prevent unwilling premature discontinuation. More rigorous studies are clearly required to validate these findings.

4.2. Contraceptive decision-making: Self

FP was considered as a norm in Vietnam. The most important benefits of FP perceived by participants were to take a good care of their children, to have a relaxed family life, and realize their future plans. According to Gammeltoft (1999), women in Vietnam nurture a strong aspiration for a happy and stable family and FP is "one of the most direct and visible paths to reach this goal" (p. 241). However, FP is a dilemma itself. Rumors and misinformation about numerous contraceptive methods are pervasive among FP users in Vietnam (Do et al. 1993, Duong et al. 2005, Le Thi et al. 1995, Johansson et al. 1996, Xinh et al. 2004, Nguyen and Dang 2012, UNFPA 2007). This is the backdrop for participants in this study to make their contraceptive decision. Informed choice regarding contraception cannot be made on the basis on inaccurate information and misconceptions. Participants were inclined to make up their mind about the implant prior to their visit to the clinic. However, having said that women's personal preference should be respected, SPs should always revisit their initial method choice.

The implant was perceived as a superior method because of its high contraceptive efficacy, convenience, and novelty. This study indicates that lack of knowledge about the effectiveness of the implant might be a hindrance for non-users from accessing the method. Applying the principles of behavioral economics, Stevens and Berlan (2014) argued that positive framing of FP information, for example effectiveness and continuation rates rather than failure rate and discontinuation, can have an impact on women's decision. This suggests that communication campaigns on the implant and FP counseling should focus on its advantages and positive attributes that clients appreciate the most. Findings on how women positively perceived about the implant and about themselves (personal attributes) reported in this study might be a relevant source of ideas.

The implant and the IUD are the only LARC methods available in Vietnam. This study shows that the implant is an ideal alternative to the IUD and fulfills the contraceptive needs of a proportion of urban women. Implant users generally depicted the IUD as an old-fashioned method which is associated with older generations and rural women. Such perceptions, coupled with ubiquitous myths about side-effects of the IUD, shy them away from the IUD. On the contrary, the implant was perceived as a "civilized" and advanced method, which was associated with women having good income and high level of education. The so-called "negative depiction" of the IUD partly explains the decrease in its popularity in urban areas (GSO 2013; Nguyen 2012). Assuming a stable need for long-term contraceptives among urban women, this finding suggests that the implant might offer them a much-needed long-term alternative, rather than unwillingly adopting less reliable methods.

Participants considered FP as burdensome as they had to negotiate numerous conflicting concerns. On the one hand, there were fear of infertility and fear of side-effects and health risks. On the other hand, it was the immense fear of unintended

pregnancies. Fear of infertility was the overarching fear voiced by both implant users and never-users. The perceived link between menstrual irregularities and infertility, coupled with intuitive high rates of infertility in modern society, discouraged women from adopting the implant. In broader context of Vietnamese, having children, especially son, have extremely special value and meanings (Gallup 1995, Johansson et al. 1999). Although son preference was not really noticeable in this study, it might also contribute to this overwhelming fear. Therefore, women having sufficient number of children emerge as a potential target population for the implant. Meanwhile, young and unmarried children are less likely to use the implant to protect their fertility.

Never-users expressed deep concerns about the long-term consequences of hormonal changes. Interestingly, while amenorrhea was the best tolerable bleeding pattern among implant users, it was the most worrisome menstruation-related side-effects perceived by never-users. Their narratives revealed fascinating insights into how women interpreted amenorrhea in terms of "extremely abnormal", menopause and menopause-related diseases, "speeding-up of aging process", and "building up of toxic blood in the body". These findings support the work of other investigators (Cheung and Free 2005, Clark et al. 2006). It is important for SPs to understand the underlying meanings women attached to specific side-effects and contraceptive methods in order to address the roots of misconceptions and boost women's confidence in using the methods of their choice. Such insights also offer suggestions for the development of communication materials to raise awareness about the implant and dispel misconceptions. At the point of conducting this study, no formal leaflet or pamphlets on the implant could be identified in the national FP program. Myths and truths should be presented in parallel in easy-to-understand language so that women can actively correct their misunderstanding and share the materials with members from their networks. Such materials can be useful to SPs who can draw on to effectively respond to their clients' concerns. Samples of such materials are also available (Tupange 2010; PSI Cambodia 2010); however, they should be tailored to suit the context of Vietnam.

In some cases, fear of infertility and health risks is reinforced by misinformation from SPs. One participant claimed that the doctors provided misleading information because the implant was not available at their clinics. However, it is unclear about how SPs in Vietnam perceived about the implant. It might be worthwhile to explore this topic further. In urban areas, the role of SPs in guiding women through stage of method selection might be insignificant as women have better access to information, especially the internet. However, in urban areas, the role of SPs is more significant. Duong et al. (2005) found that 30% of rural postpartum women used contraceptives according advices from HWs. Moreover, HWs in rural areas often have poor FP counseling skills and focus only on the IUD (Duong et al, 2005; Gammeltoft 1999). Therefore, an understanding of how SPs perceive about the implant is of critical importance for scaling-up of implant services and identifying training needs.

In this study, postpartum women emerged as another potential target group for the implant. Post-partum women, especially first-time mothers, often harbored a strong desire to space their pregnancy because of overwhelming experiences with delivery and taking care of their children. The optimal interpregnancy interval of between 18-23 months (Zhu et al. 1999) suggests that postpartum women might be in great need of long-term contraceptives. Vietnam has a high rate of C-sections (36%) (Gibbons et al. 2010). As the IUD is not a highly recommended method for women undergoing C-sections (Goldstuck and Steyn 2013), the implant is likely to be an ideal alternative. As shown in this study, contraceptive decision-making is a time-consuming process;

therefore, pregnant women should be counseled on the implant as early as possible, ideally during their first ante-natal visits[24]. Moreover, ante-natal care also provides SPs with a good opportunity to screen women already having sufficient number of children. As this group of women is most receptive to the implant, they should be counseled sufficient about this contraceptive option.

