

Contraceptive counseling and use with a focus on migrant women in Sweden



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Institutet**

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CONTRACEPTIVE COUNSELING AND USE WITH A FOCUS ON MIGRANT WOMEN IN SWEDEN

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Contraceptive counseling and use with a focus on migrant women in Sweden

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By

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“We were interested in the different stages of migration and integration: what it means to be uprooted, to start over, to be part of several cultures but belonging to neither one of them fully. What it means to suddenly be able to take control over your own life. To discover your unique mix of cultures as an asset. The young women became our protagonists, and their futures our utopia.”

Between These Folded Walls, Utopia

A book by Cooper & Gorfer, 2021

POPULAR SCIENCE SUMMARY OF THE THESIS

How can we improve contraceptive counseling and use for all, but especially for foreign-born women?

Sweden has high rates of induced abortions compared with other Northern European countries. Approximately 15% of all women in Sweden who can conceive do not use contraception despite they do not want to get pregnant. We do not know this figure for foreign-born women in Sweden, however earlier research has shown a lower contraceptive use and higher abortion rates among foreign-born women compared with women born in Sweden. Difficulties to access contraception care have been stated as one reason. Other reasons stated have been language difficulties and lower knowledge of contraception and bodily functions. During the last years the migration to Sweden has increased and in our research team we addressed these questions:

How does foreign-born women's contraceptive use look like today, and which factors may influence the use? Can we improve the counseling in order to reduce the number of unwanted pregnancies?

Study I was conducted at abortion clinics in Stockholm. Women seeking abortion care were asked about their contraceptive use. We could state that foreign-born women had a previously lower contraceptive use compared with women with a Swedish background. Further, differences were seen between the groups in previously but also planned use, with different contraceptive methods. We also found that foreign-born women neither had received sexuality education nor contraceptive counseling to the same extent as women born in Sweden. Additionally, a higher extent of the foreign-born women stated they did not have sufficient knowledge to choose a contraceptive method after the abortion. In this first study, we got a better understanding about foreign-born women's contraceptive use, today in Sweden.

Study II was conducted at abortion, youth, and maternal health care clinics in Stockholm. These clinics were randomized to provide structured contraceptive counseling with a specially produced material, or to continue their routine counseling. We found that the women who received the structured counseling more often chose, and started to use, long-acting reversible contraceptives such as hormonal intrauterine devices, copper intrauterine devices and contraceptive implants. At the abortion clinics, we found a lower proportion of pregnancies within a year among the participants who had received the structured contraceptive counseling. This second study clarified that by structured contraceptive counseling we can increase the use of long-acting reversible contraceptives, known to be the most effective methods in decreasing unwanted pregnancies. Further, Study II showed that the structured contraceptive counseling worked out well regardless of migration

background. Additionally, the women in the study, regardless of their country of birth, were satisfied with the structured counseling material they had received. One part of the material, an effectiveness chart, which showed the effectiveness of different contraceptive methods, was stated to be especially helpful when choosing a contraceptive method, among the foreign-born women in the study. Summarily, the structured contraceptive counseling was shown to increase the use of long-acting reversible contraceptives regardless of the woman's background. Also, all the participants, regardless of background, were satisfied with the structured counseling material.

In Study III, we interviewed foreign-born women from Iran, Iraq and Syria, regarding their views on contraceptive counseling and use. Taboos regarding not having sex before marriage and not having sex at a young age were shared, and influenced the foreign-born women's perceptions and experiences of contraception. They also shared own strategies they had developed to be able to use contraception despite these taboos. Further, the women in the study shared factors the healthcare provider needs to be aware of to be able to provide quality in contraceptive counseling. Factors raised were the women's need to discuss myths and misconceptions regarding contraception, to receive counseling without stress and without judgmental attitudes from the healthcare provider. Further, it was shared that audiovisual material can facilitate understanding when receiving counseling in a language other than one's native language. The third study gave not only an understanding about foreign-born women's own perceptions and thoughts about contraception but also contributes with knowledge of how the healthcare provider can adapt and improve the contraceptive counseling.

Altogether, this thesis contributes with new knowledge and understanding of contraceptive use among foreign-born women and factors which can influence the use. Additionally, this thesis presents a new structured way on how to provide contraceptive counseling which may improve contraceptive counseling for all, regardless of background.

POPULÄRVETENSKAPLIG SAMMANFATTNING

Hur kan vi förbättra preventivmedelsrådgivning och preventivmedelsanvändning för alla men särskilt för utrikesfödda kvinnor?

Sverige har höga abortsiffror jämfört med andra nordeuropeiska länder. Drygt 15% av alla kvinnor i Sverige som kan bli gravida använder inte preventivmedel trots att de inte vill bli gravida. Vi vet inte hur den siffran ser ut för utrikesfödda kvinnor i Sverige, men tidigare forskning visar att de använder preventivmedel i lägre grad och oftare gör abort än kvinnor födda i Sverige. Svårigheter att hitta till preventivmedelsrådgivning har angetts som en förklaring. Språksvårigheter och lägre kunskap om preventivmedel och kroppen har angetts som andra förklaringar. Under de senaste åren har migrationen till Sverige ökat och vår forskargrupp ställde oss följande frågor:

Hur ser utrikesfödda kvinnors preventivmedelsanvändning ut idag och vilka faktorer kan påverka den? Kan vi förbättra preventivmedelsrådgivningen för att minska antalet oönskade graviditeter?