While the uptake of LARC methods can reduce the rates of repeat abortion (Rose and Lawton 2012), it is unclear from this study why abortion-seeking women were less likely to opt for the implant. The most possible explanation might be because they are not familiar with the method before, so a post-abortion counseling session with SPs is not sufficient for them to make decision. As indicated in this study, women often need significant time to do their search and ask for their friends' opinions before they adopt the implant. Another reason might be due to biased counseling, in which SPs direct their attention to other methods. Costs might also be a barrier because they already have to pay for abortion services. Abortion-related experiences might reinforce women's decision to use the implant, but not really initiate implant adoption decision. As repeat abortion rate in Vietnam is high (32%) (Ngo et al. 2014), this knowledge gap should be filled in future studies.

4.3. Contraceptive decision-making: Interpersonal

Roles of peers and friends

Friends and peers had an overarching influence in women's contraceptive implant decision-making. There were several ways in which peers exerted their influence on women. First, friends and peers were considered as the most trustworthy source of information. Second, peers circulated and reinforced rumors and misperceptions. Third, satisfied implant users tended to "cajole" their friends into adopting the method. Fourth, women tended to "follow" their friends in contraceptive utilization rather than being "the pioneer". Fifth, peers could trigger an unrecognized demand for switching of contraceptive methods. The first three mechanisms are also documented in other studies. Women tend to rely on their friends' opinions and vicarious experiences to make decision (USAID and FHI360 2014, Levy et al. 2015, Yee and Simon 2010). In addition, women who have favorable attitudes towards contraception are more likely to discuss with others about contraceptive methods (Boulay and Valente 2005). This study adds evidence to the growing body of literature on the relationship between women's social network and their contraceptive use.

According to Levy et al. (2015), discussion of social influence[25] should be brought into contraceptive counseling. This can be done by SPs' asking open questions such as how she know about the method of her choice and what her friends think about it. This is likely to be a win-win approach. On the one hand, implant users preferred individualized and interactive counseling. Tailored contraceptive counseling has a positive impact on contraceptive use (Garbers et al. 2012, Nobili et al. 2007). A discussion of peers influence might be a good way for SPs to achieve this. More importantly, this allows SPs to explore and address misperceptions, which otherwise might not be revealed by the clients themselves. On the other hand, this practice is also beneficial to prospective implant users. Once women themselves have the accurate

[24] FP counseling is part of ante-natal care package in Vietnam

[25] Social influence refers to the influence of women's social networks on their contraceptive use

information about the implant, they are likely to disseminate such information to their friends, contributing to dispel pervasive misperceptions.

At a larger scale, social network-based communication is likely an effective strategy to facilitate informed choice and dispel contraceptive-related rumors and myths. Yee and Simon (2010) stated that group counseling is beneficial because it "fosters discussion about contraception beliefs in the community. Not only does this teach providers about common beliefs in the community, but it also provides an opportunity for accurate information to be disseminated to the group, who then are likely to relay this information to other women" (p.7). As women place much weight on vicarious and hand-on experiences, implant users should be invited to join the discussion. Demand generation for the implant should be peer-based. Applying similar principle, internet-based communication for the implant might be worthwhile being further investigated. Facebook and popular online forums are potentially good options as women often discuss and exchange information with their friends and peer via these platforms. In urban context, access to internet is not an issue (CIMIGO 2011). Most participants in this study actually obtained implant-related information from the internet. Based on a randomized control trial on the use of Facebook as an adjunct to standard FP counseling, Kofinas et al. (2014) concluded that using Facebook as a means of communicating FP information to clients can improve client's satisfaction and increase their preference for the implant and other LARC methods compared to using paper-based pamphlet which is of identical contents.

Roles of husbands

A strong egalitarian spousal relationship was observed in this study. Participants appeared to be fully capable of making contraceptive decisions on their own and negotiate their use with their husband. Two contradicting discourses about male's involvement emerged from this study. However, considering the whole process of contraceptive implant decision-making in the context of power dynamics, the discourse in relation to mutual understanding, spousal trust, and respect seems to be sounder. The following quote appears to best capture the gender dynamics and contraceptive decision-making among urban women: *"Men will try to please their wives and let their wives to choose the methods that they find safest and most comfortable. But put it the other way round, when we use a method, we need to ask about his feelings."*

Women enjoy a rightful control over contraception; however, mutual understanding, spousal support and cooperation are essential to enhance method satisfaction and continuation, and more importantly, marital happiness. These have implications for FP communication. Communication activities should seek to transform and reinforce positive male gender norms – shared responsibility, joint decision-making, and mutual understanding. This is also in line with Vietnamese women's desire of a "good" husband as documented in this study and their aspiration for marriage, and dreams of equality and mutuality (Gammeltoft 1999).

4.4. Contraceptive decision-making: Community and enabling environment

The study has showed that health system level factors, naming unavailability of information, inadequate physical access, and high service fees have important influence on contraceptive implant utilization. Low awareness about the implant and pervasive misconceptions suggest an enormous gap in FP communication. Limited physical access in public sector is also a barrier for women from accessing the implant. However,

expansion of physical access within public sector might not be urgently required in the near future. In various settings, distance to health facilities is uncommonly a reason for non-use of contraceptives and women with unmet need are willing to travel long distances for proper counseling and services (Cleland et al. 2006). Moreover, this study indicates that private sector is likely to be a feasible delivery channel for implant services in Vietnam given public health system constraints in terms of coverage and service quality.

High costs associated with the implant seem to be as a significant barrier for a proportion of women to access the service. While this is an inherent character of CTM, the inclusion of the implant in the national health insurance program (HIP) might be a solution. The inclusion of FP into benefits package is likely to address a number of health system constraints in Vietnam as discussed in this study. Quality of health services in private sector is generally poor (Tuan et al. 2005). When the implant is included in benefit packages, health facilities offering implant services must fulfill accreditation requirements to be eligible for participation. More important, if the implant is included in the HIP in which reimbursement is conditional on quality, SPs are encouraged to offer their clients with high quality services, including adequate counseling and follow-up care (Naik et al. 2014). As discussed above, pre-service counseling and ready access to on-going clinical support is critical to ensure client's satisfaction and continuation. The inclusion of the implant might also improve the attractiveness of benefits packages, contributing to increasing participation rates and achieving universal health coverage by 2020. A pilot program on the inclusion of the implant in the national HIP should be considered.

This present study has two main limitations. First, participants were selected from MSI clinics only, rather than a broad range of public and private facilities. Women who came to MSI clinics might have distinct characteristics compared to other women, for example having better income or being white-collar workers. This might hinder the extent to which research findings can be generalized to the diverse urban women population in Vietnam. Secondly, due to small sample size, never-users of the implant do not represent wide range of methods such as pills, patch, and sterilization. Other reasons for non-use of the implant might remain unexplored.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

The implant, as the most effective LARC method available, potentially contributes to reducing high unintended pregnancies and abortion rates in Vietnam. However, its use is still very low. This is the first qualitative study in Vietnam so far seeking to shed light on this question through exploring women's experiences with the method and factors influencing their contraceptive implant decision-making.

Having less strict eligibility criteria, high level of effectiveness, convenience, and novelty, implant is an acceptable alternative to the IUD and potentially fulfills the contraceptive needs of a proportion of urban women in Vietnam. Negative perceptions of the IUD among urban women partially explain its decreasing popularity. However, menstruation-related side-effects are highly common. Prolonged bleeding is the least tolerable side-effect and the leading reason for implant removal. This study highlights the importance of continuity of care. Ready access to post-service counseling, clinical management of side-effects, and removal services is critical to enhance women's satisfaction and continuation. Although the implant is recommended as a good candidate for FP program in developing countries, the scaling-up of the implant deserves thorough consideration, especially in poor-resourced settings. The exceptionally high incidence of vaginal dryness and reduced libido documented in this study signify a need for more rigorous studies to validate this finding and evaluate whether or not prescribing vitamin E and other supplement can have a positive impact on implant satisfaction and continuation. National guidelines can be revised accordingly.

Women's contraceptive decision-making is a complex process. Urban women find it burdensome and complicated as they have to negotiate and weigh numerous conflicting concerns. Fear of infertility was the overarching fear given the salient value of having children and perceived high risk of fertility in modern society. Non-users of the implant harbor profound fear of hormonal changes and various misconceptions about amenorrhea. An understanding of underlying meanings women attached to the implants and its side-effects allow SPs and FP program implementers to address the roots of misconceptions and facilitate informed contraceptive choice. The need for more vigorous communication activities with appropriate communication materials is clearly identified.

This study shows that urban women's contraceptive implant decision-making is less of an individualistic and rational process than being shaped by their social networks. Friends and peers seem to be the most dominant source of influence. The mechanisms through which peers and friends exert their influences offer useful implications for communication and demand generation activities. The inclusion of discussion of social influence into FP counseling and social network-based communication are potential approaches to facilitate women's informed contraceptive decision-making, improving awareness of and access to the implant. Facebook appears to be a promising platform to disseminate information and dispel misperceptions among those who are most likely to adopt the method. Significantly, this study reveals that males are no longer a barrier to urban women's contraceptive utilization. However, they play a critical role in enhancing women's satisfaction with the implant and implant continuation. Communication activities should seek to transform and reinforce positive male gender norms with an emphasis on sharing and mutual understanding.

As FP program in Vietnam is in a transitional period between free-of-charge delivery to commercial provision, urban women with the ability to pay are expected to cover their

contraceptives by out-of-pocket payments. Findings from this study suggest that private sector is a potential channel to deliver contraceptive implant services safely and effectively, if not is preferred by urban women. This study has identified two potential target populations for the implant, naming women having sufficient number of children and postpartum women. Ante-natal visits offer SPs a great opportunity to introduce the implant to those who are most are receptive to the method. The fact that abortion-seeking women seem to the ideal recipient of the implant but are less likely to adopt this method reveals a gap for future studies. At national level, in order to mitigate cost-related barrier to the implant among urban women, the inclusion of the implant in the HIP is worthwhile to be considered.

Based on study findings and evidence from current literature as discussed above, key recommendations are summarized under three main categories as follows:

Pre-service counseling

- Revisit client initial choice of method
- Sufficiently inform prospective clients about advantages, side-effects of the implant, and when and where to seek help
- Frame information positively
- Bring social/peer influence discussion into FP counseling

Service provision and communication

- Ensure continuum of care in terms of ready access to post-service counseling, prompt clinical management of side-effects, and removal requests
- Provide pregnant women with information about the implant and other contraceptive options during antenatal visits, especially women having sufficient number of children
- Deploy social network-based communication and peer-based demand generation, making use of online platforms
- Develop user-friendly communication materials for the implant with a focus on myths and truths to dispel misconceptions

Future research and evaluation

- Conduct a rigorous study to evaluate the incidence of vaginal dryness and reduced sex drive among Vietnamese implant users, and assess the effectiveness of vitamin E and other supplement on the implant satisfaction and continuation. National guideline on implant services should be adapted accordingly
- Pilot the inclusion of the implant in the national HIP to evaluate its feasibility and effectiveness
- Investigate SPs' perspectives and attitudes towards to implant to facilitate scaling-up of implant services
- Examine abortion seekers' beliefs and attitudes towards the implant

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APPENDIX

Appendix 1: Summary of country profile

Vietnam is located in Southeast Asia with a total land area of 310,000 km^2 and 3,444 km of coastline, sharing boundaries with China to the north, Laos and Cambodia to the west. Mountainous and forest areas make up three quarters of Vietnam's territory. The country is divided into six main regions (Northern midlands and mountains, Red River Delta, North and South Central Coast, Central Highlands, Southeast, and Mekong River Delta) with 63 administrative cities and provinces (GOV 2015). Hanoi, the capital city, is considered as the socio-political center of the country.