Studie I genomfördes på abortmottagningar i Stockholm. De som sökte abort tillfrågades om sin preventivmedelsanvändning. Vi kunde bekräfta att utrikesfödda kvinnor haft en lägre preventivmedelsanvändning tidigare i livet än kvinnor med svensk bakgrund. Vi såg även skillnader mellan grupperna avseende vilka preventivmedelsmetoder man använt tidigare och planerade att använda efter aborten. Vi kunde också se att utrikesfödda kvinnor vare sig fått sex- och samlevnadsutbildning eller preventivmedelsrådgivning i lika hög grad som kvinnor födda i Sverige. Dessutom upplevde en högre andel av de utrikesfödda kvinnorna att de inte hade tillräcklig kunskap för att välja preventivmetod efter aborten. I denna första studie fick vi ökad förståelse för utrikesfödda kvinnors preventivmedelsanvändning i Sverige idag.

Studie II, genomfördes på abort-, ungdoms- och barnmorskemottagningar i Stockholm. Dessa mottagningar lottades till att ge strukturerad preventivmedelsrådgivning utifrån ett särskilt framtaget material, eller fortsätta som vanligt med ordinarie rådgivning. Vi fann att de kvinnor som fick den strukturerade rådgivningen oftare valde, och började använda, långtidsverkande preventivmedel såsom hormonspiraler, kopparspiraler och p-stavar. På studiens abortmottagningar kunde vi också se att de kvinnor som fick den strukturerade rådgivningen hade lägre andel graviditeter inom ett år. Den andra studien tydliggjorde att vi genom strukturerad preventivmedelsrådgivning kan öka användandet av långtidsverkande preventivmedel, som vi vet är mest effektiva för att minska oönskade graviditeter. Vidare visade Studie II att den strukturerade rådgivningen fungerade lika bra oavsett om man var utrikesfödd eller född i Sverige. Kvinnorna i studien, oavsett födelseland, var generellt också nöjda med det strukturerade rådgivningsmaterial de fått ta del av. En del av materialet, en effektivitetskarta, som visade hur effektiva olika preventivmedel är för att skydda mot graviditet, visade sig vara särskilt hjälpsam för de utrikesfödda kvinnorna vid deras val av preventivmetod. Den strukturerade preventivmedelsrådgivningen visade sig alltså öka användandet av långtidsverkande preventivmedel oavsett kvinnans bakgrund och deltagarna var dessutom nöjda med det rådgivningsmaterial man fått ta del av.

I Studie III intervjuade vi utrikesfödda kvinnor från Iran, Irak och Syrien, om deras syn på preventivmedel och preventivmedelsrådgivning. De berättade att tabun av olika slag, såsom att ha sex före äktenskapet och sex i unga år, påverkade deras uppfattning om, och erfarenhet av, preventivmedel. De delade också med sig av de egna strategier som de utvecklat för att

kunna använda preventivmedel trots dessa tabun. Kvinnorna i studien gav också uttryck för faktorer som vårdgivaren behöver känna till för att kunna ge en god preventivmedelsrådgivning. Det handlade bland annat om behov av att få diskutera myter och missuppfattningar om preventivmedel, att få rådgivning utan stress och att bli bemött på ett sätt som inte upplevdes som dömande. Dessutom beskrevs att filmer och bilder kan underlätta förståelsen om man får rådgivning på ett annat språk än sitt modersmål. Den tredje studien gav inte bara förståelse för utrikesfödda kvinnors egna åsikter och tankar om preventivmedelsanvändning utan bidrar också till kunskap om hur vårdgivaren kan anpassa och förbättra preventivmedelsrådgivningen.

Sammantaget bidrar den här avhandlingen med ny kunskap och förståelse för hur preventivmedelsanvändningen ser ut hos utrikesfödda kvinnor och vad som kan påverka den. Dessutom visar avhandlingen ett nytt strukturerat sätt att ge preventivmedelsrådgivning på, som kan förbättra preventivmedelsrådgivningen för alla, oavsett bakgrund.

ABSTRACT

INTRODUCTION

Sweden has a high unmet need of contraception resulting in high rates of induced abortions compared with other Northern European countries. The highest abortion rates are seen among women 25-29 years of age. Findings show that Swedish women use less effective contraceptive methods despite the effectiveness of a method being reported as the most important factor when choosing a method. There are no consistent recommendations on how to provide contraceptive counseling. However, previous international studies have stated a higher uptake of long-acting reversible contraception (LARC) and lower pregnancy rates, after counseling focusing on the effectiveness of different methods. Additionally, earlier research states that migrant women in Sweden have lower contraceptive use and a higher proportion of abortions compared with non-migrants. Reasons for the lower use have been explained by access, language and knowledge barriers. However, not many Swedish studies have explored migrant women's own perspectives on contraception.

AIM

This thesis aims to get a better understanding of migrant women's contraceptive use and perspectives on contraception, but also to present a new way of providing contraceptive counseling. All with the aim of improving access and quality of contraceptive counseling and use.

METHODS

Study I was an observational cross-sectional study conducted at abortion clinics in Stockholm. This study aimed to compare contraceptive use and methods, ever-in life, at conception and future planned, after an induced abortion. The comparisons were conducted between migrants, second-generation migrants and non-migrant women. **Study II** was a cluster randomized controlled trial conducted at abortion, youth and maternal health clinics in Stockholm. The aim was to evaluate effects of structured contraceptive counseling on LARC uptake and pregnancy rates (Paper II). Further, we evaluated effects of LARC uptake and use, as well as satisfaction with the structured counseling among migrants, second-generation migrants and non-migrant participants (Paper III). **Study III** was a qualitative study using content analysis with an inductive approach. We performed interviews with foreign-born migrants from Iran, Iraq and Syria. In this study we aimed to explore the migrant women's perceptions and experiences of contraceptive counseling and use.