With a population of 89.5 million, Vietnam is ranked as the 13th most populous country in the world and the 8th in Asia. Females account for 51% of the total population. Total fertility rate is 2.09 in 2014, slightly below the replacement birth rate (1.85 and 2.21 for urban and rural areas respectively) (GSO 2014). Since 2009, Vietnam has entered the period of "golden population structure", which refers to the dependency ratio of less than 50%. In 2013, the dependence ratio is 46%. The annual population growth remains at the rate of about 1.05%. Skewed sex ratio is observed in Vietnam with the ratio of 114 baby boys per 100 baby girls. Vietnam is one of the countries having the highest population density in Southeast Asia, with 270 people /km^2. Red River Delta and Southeast, two areas with the highest density, are home to 40% of the population. Around 32% live in urban areas (GSO 2013). Vietnam has 54 ethnic groups, in which Vietnamese (or Kinh) is dominant with a share of more than 85% (CPHCSC 2010).

Vietnam enjoys a stable political environment under the leadership of the Communist Party. Over the past decade, Vietnam has achieved significant progress both economically and socially. Vietnam has become a middle-income country since 2008. Gross domestic product (GDP) of Vietnam in 2014 is $186.2 billion with a strong upward trend over the past decades (World Bank 2015a). The annual GDP growth rate in 2014 is 5.98%, in which, industry and construction shows the highest growth rate (7.14%), followed by services (5.96%) and agriculture (3.49%). As result of economic growth, the living standard and poverty rate have been improved. In 2014, unemployment rate among working population stands at 2.08%, lower compared to previous year of 2.2%. Proportion of households living under national poverty line in 2014 is 8.2%, a decrease of 16% compared to 2013 (GSO 2014). Gross national income per capital in 2014 is $1,890 (161/213 countries). However, based on calculation in international dollars (purchasing power parity), this figure is $5,350, making Vietnam to the position of 152 out of 213 countries all over the world (World Bank 2015b).

In 2013, Vietnam's literacy rate is 95% (97% and 93% for men and women respectively). Vietnam has achieved universal access to primary education with 98.6% of children complete primary school (GSO 2014). The performance of health system is considered as encouraging based on positive signal on a number of key indicators. The average life expectancy is 73 years old (71 and 76 for males and female respectively),

higher compared to global average of 71.5 (GSO 2013). About 96% of children under the age of one are fully immunized with 8 vaccines. Maternal mortality ratio stands at 69 per 100,000 live births in 2009, significantly reduced from 223 in 2000. Infant mortality rate in 2012 is 15.4 per 1,000 live births, which only falls short of 0.6 per 1,000 live births compared to MDG 4. However, disparities exist among ethnic minority groups and geographically remote areas (MOH 2013).

In 2011, government spending on health accounts for 2% of GDP and 8.1% of state budget. The number of doctors per 10,000 is 7.46 in 2012. Health insurance coverage is 67%, increased stably since 2007. Vietnam has strived to achieve universal health coverage of 70% by 2015 and 80% by 2020 (MOH 2013). In 2010, it is estimated that cardiovascular disease, road injuries, and low back pain are the leading causes of premature death and disability, measured in DALYs[26]. Compared to burden of disease data in 1990, there is a rise of non-communicable diseases with the most significant increase falls on liver cancer, and drug use disorder. Whereas, communicable, maternal, neonatal and nutritional diseases are generally on the decline, except for HIV/AIDS (IHME 2010).

According to the 2014 Human Development Report which presents Human Development Index[27] (HDI) for 187 countries and territories, Vietnam's HDI is 0.638 (an increase of 35% compared to 2013), positioning the county at the rank of 121/187. Vietnam has been classified as medium human development category (UNDP 2014). On UNDP index of gender inequality, Vietnam is ranked 58/152 (UNDP 2014).

Key health and socio-economic indicators of Vietnam

Category	Indicator	Value	Year
Demographic characteristics	Population (million)	89.5	2013
	Population density (people/km^2)	270	2013
	Population growth rate (%)	1.05	2013
	Sex ratio at birth (number of boys over 100 girls)	114	2013
	Total fertility rate	2.09	2014
	Dependency ratio (%)	46	2013
Socio-economic indicators	Gross domestic product (GDP) (billion USD)	186.2	2014
	GDP growth rate (%)	5.98	2014
	Industry and construction (%)	7.14	2014
	Service (%)	5.96	2014
	Agriculture (%)	3.49	2014
	Gross national income per capital (USD)	1,890	2014
	Unemployment rate among working population (%)	2.08	2014
	Poverty rate (under national poverty line) (%)	8.2	2014
	Literacy rate (%)	95	2013
	Primary education coverage (%)	98.6	2013
Health indicators	Number of doctor per 10,000 people	7.46	2012
	Percent of state budget spent on health (%)	8.1	2011
	Public share of total health spending (%)	44.6	2010
	Health insurance coverage (%)	67	2013

[26] Disability-adjusted live years: A measure of healthy live years lost due to premature death and morbidity

[27] HDI is a summary measure of three basic dimensions of human development: a long and healthy life, access to knowledge and a decent stand of living.

Category	Indicator	Value	Year
	Life expectancy (years)	73	2013
	Males (years)	71	2013
	Females (years)	76	2013
	Antenatal care coverage (3 visits) (%)	89.4	2012
	Skilled birth attendance (%)	97.9%	2012
	Maternal mortality ratio (deaths per 100,000 live births)	69	2009
	Infant mortality rate (deaths per 1,000 live births)	15.4	2012
	Under five mortality rate (deaths per 1,000 live births)	23.2	2012
	Proportion of children under 1 year of age who are fully immunized (8 vaccines) (%)	96	2013
	Under 5 malnutrition rate (%)	16.2	2012
	Contraceptive prevalence rate (%)	77.8%	2011
	Unmet need for family planning (%)	4.3%	2011
	HIV prevalence rate (per 100,000 people)	237.5	2012

Sources: MOH 2013; GSO 2014; GSO 2013; World Bank 2015a; World Bank 2015b

Appendix 2: Key milestones of Vietnam's population program

The program was first launched in the north in 1960s and then expanded nationwide in 1975. Haughton (1997) added that in order to reduce total fertility rate of about 6.1, two-to-three child policy was implemented as early as in 1963; however, resources were poorly allocated. In 1972, the government rigorously advocated for the uptake of the IUD and in 1981, abortion was made widely available and accessible. Family planning campaigns were rolled out across villages by government HWs in the effort to meet the targets for IUD insertions and abortions (Haughton 1997).