FINDINGS

Migrants and second-generation migrants had a lower contraceptive use ever-in life compared with non-migrant participants. Further, differences were seen in contraceptive methods ever-in life but also planned to be used after the abortion, between the groups. More migrants and second-generation migrants planned to use a LARC method compared with non-migrants after the abortion. Migrants had received sexuality education and contraceptive counseling to a lower extent compared with second-generation migrants and non-migrants. Additionally, migrants stated to a lower extent that they did not have sufficient knowledge to choose a contraceptive method after the abortion compared with second-generation migrants and non-migrants (**Study I**). Participants who had received the structured contraceptive counseling had a higher LARC uptake compared with participants who had received routine counseling. Additionally, participants who had received the structured contraceptive counseling had less pregnancies at 12 months post-abortion (Paper II). Further, we found that the structured counseling increased LARC uptake and use at 12 months, when controlled for migration background. Also, all the participants were satisfied with the counseling material. However, migrants and second-generation migrants stated to a higher extent that the effectiveness chart was supportive in contraceptive choice as compared with non-migrants (Paper III) (**Study II**). The foreign-born migrants shared that taboos, such as having no premarital sex and no sex at a young age, influenced their perceptions and experiences of contraceptive counseling and use. They had developed own strategies to be able to use contraception despite the influence of these taboos. Further, the foreign-born migrants shared specific needs from the healthcare provider during the counseling encounter. These were to discuss myths and misconceptions regarding contraception, to receive counseling free of stress and without judgmental attitudes. Additionally, it was shared that audiovisual material can facilitate the counseling if receiving it in a language other than one's native language (**Study III**).

CONCLUSION

A lower contraceptive use ever-in life was seen among migrants and second-generation migrants compared with non-migrants. Differences in contraceptive methods were also seen between the groups (**Study I**). Structured contraceptive counseling can increase LARC uptake and decrease pregnancy rates 12 months post-abortion (Paper II). Structured contraceptive counseling can also increase LARC uptake and use, when controlled for migration background. Additionally, a higher proportion of foreign-born migrants and second-generation migrants found the effectiveness chart to be supportive in contraceptive choice compared with non-migrants (Paper III) (**Study II**). Taboos influence foreign-born migrants' perceptions and experiences of contraception, leading to development of own strategies and specific needs from the HCP during the contraceptive counseling (**Study III**).

LIST OF SCIENTIFIC PAPERS

- I. Emtell Iwarsson K*, Larsson EC*, Gemzell-Danielsson K, Essén B, Klingberg-Allvin M. Contraceptive use among migrant, second-generation migrant and non-migrant women seeking abortion care: a descriptive cross-sectional study conducted in Sweden. *BMJ Sex Reprod Health*. 2019
- II. Emtell Iwarsson K*, Envall N*, Bizjak I, Bring J, Kopp Kallner H, Gemzell Danielsson K. Increasing uptake of long-acting reversible contraception with structured contraceptive counselling: cluster randomised controlled trial (the LOWE trial). *BJOG*. 2021.
- III. Emtell Iwarsson K, Larsson EC, Bizjak I, Envall N, Kopp Kallner H, Gemzell-Danielsson K. Long-acting reversible contraception and satisfaction with structured contraceptive counselling among non-migrant, foreign-born migrant and second-generation migrant women: evidence from a cluster randomised controlled trial (the LOWE trial) in Sweden. *BMJ Sex Reprod Health*. 2022.
- IV. Emtell Iwarsson K, Klingberg-Allvin M, Gemzell-Danielsson K, Larsson EC. Perceptions and experiences of contraceptive counselling and use among foreign-born women from the Middle East: a qualitative study from Sweden. Manuscript. 2022.

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LIST OF ABBREVIATIONS AND CONCEPTS

AC	Abortion Clinic
CI	Confidence Interval
HCP	Healthcare Provider
ICC	Intraclass Correlation Coefficient
ITT	Intention-To-Treat
IUD	Intrauterine Device
LARC	Long-Acting Reversible Contraception
MHC	Maternal Health Clinic
RCT	Randomized Controlled Trial
RNM	Registered Nurse-Midwife
SARC	Short-Acting Reversible Contraception
SRHR	Sexual and Reproductive Health and Rights
YC	Youth Clinic
Foreign background	Migrant and Second-generation migrant
Migrant	Used interchangeably with a foreign-born migrant
Second-generation migrant	A person born in Sweden with both parents born abroad
LARC	Hormonal IUD, copper IUD and subdermal implant
SARC	Oral contraceptive pills, transdermal patches, vaginal rings and sometimes also injections
Unintended Pregnancy	Used interchangeably with unwanted pregnancy

Unmet need of
contraception A person at risk of, but without a wish for,
pregnancy, who does not use contraception

Uptake Choice and initiation of a contraceptive method

In this thesis I use the term *woman* for a person who has a possibility of becoming pregnant

Further, I use *patients* for a person asked to participate in a study prior to enrollment and *participants* or *informants* after enrollment

1 INTRODUCTION

1.1 SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS (SRHR)

The shared vision in the United Nations (UN) 2030 Agenda is to “provide peace and prosperity for people and the planet, now and into the future” (1). To achieve this, 17 Sustainable Development Goals (SDGs) have been developed. To achieve the goals no. 3 *Good health and well-being* and no. 5 *Gender equality*, different targets have been addressed. Especially relevant for this thesis is target 3.7 which states to ensure universal access to sexual and reproductive healthcare services including contraception. An additional relevant target for this thesis is 5.6 which states to ensure universal access to sexual and reproductive health and rights (SRHR) including own informed decisions on contraceptive use (1).

While the statement “Leave no one behind” is a central promise of the UN 2030 Agenda, the Guttmacher-Lancet Commission have required a more holistic view of SRHR such as adolescent sexuality, gender-based violence and abortion, to ensure protection of human rights for all (2). The report recommends a universal available package of SRHR services consistent with, but broader than, the UN 2030 Agenda. The package includes for example comprehensive sexuality education, contraceptive counseling with a defined minimum number and types of methods, and counseling and services for sexual health and wellbeing. The report further states, and also relevant for this thesis, that SRHR needs are universal, however some groups, including refugees and migrants, may have distinct needs. Therefore, the provision of additional SRHR support to these marginalized groups is crucial, such as care for survivors of sexual violence and safe abortion care.

This thesis addresses contraceptive counseling and use. While we emphasize contraceptive counseling on the method’s effectiveness and focus on the uptake, we still pay attention to the individual’s experience of the counseling but also perceptions and needs related to contraceptive counseling and use. This is because family planning programs have sometimes focused more on access to, and numbers of uptake of contraception, rather than the individual’s perspective. An example was the numerical goal for Family Planning 2020 “to reach an additional 120 million users of modern contraception in the world’s 69 lowest-income countries by 2020” (3).

The SDGs are further in focus in the Swedish SRHR strategy which aims to ensure a good sexual and reproductive health on equal terms for the whole population. The strategy further emphasizes special groups such as migrants, whose SRHR needs have to be strengthened (4). On this my thesis rests.

2 LITERATURE REVIEW

2.1 UNMET NEED FOR CONTRACEPTION, UNINTENDED PREGNANCIES AND ABORTIONS

Globally, there is an unmet need for contraception resulting in unintended pregnancies which are one of the major causes of maternal mortality.

Globally, more than 200 million pregnancies occur every year and out of those 41% are estimated to be unintended; of these 16% result in unplanned births, 5% in miscarriages and 20% in induced abortions (5). Forty-five percent of all abortions are estimated to be unsafe leading to high rates of maternal mortality (6). The unmet need of contraception in the world is 12% among married or in-union women (7). Reasons for low contraceptive use in countries with high unmet need of contraception are infrequent sex, concerns about side-effects and health risks (7). In 2019, it was estimated that 218 million women had an unmet need of modern contraception in low- and middle-income countries (8). If there would not be any unmet need for modern contraception in low- and middle-income countries, unintended pregnancies would decrease by 68% and unsafe abortions by 72% (8). The SDGs no. 3 and no. 5, are to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030, and ensure access to sexual and reproductive health (SRH) services, contraception and SRHR (1). Key interventions to reach these goals are access to family planning, safe abortion and post-abortion care (9).

Despite differences in mortality rates in different countries, there are several favorable aspects for the woman, child and society to decrease unintended pregnancies.

Worldwide, the maternal mortality rate has declined since 2000, nevertheless many women still die because of pregnancy and childbirth complications (10). Maternal mortality is defined as all female deaths due to pregnancy or childbirth, including induced abortion within 42 days (11). Sweden has one of the world's lowest maternal mortality rates, however every year women still die due to maternal health complications (12).

Unintended pregnancies, regardless of whether the woman will continue the pregnancy or terminate it, increases the risk for a venous thromboembolism (VTE) and this applies even at a very early gestational age. The incidence of getting a VTE is 2/10 000 women and year for non-pregnant women without any contraception, 5-12/10 000 for women using combined hormonal contraception and 10-30/10 000 for pregnant women (13).

Every pregnancy is associated with a risk of being ectopic. Approximately 2% of all pregnancies are ectopic pregnancies, where the fertilized egg attaches in the Fallopian tube instead of the uterine cavity (14). This is a critical condition where women may even die due to complications such as hemorrhage, and anesthetic complications. About 9% of all maternal deaths are due to ectopic pregnancies (14). Infertility and a prior ectopic pregnancy are

associated (14). Other consequences of all pregnancies with potential harmful outcomes include miscarriage and hemorrhage, molar pregnancy and septic incomplete abortions.

Unintended pregnancies can also be associated with less healthy outcomes for the woman and child if proceeded. Unwanted pregnancies and mistimed births are associated with maternal smoking during pregnancy, poor folic acid consumption, delayed initiation of prenatal care, postpartum depression and breastfeeding less than 8 weeks (15).

For the society, it is cost-effective to avoid unintended pregnancies (16). More than 50% of unintended pregnancies can be associated with imperfect contraceptive use, so by improving contraceptive adherence, high health care costs can be avoided (17). Contraception can prevent unintended pregnancies and unwanted births and can also be a cost-effective way to lower the greenhouse effect, where population growth is one of the threats to the environment (18). Climate changes affect all people on the planet, however some groups are more vulnerable, such as women and migrants (19).

It is estimated that 9 USD/capita annually is needed to meet low- and middle-income countries need for contraceptive, maternal and newborn care. Access to SRHR services “saves lives, improves health and wellbeing, promotes gender equality, increases productivity and household income, and has multigenerational benefits by improving children’s health and wellbeing”(2). Contraception can increase women’s empowerment by the possibility to choose whether, when and with whom to have children. By using contraception, unintended pregnancies can be reduced, and girls can continue their school education which may affect their future financial situation and independence. Hence, contraception is crucial for saving lives, end poverty and empower women (20).