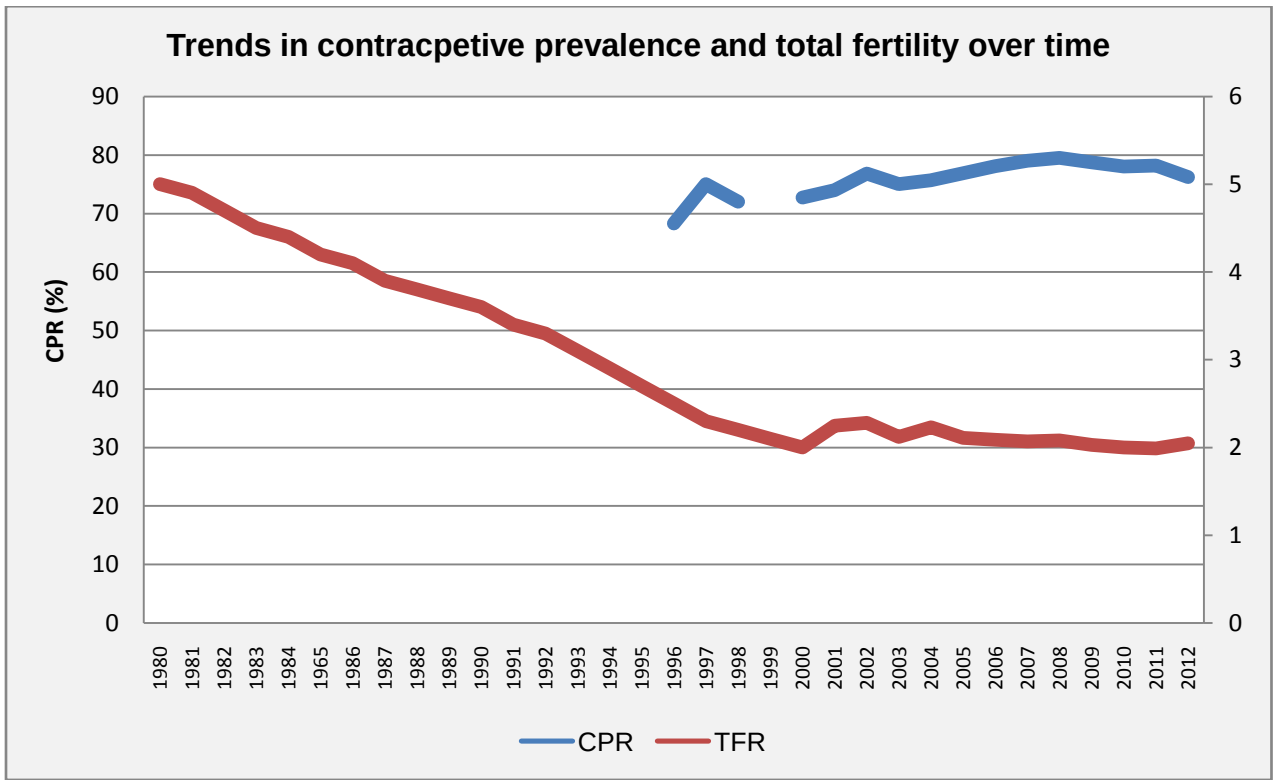
Structural adjustment program (Renovation) in 1986 marked the beginning of maturity period, which is characterized by a shift to birth control. In 1993, one-or-two child policy was officially formalized and FP program was considered as a prioritized area in national socio-economic development plan (Pham et al. 2012). In June 1993, the first National Strategy on Population and Family Planning was approved, with the target of reducing total fertility rate from 3.2 in 1993 to 2.9 by the end of 2000 (Pham et al. 2012). Late marriage and long spacing between births were enthusiastically advocated, coupled with punitive measures for violations and financial incentives for sterilization. All contraceptive methods are provided free of charge to married women since 1963 (mainly the IUD and condom) (MOH 2011). FP messages were promoted openly and ubiquitously on mass media. Haughton (1997) believed that these factors significantly contributed to the rapid drop in TFR in Vietnam, to as low as 2.3 in 2000.

The introduction of the 2003 Population Ordinance, the highest legislative document on population, was a significant milestone in family planning policy in Vietnam. For the first time, the reproductive rights of couples to decide freely on the number, timing, and spacing of their children were legally recognized. However, the subsequent National Strategy on Population 2000-2010 set out a primary objective of achieving replacement level fertility of 2.1 by 2005. The inconsistencies between these two important documents leaded to controversial interpretations of family planning program. However,

a number of subsequent legal documents such as Resolution 47 (2005) and amended Population Ordinance (2008) reaffirmed the government's emphasis on population control, Pham et al. (2012) argued. This emphasis is again reflected in the recent National Strategy on Population and Reproductive Health 2011-2020, which clearly set out a target of reducing TFR to 1.9 by 2015 and to 1.8 by 2020, controlling national population size of less than 98 million in 2020 (GOV 2011). Family planning program in Vietnam have been criticized for focusing only on married women. The reproductive health needs of unmarried women and adolescent are largely ignored and underinvested (GOPFP and UNFPA 2011).

In Vietnam, FP program has enjoyed strong political interests and commitments so far, however, enormous challenges remain. Pham et al. (2012) identified a number of demographic and organizational constraints faced by Vietnam. First of all, much still needs to be done to bridge the gap between international commitments regarding women's rights and reproductive rights endorsed by Vietnam and its locally restricted population policy. Secondly, the country has currently largest ever population of women of reproductive age (24 million women), which is projected to continue to rise to 27 million by 2020. This signifies an enormous and escalating demand for reproductive health services in generally and contraceptive methods in particular. As Vietnam assumed middle-income country status in 2008, many international donors have scaled back their assistance. In 2008, it was estimated that 80% of contraceptives were supported by international donors (United Nations Vietnam 2011). In fact, decline in supply of contraceptive methods by development partners led to a shortfall of 14 million EURO over the period 2006-2010 (Pham et al. 2012). Therefore, ensuring contraceptive commodity security in the upcoming period has been identified by the government as a priority.

In response to challenge, SM of contraceptive methods is considered as a realistic and sustainable solution. Since 1993, contraceptive SM was piloted with condoms. The program was expanded to oral pills in 1998 and other clinical contraceptive methods in 2006 (MOH 2011). Key principle of this approach is to ensure the poor and other vulnerable groups have access to free and subsidized contraceptives, while promoting SM and commercial provision of contraceptives. This approach helps "bring together the public and private sectors (SM groups, NGOs, and commercial organizations) in a coordinated effort to identify segments of the population they are best suited to serve" (Drake et al. 2010, p.48). In 2011, Ministry of Health approved the Operational Plan for Contraceptive Total Market with the overall objective to "promote equitable access to free, SM, and commercial market contraceptives concordant with the desire, ability to pay, and status of each client group so as to meet their increasing needs in quantity, diversity, and high quality of FP methods" (PATH 2012, p.1). By adopting TMA, contraceptive methods in Vietnam are provided through three main mechanisms: Free of charge provision through public systems, SM, and commercial provision. Free access to contraceptive methods is granted to a capped proportion of family planning users in each province, with priority given to disadvantaged populations, including the poor and near poor, people of merit, women of ethnic minority, and women residing in areas with elevated fertility rates. The capped proportion for the implant varies across provinces with different fertility rates (10%-50%) (MOH 2015). This means that urban women are less likely to be served by government program. However, in order to ensure a smooth transition from free delivery of contraceptives to partially subsidized provision and then commercial provision from 2020 onwards, SM is identified as prioritized delivery channel over the period 2011-2015 (MOH 2011).



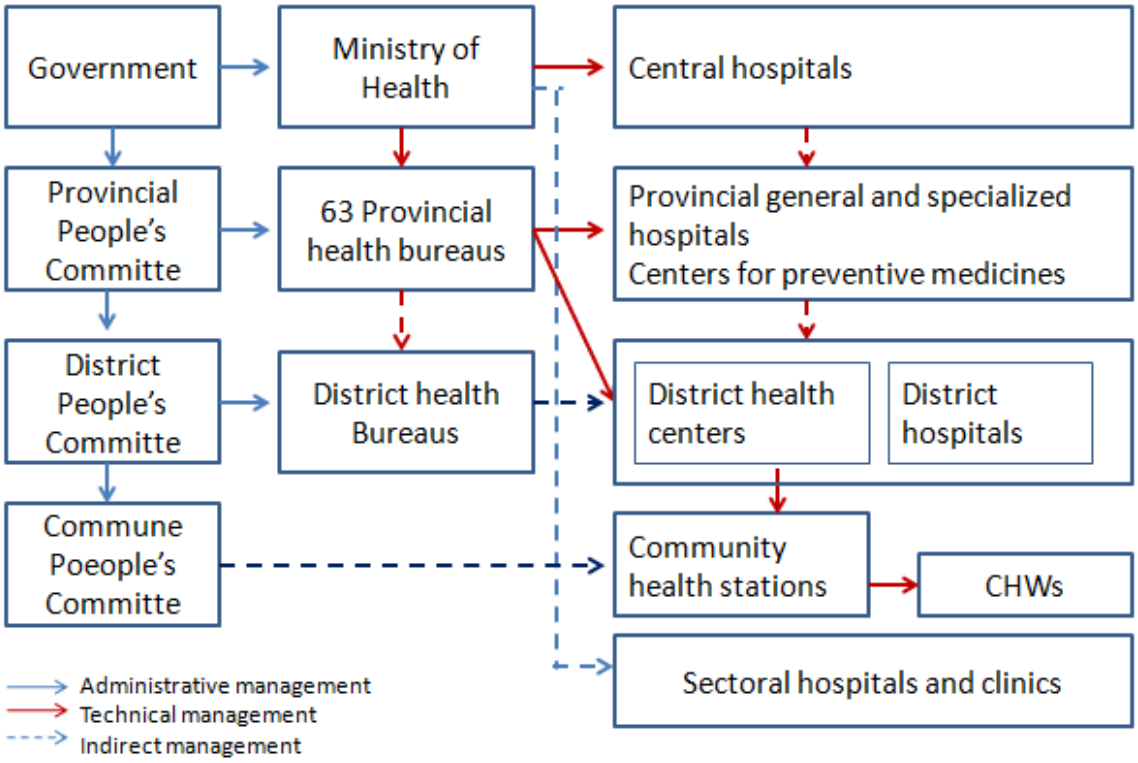
Source: GSO 2013

Appendix 3: Vietnam's health system

The public health system of Vietnam is divided into 4 levels: central, provincial, district and communal level. Ministry of Health, as the main health authority in the country, is responsible for the overall governance and guidance of health, formulating and executing all health policies and program. The central level is constituted by central general and specialized hospitals. At provincial level, there are 63 provincial bureaus which take charge of provincial hospitals, provincial centers for preventive medicines, district health centers and district hospitals. Provincial bureaus are administrative part of Provincial People's Committee but under the control of Ministry of Health regarding technical guidance and supervision.