In summary, it is more favorable to use contraception than to experience an unintended pregnancy when it comes to the risk of VTE, ectopic pregnancy or other less healthy pregnancy outcomes as well as from a climate, cost-effective and gender equality perspective. By reducing unintended pregnancies progress can be made towards most of the SDGs.

2.2 CONTRACEPTIVE METHODS

There are different contraceptive methods and they have different effectiveness and ways of administration.

The most used contraceptive method in Europe and the USA is the pill (7, 21). Similarly, in 2013, the most used contraceptives for all women in Sweden were short-acting reversible contraception (SARC) methods such as combined oral contraceptive pills, progestin only pills, transdermal patches and vaginal rings (22). Sometimes injections are also included in SARCs. These SARC methods are user dependent. The woman needs to take her pill every day, change the patch once a week, change the ring once a month or get a new injection every

third months. The Pearl Index (PI), number of pregnancies for 100 women per year, for typical use of SARC methods is 9 while for injection it is 6 (23).

In 2017 SARC methods were replaced by long-acting reversible contraception (LARC) methods as the most used contraceptive methods for all women in Sweden. LARC methods include the levonogestrel intrauterine devices, copper intrauterine devices and subdermal implants (24). These reversible methods are the most effective and reduce the risk of contraceptive failure, unintended pregnancy and induced abortions including repeat abortions compared with SARC methods (25, 26). Similar observations in studies from Europe, have shown decreased risk of repeat abortion when using IUDs and LARCs compared with SARCs (27-29). The hormonal IUD has also been shown to be cost-effective compared with oral contraceptive pills (16). LARC methods are not user dependent and the PI is between 0.05-0.8 for typical use as well as for perfect use (23). They can last for between three and ten years and are either placed intrauterine or subcutaneously in the upper non-dominant arm. LARCs are recommended as a first line choice in Sweden regardless of age, pregnancies and parities (13). Despite this, young women in Sweden, 16-29 years of age, are using SARCs and other less effective methods to a higher extent than older women (24). It is known that women often underestimate the effectiveness of LARCs while they overestimate that of SARCs (22).

Contraceptive methods have different benefits and side-effects.

Except preventing pregnancy, contraceptives have other benefits. Hormonal contraceptives decrease menstrual bleeding as well as menstrual cramps. Copper IUD is the only method known to increase bleeding and cramps (13). Less bleeding and lower abdominal pain can help women to maintain normal hemoglobin and ferritin levels as well as participate in school, work, sports and daily activities. SARC methods can be taken continuously to avoid or postpone withdrawal bleedings. Continuous regimen is both safe and effective (30). Less bleedings can also be favorable from a cost perspective when less sanitary products are needed. Hormonal contraceptives can also prevent the general female population from ovarian-, endometrial- and colorectal cancers (31) and some combined oral contraceptive pills may also improve skin conditions like acne and prevent premenstrual syndrome/premenstrual dysphoric disorder (13).

Advantages with LARCs are that regular intake is not needed and the device can “be forgotten” and still be effective. Furthermore, their invisible placement can be important for some women. Some women may experience side-effects of SARC methods for example mood changes, weight gain and decreased libido which will often disappear within some months after starting the method (13). For LARC methods the most common side-effects are irregular bleeding and uterine cramps (13).

2.3 CONTRACEPTIVE COUNSELING

Quality of contraceptive counseling is a major factor for increasing contraceptive use in general and LARCs in particular.

Contraceptive counseling can improve the use of combined hormonal methods (32), however contraceptive counseling is a complex task. If women receive contraceptive counseling focusing on LARCs compared to routine praxis, it can affect the uptake of LARCs. The Contraceptive CHOICE project started 2007 in the St Louis, Missouri area in the US and enrolled approximately 10 000 women between 14 and 45 years of age. The aim was to decrease the numbers of unintended pregnancies. In the project women got contraceptive counseling on all different contraceptive methods focusing on LARCs and could choose any contraceptive method for free for up to 3 years. By reducing barriers to contraceptive use by easy access, increasing knowledge of contraceptives and non-financial costs, the study stated that LARC use increased and 75% of women chose a LARC method (26). Women also showed a high satisfaction and continuation rate with LARCs compared to SARCs which also applied regardless of ethnicity (33, 34).

A cluster randomized controlled trial was performed in the US in 2011 aiming to investigate if structured contraceptive counseling, compared to routine counseling, could decrease unintended pregnancies by increasing the use of LARCs. Forty clinics participated and 1500 women 18-25 years of age were enrolled. The results showed that more women in the intervention group chose a LARC method compared with the control group. In the intervention group the women also presented lower pregnancy rates if they had received information from a family planning clinic, however no significant difference was seen in pregnancy rates among women recruited at abortion clinics (35).

People-centered health care has become an acknowledged and recommended approach in healthcare (36). People-centered or person-centered care is a core dimension in high-quality contraceptive counseling. To provide person-centered care the healthcare provider (HCP) needs to have empathy, respect and be engaged in the patient. Furthermore, to communicate and facilitate a shared decision-making and also to have a holistic focus on the person's life (37). In Sweden the aim is to provide person-centered high-quality contraceptive counseling, however there is no given structure on how to provide the counseling. Different effectiveness charts and models of methods can be used. The counseling is usually a one-to-one meeting. Despite the woman herself needs to decide if and which method she wants to use, partners sometimes have an important role in helping to find a method suitable for the couple. It is known that contraceptive counseling for both men and women increases the use of effective contraception for both genders (38). It is also important to engage adolescent boys in SRHR and contraceptive counseling and contraceptive use to reach long-term effects such as decreased rates of unintended pregnancy, increased contraceptive knowledge and use as well as increased gender equality (39).