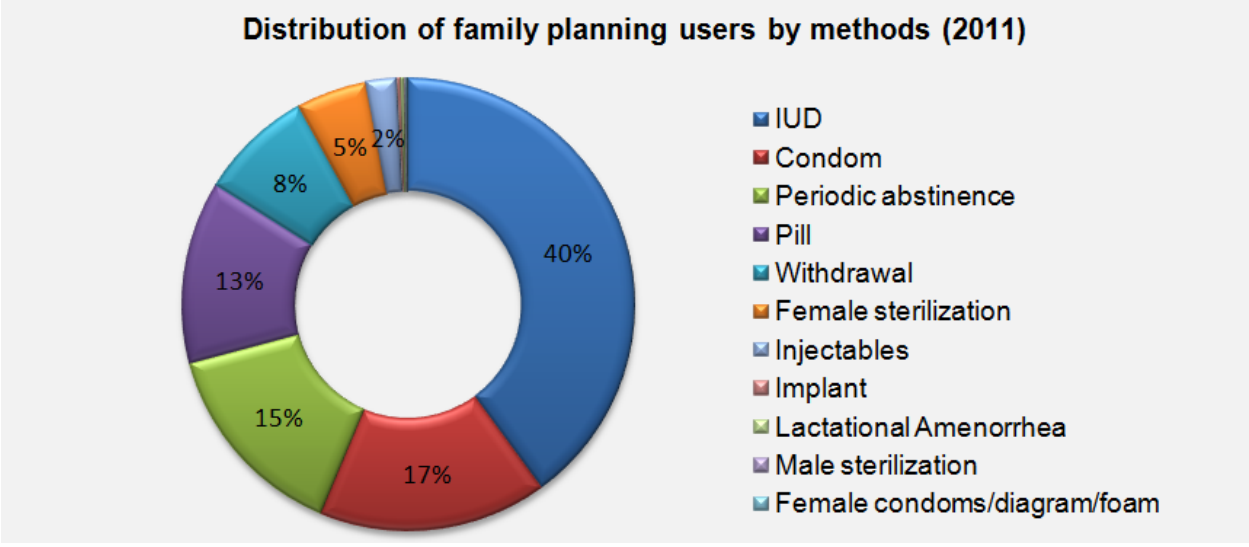
At grassroots level, Vietnam has a nationwide network of community health stations (CHSs) which is considered as the first point of contact with people, especially in rural areas, offering a wide range of primary health care services. There are more than 11,000 CHSs in the country, covers about 10,000 people each. Each CHS has a team of voluntary community health workers (CHWs) who are local residents. The most common issue facing the service delivery system is an excessive patient load at the provincial and central levels due to patient's bypassing of lower level facilities (WHO and Vietnam MoH 2012).

Structure of Vietnam's health system



Source: WHO and Vietnam MoH (2012)

Appendix 4: Composition of contraceptive method mix (2011)



Source: GSO 2011

Appendix 5: Summary of key characteristics of the Implanon implant

Implanon implant is a matchstick-sized plastic rod which is inserted under the skin of the upper arm and offers three-year contraception. Implanon releases a progestin like the natural hormone progesterone in the body. It prevents pregnancy by thickening the cervical mucus and disrupting the menstrual cycle. Implant insertion is a minor surgical procedure which should be performed by a trained provider. The most popular side-effect of Implanon is changes in bleeding patterns. Less common side-effects include headache, abdominal pain, weight change, breast tenderness, dizziness, nausea, and mood swing (WHO 2011).

The implant has a number of advantages and is suitable for almost all women of reproductive age. It offers long-term and highly reliable contraceptive protection with only one visit to the health facilities. The implant can be used safely by women during breastfeeding period. Women suffering from sexually transmitted infections (STIs) or anemia are also eligible for the implant. And lastly, fertility returns immediately upon removal (WHO 2011).

Appendix 6: Written informed consent

Hello, I am _____, and I am a MSc student from Royal Tropical Institute. Currently, I am working in collaboration with MSIVN to conduct a small survey into the women's choice of and experience with contraceptive implant. Because implants are still a new contraceptive method in Vietnam, I would like to learn more about women's views on it and how women come to the decision to use or discontinue their implants. Your participation in this survey is highly valued because the information you provide will help us to understand more about the concerns of women when it comes to selecting their contraceptive methods and better meet their needs for family planning.

Your participation involves one interview only. The interview is completely voluntary. You have the right to refuse to participate in this survey without any influences on the services you receive at MSIVN. You can skip any questions that you feel uncomfortable to answer or stop the interview at the any point without giving a reason. Counseling services are also available if you feel that you need further clinical advice or emotional support. Although there are no direct benefits for yourself from participating in the survey, your responses will enhance our understanding of contraceptive needs of women to ensure that women can make informed choice about their family planning methods. If you wish to receive a copy of the report or a summary of the report, I would be happy to send them to you as soon as these reports become available. Please indicate your preferred way of receiving them below.

The interview will last for about 30-45 minutes. The information you share with me today will be used for the research purpose only and will not be disclosed to any other people without your explicit permission. This interview will be recorded so that I can better document what you have said. However, if you are uncomfortable with the recorder, I will not use it. All the audio recordings and notes during the interview will be kept in a locked cabinet at Royal Tropical Institute and be accessible to researcher team only. Your name and personal details will not be presented in any reports or publications of the study so that no one can identify you from these documents.

If you have any questions, you might ask me now. Alternatively, my contact details are given below in case you would like further information later.

Dang Thi Ngoc Anh
Email: danganh710@gmail.com Phone: 01676 409 175
Address: No 12/3, Cu Chinh Lan street, Thanh Xuan district, Hanoi, Vietnam

Participant's statement

I understand the purpose of the study and its procedures. I confirm that I agree to participate in this study.

I would like to receive ☐ Full report ☐ Summary report via (post/email) _____ (please specify your email or address to which the report can be sent to)

Name and signature

_____
Date: _ _/_ _/ 2015

Appendix 7: Semi-structured interview protocols

Semi-structured interview protocols (new adopters)

Topic	Sub-topics
Knowledge and attitude toward contraception	• What contraceptive methods do you know? What are the benefits of family planning? • Before implants, did you use any contraceptive methods to prevent pregnancy? Were you happy with these methods? • How do you feel about contraceptive method available at the moment? • When choosing a contraceptive method, what matters you the most?
Knowledge and attitude toward the implant	• How did you know about implants? • How to you feel about contraceptive implants? What are the pros and cons of implants? Have your heard about any side-effects of the implant? • Do you have any friends who are currently using the implant? What do they share with you about their experience? • To whom do you think are implants suitable the most? Who do you think should not use implants?
Contraceptive decision-making	• Before coming the clinic today, did you have a specific method in your mind? • How long did you take you since you have the intention to use the implant until today? How do you make the final decision? How long do you plan to keep your implant? • Did you go to any places or people to ask for information and advice about implants? What do you think is the most reliable source of information? • Did you discuss with your husband that you are going to use the implant? What did you say? How did he react?