2.4 MIGRANTS

There are different definitions of the migrant term

Below I will describe the definitions used in this thesis and reasons for using them.

According to Statistics Sweden, people with *foreign background* includes persons born abroad and persons born in Sweden with two parents born abroad (40). In our studies we use the terms *foreign-born migrant* and *second-generation migrant* according to Statistics Sweden.

In the literature both the terms *immigrant* and *migrant* are used interchangeably when describing a person who lives in another country than her country of birth. We have chosen to use the term migrant since it is used in literature (41, 42) and as it is defined by the United Nations Educational Scientific and Cultural Organization (UNESCO) as “any person who lives temporarily or permanently in a country where he or she was not born, and has acquired some significant social ties to this country.”(43).

According to the UN it is important to distinguish the terms *refugees* and *migrants*, since there are crucial legal differences between the two terms. Refugees refers to people outside their country of birth due to war, conflicts and other circumstances that have seriously disturbed the public order and therefore they are protected in international law. Migrants can leave their country of birth for many reasons for example to improve one’s life by finding work or education or family reunion. The UN suggests using the terms *refugees and migrants* for the mixed group of people who have moved (44). In our studies we have only used the term migrants although most likely there are also refugees in this group of participants. However, we have not explored reasons for leaving one’s country of birth and therefore we use the term migrant.

Further, in some literature migrants are defined as being born abroad including adopted persons (45) while in other literature adopted persons are not included (46). Migrants have also been described as foreign-born from Western or non-Western countries (47) or labour migrants or refugees with foreign background, from low- and middle-income countries (48). A second-generation migrant can also be referred to as a 1.5 generation person and describes a person born abroad but who has moved to another country at a young age (49).

Summarily, in the studies in this thesis we have used the terms **foreign-born migrant** (born abroad), **second-generation migrant** (born in Sweden with both parents born abroad) and **non-migrant** (born in Sweden with one or two parents born in Sweden). Adopted participants have been described due to their parents’ country of birth.

2.5 CONTRACEPTIVE COUNSELING AND USE AMONG MARGINALIZED GROUPS

There are some groups that are more vulnerable when it comes to SRHR in general and contraception use in particular.

Women and migrants are marginalized groups particularly vulnerable to lack of SRHR, where only 52% of all women make their own decisions about contraception, sexual relations and healthcare (50). Women are not able to live lives to their full potential and equal to men in many countries due to gender-based violence and discrimination, early marriage, not attending school, unpaid work, female genital mutilation and honor killings (51). Youth or young women, 15-24 years of age (52) are needed special attention when it comes to SRHR. Approximately 32 million women 15-19 years of age in low- and middle-income countries need contraception, and 14 million (43%) of these have an unmet need for modern contraception (8). The unmet need for contraception is much higher among youth than among older women. If the unmet need for contraception were met among those 15-19 years of age, unintended pregnancies would decrease by 60% (8).

Young and especially unmarried women are often denied using contraception in the world today due to the idea of abstinence before marriage, resulting in pregnancy and childbirth complications as a major cause of mortality in this group (53). To increase gender equity among youths, protection of sexual and reproductive privacy and provision of evidence based contraceptive services and comprehensive sexuality education for both girls and boys can be a productive way forward (53).

Beyond young women, also migrant women may be especially vulnerable and need to be taken into account when it comes to SRHR. Migrants are especially exposed to trafficking, child labor, and violence (51). Even where national health care systems cover migrant women it is known that they encounter challenges in for example accessing abortion care due to economic, cultural or information-related barriers (54).

Migrants have a lower contraceptive use and higher abortion rates

Studies from European countries including Sweden and the Nordic countries, have stated that migrants have higher abortion rates compared with non-migrant women (45-48, 55, 56). Higher abortion rates have been explained by lower socio-economic status (47, 48) lower contraceptive use (45, 46) or facing barriers to contraceptive use such as language and knowledge barriers, access to contraception or values that conflict with contraceptive use (55, 57). Contraception influences women, partners, children, families and societies. SRHR are not often prioritized in migrant communities. This may lead to risks such as sexual health complications and violence, especially among youth. Contraception in these communities is essential (58).

2.6 SEXUAL AND REPRODUCTIVE HEALTH SERVICES IN SWEDEN

In Sweden, there is an unmet need for contraception resulting in high rates of unintended pregnancies and abortions.

The unmet need for contraception in Sweden has increased from 9% in 2013 to 15% in 2017 (22, 24). Every year 35 000-38 000 abortions are performed in Sweden which is higher rates than in other Nordic countries and among the highest in Northern Europe (59-61). The Swedish abortion law was established in 1974 and implemented in 1975. According to this law, induced abortion is legal and provided on request from the woman up to 18+0 weeks of gestation and performed regardless of the indication. Beyond 18 weeks the woman has to apply to the Board of Health and Welfare which will assess if there is an indication for the request. Abortion can only be done before “viability”. Thus, the current upper limit is set at 21+6 weeks for a healthy fetus. Most of the abortions (83%) are performed with medication at home within the first 9 weeks (59).

Over the last decades the highest abortion rates in Sweden have been seen among women 20-24 years of age. However, in 2016 there was a change and since then the highest abortion rates are seen among women 25-29 years (59). Nevertheless, the teenage abortion rate has declined steadily over the last 15 years, probably influenced by the use of more effective methods and subsidized contraceptives (59). In Sweden during 2013 to 2014 no registration on induced abortions were collected. The reason for this temporary stop, was a risk of identifying individuals. Since 2014 the registration has resumed, however with less information on the woman and the induced abortion (Figure 1).

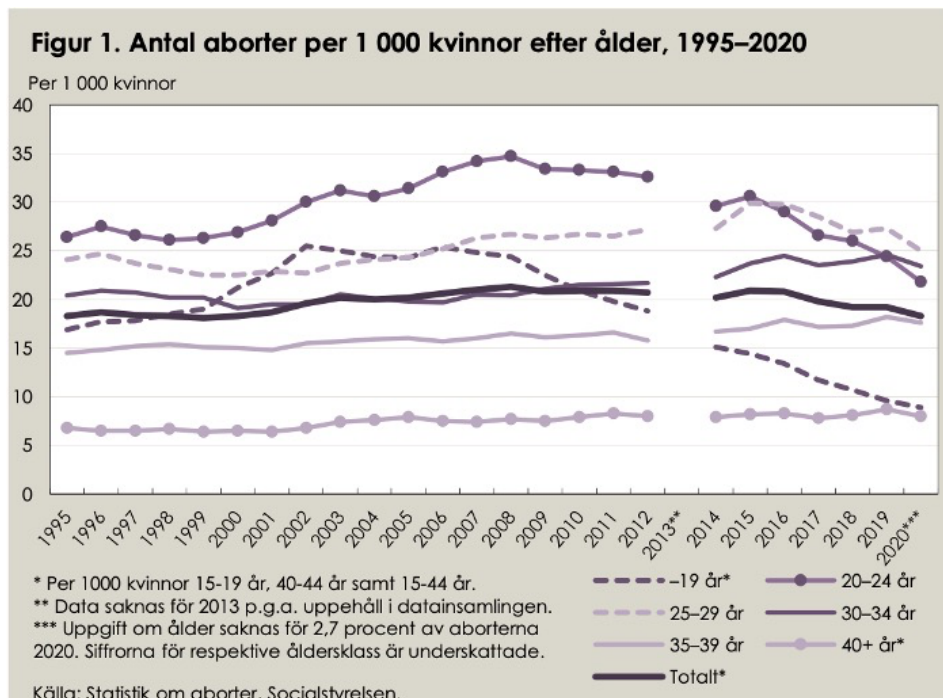


Figure 1. Numbers of induced abortions in Sweden during 1995-2020 from Statistics Sweden (59)

Access to contraceptive counseling in Sweden

Contraceptive counseling is provided by registered nurse midwives (RNM) and gynecologists/physicians at youth, abortion, maternal healthcare, gynecology and sexual transmitted infection (STI)/contraception clinics as well as healthcare via the internet. RNM perform most of the contraceptive counseling for healthy women and prescribe, insert and remove contraceptive methods for pregnancy prevention. The contraceptive counseling including prescription, is always free of charge. After the counseling the woman needs to go to a pharmacy to buy her prescribed method. For youth up to 21 years of age, all hormonal contraceptive methods are free of charge and subsidized for women up to 26 years of age, depending on place of residency in Sweden. For women over 26 years of age, some hormonal contraceptive methods are included in the national health coverage system and thus can be subsidized after having paid a total sum for prescribed medicines.

In Sweden there are youth clinics aiming to promote physical and mental well-being for youth, focusing on SRHR with a health-promoting perspective (62). The youth clinics offer an easy access to all youth from 12 up to 25 years of age. An RNM, a social counselor/psychologist and a physician work at every youth clinic, and are able to provide,

for example contraception and psychosocial counseling. The visits to youth clinics are always free of charge. The youth clinics offers individual visits, both drop-in services and booked appointments and they provide sexuality education and collaborate with schools (62).

Women with a foreign background and a Swedish personal identification number will access contraceptive counseling and contraceptive prescription in the same way as all other women in Sweden. However, an asylum seeker or non-resident woman without documentation, can get immediate health care (that cannot be postponed) which includes maternal health care, abortion care and contraceptive counseling free of charge (63). Contraceptive methods are subsidized for asylum seeker and non-resident women without documentation 18 years of age or older, from a gynecologist/physician. A professional interpreter should be engaged if the woman cannot understand or express herself in Swedish, but this service often has to be scheduled in advance, and therefore can delay the process.

2.7 THEORETICAL FRAMEWORK

This thesis focuses on quality in contraceptive counseling, patients' needs and the uptake and use of contraception. During the research process the theoretical framework for quality in contraceptive counseling has been used to interpret and discuss the findings of this thesis (64). Below follows a description of this theoretical framework (Figure 2).

This framework was developed in order to provide a high quality in contraceptive counseling. This, since research on contraceptive counseling and use, has mainly focused on promoting access and uptake of methods rather than the patients' own experiences regarding the counseling services. The framework is broad to include HCPs, patients and different contexts and was synthesized from family planning and human rights guidance related to contraception services (64).