	• Did you discuss with your friends/relatives that you are going to use the implant? What did they say? • Do you meet any difficulties when choosing and accessing the implant? • What do you think about the price of the implant and other contraceptive method in general? • Apart from MSI, do you know any other place that also provides this method?
Counseling services	• How do you value the counseling service here? • What do you think is the most important pieces of information that service providers should focus on during the counseling session?
Gender dynamics and norms	• Who is the person who makes decision in your family? Who decides the number and spacing of children? • What do you think about ideal number of children? Do you have any pressure from families about giving birth? • Can you make your own decision about contraception? Have you ever use contraception without your husband's consent? • What do you think about a good husband? What do you think about a good wife?

Semi-structured interview protocols (current users/past users)

Topic	Sub-topics
Knowledge and attitude toward contraception	• What contraceptive methods do you know? What are the benefits of family planning? • Before implants, did you use any contraceptive methods to prevent pregnancy? Were you happy with these methods? • How do you feel about contraceptive method available at the moment? • When choosing a contraceptive method, what matters you the most?
Knowledge and attitude toward the implant and experience with the implant	• How long did you use your implant? How was your experience? • Did you encounter any side-effect of the implant? Did you do anything to mitigate them? When is the most difficult period? • Do you have any friends who are currently using the implant? What do they share with you about their experience? • To whom do you think are implants suitable the most? Who do you think should not use implants?
Contraceptive decision-making	• Before coming the clinic for implant insertion, did you have a specific method in your mind? • How long did you take you since you have the intention to use the implant until today? • How do you make the final decision? What do you think is the most reliable source of information? • Can you tell me about the reason why you decided to remove your implant? What is your main concern? • Did you discuss with your husband that you are going to remove the implant? What did you say? How did he react? • Did you discuss with your friends/relatives that you are going to remove the implant? What did they say? • Do you meet any difficulties when accessing the implant removal service? What do you think about the service fees? Apart from MSI, do you know any other place that also provides this service? • After removing the implant, did you switch to any other method? What is it?

Counseling services	• When you first came to the clinic for implant insertion, how was the counseling session going? • When you came to the clinic for implant removal, did you receive counseling services? What did the service provider tell you? • What do you think is the most important pieces of information that service providers should focus on during the counseling session?
Gender dynamics and norms	• Who is the person who makes decision in your family? Who decides the number and spacing of children? • What do you think about ideal number of children? • Can you make your own decision about contraception? Have you ever use contraception without your husband's consent? • What do you think about a good husband? What do you think about a good wife?

Semi-structured interview protocols (service providers)

Topic	Sub-topics
Background information about service providers	• Could you please tell me about your main tasks and involvement with implant services at the clinic?
Women's belief and attitudes about implants	• What type of information do your clients often ask during their counseling sessions? • What are the main concerns of clients about using implants? What do you think is the most challenging part when providing counseling? • What are the common misperceptions about implants among your clients? How do you address them?
Women's experience with implants	• What side-effects do your clients experience? • What do you think is the hardest period for a woman to tolerate her implant? • How many percent of clients come back to your clinic to ask for side effect treatment and management? What types of treatment do you often offer to reduce these side effects? What is the outcome? • How many percent of client come to your clinic for early implant removal (less than 1 year of use)?
Women's decision making regarding implant adoption and removal	• Among women who come to your clinic for the implant, do they often have a specific method in their mind? • From your observation, who are likely to choose implants rather than other contraceptive methods? • What do you think is the most important piece of information you need to provide to clients during the counseling session? • What are the main reasons your clients decide to remove their implants? • Do you offer counseling service after implant removal? After removal of implants, what method do your clients often switch to?

Appendix 8: Topic guide for focus group discussion

Topic	Sub-topics
Knowledge and attitude toward contraception	• What contraceptive methods do you know? • Are you using any contraceptive method at the moment? Were you happy with these methods? • Do you find it easy to choose a contraceptive method? • When choosing a contraceptive method, what matters you the most?
Knowledge and attitude toward the implant	• Have you ever heard about the implant? How did you know about implants? • How to you feel about contraceptive implants? • Do you have any friends who are currently using the implant? What do they you're you about their experience? • To whom do you think are implants suitable the most? Who do you think should not use implants?
Contraceptive decision-making	• How did you come to the decision to choose your current contraceptive method? • What do you think is the most reliable source of information? • How do you feel about discussing with your husband about family planning? • How do you feel about sharing experiences with your friends and colleagues about contraception? • Do you meet any difficulties when choosing and accessing the implant? • What do you think about the price of the implant and other contraceptive method in general? • Do you know any places where you can access the implant?
Counseling services	• How do you feel about FP counseling? • What do you think is the most important pieces of information that service providers should focus on during the counseling session?
Gender dynamics and norms	• Who is the person who makes decision in your family? • What do you think about ideal number of children? • Can you make your own decision about contraception? Have you ever use contraception without your husband's consent? • What do you think about a good husband? What do you think about a good wife?

Appendix 9: Characteristics of participants

Category	ID	Age	Marital status	# of children	Attribute
New adopter (8)	P1	32	Married	2	
	P2	27	Married	1	
	P4	40	Married	2	
	P5	25	Married	1	
	P6	31	Married	2	
	P7	32	Married	2	
	P8	23	Married	2	
	P9	27	Married	3	

Category	ID	Age	Marital status	# of children	Attribute
Current user (5)	P10	26	Married	1	Use the implant for 2 months
	P3	35	Married	2	Replace a new implant
	P12	33	Married	2	Replace a new implant
	P14	34	Married	2	Replace a new implant
	P15	34	Married	2	Replace a new implant
Past user (7)	P11	28	Married	1	Use the implant for 2 years
	P13	40	Married	2	User the implant for 2 weeks
	P16	29	Married	1	Use the implant for 8 months
	P17	25	Married	1	Use the implant for 2 years
	P18	27	Married	1	User the implant for 6 months
	P19	36	Married	2	Use the implant for 3 years
	P20	29	Married	2	User the implant for 7 month
Never user (9)	P21	26	Married	1	Condom user
	P22	40	Married	2	Condom and injectable users
	P23	24	Single	0	Non-user of family planning
	P24	28	Single	0	Non-user of family planning
	P25	34	Married	2	Condom and pill users
	P26	33	Married	2	IUD user
	P27	27	Married	2	Condom user
	P28	27	Married	1	Condom user
	P29	27	Married	1	Condom user