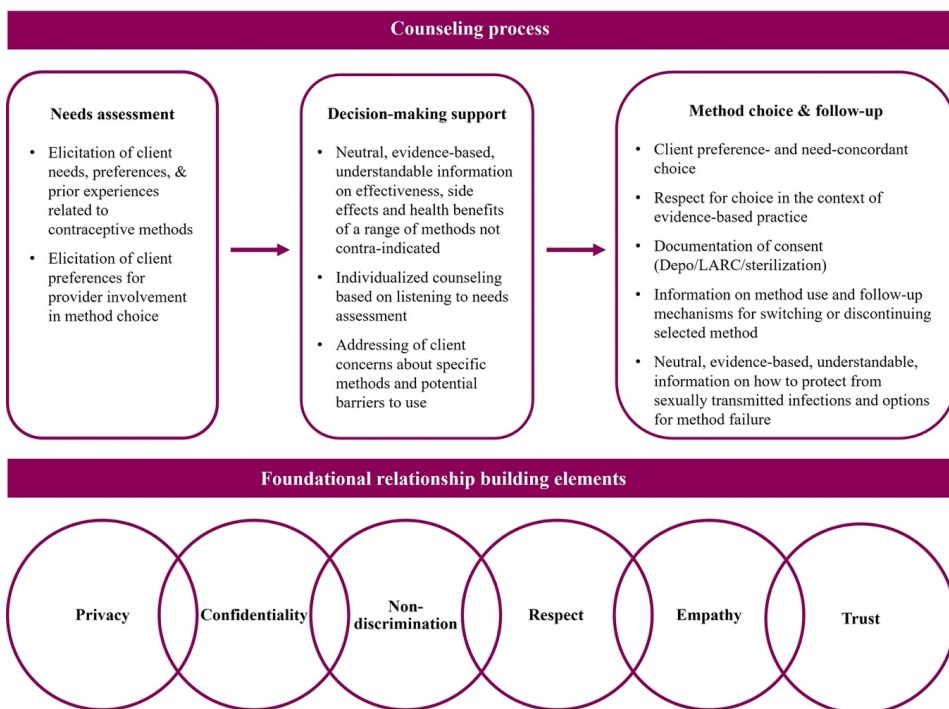


Figure 2. Quality in contraceptive counseling adapted from Holt et al., Contraception 2017 (64).

The first stage in the counseling process is to assess the patient’s needs and preferences in relation to contraceptive methods and the HCP’s involvement in choice of method. The use of a patient-centered approach in this first stage is important. A patient-centered approach is based on the patient’s own specific needs, preferences and experiences.

The second stage in the counseling process is to support the patient in decision-making if desired, i.e. shared decision-making. In contrast to an informed choice, where the patient receives information and then decides herself, shared decision-making is based on information shared by both parties and the HCP is actively involved in supporting the decision-making. However, before a decision can be made, neutral, evidence-based, understandable and individualized information should be provided. Shared decision-making has been shown to improve patient’s satisfaction but also the power imbalance between the HCP and patient, which is important during the encounter for those patients who may experience discrimination, for example migrants.

The third stage of the counseling process is the patient’s own informed decision-making process on the choice of method and follow-up, free from coercion. This stage also addresses the importance of respecting the patient’s choice of whether to use a method or not.

To provide quality in contraceptive counseling these three stages in the counseling process need to be ensured. Further, to provide quality in the contraceptive counseling the encounter should be based on respect, empathy and trust and protect the patient's privacy and confidentiality and not be discriminated.

2.8 RATIONALE

There are still knowledge gaps when it comes to the low usage rates of contraception in Sweden today, and especially among migrants.

We still have a high rate of unintended pregnancies compared to other northern European countries (61) ending in induced abortions in Sweden. Despite that contraceptive counseling and contraceptive methods are provided at different healthcare facilities at none or reduced cost for youth, asylum seeker and undocumented migrants, and knowledge about SRHR for example by sexuality education in schools, are provided.

In Sweden, a higher induced abortion rate and lower contraceptive use, among migrant compared with non-migrant women seeking abortion, was stated (45). This also applied for youth under 19 years of age (65). Since then, the immigration to Sweden has steadily increased (66), however new Swedish studies which examined if these findings still existed, were lacking.

In 2016 the highest numbers of induced abortions were found among women 20-29 years of age (59). Additionally, Swedish women up to 29 years of age, used less effective contraceptive methods despite the method's effectiveness were stated as the most important factor when choosing a method (22). Previous studies showed that contraceptive counseling emphasizing LARC methods, could increase the uptake of the most effective reversible contraceptive methods and decrease unintended pregnancies (26, 35). However, this could not be proved post-abortion (35). These studies removed barriers of cost or provided incentives, and only included clinics with a low LARC prescription or patients who were willing to start or change a contraceptive method. Additionally, these studies made efforts to offer same-day insertions of LARCs. Hence, there was lack of evidence on how to provide contraceptive counseling in a real-life setting to increase the uptake of effective methods and thus decrease unintended pregnancies also post-abortion.

Only a few Swedish studies have interviewed migrant women regarding contraceptive counseling and use (67, 68). These studies only included newly arrived Thai women or pious Muslim migrants from the Middle East or Northern Africa region. Hence, there was sparse Swedish evidence exploring foreign-born migrants' own views on contraceptive counseling and use.

This thesis attempts to shed light on contraceptive counseling and use among all women, however especially focusing on migrant women, in order to improve access and quality of care to ensure an equitable SRH care.

3 RESEARCH AIMS

3.1 OVERARCHING AIM

This thesis includes three original research studies of contraceptive counseling and use among migrant, second-generation migrant and non-migrant women in Sweden. The overarching aim is to provide scientific evidence to ensure equal access and quality of contraceptive counseling and use, with a focus on migrant women in Sweden.

3.2 OBJECTIVES

- To compare ever-in life, current and future planned contraceptive methods and use among non-migrant, migrant and second-generation migrant women seeking induced abortion. (Study I, Paper I)
- To evaluate LARC uptake and pregnancy rates after structured contraceptive counseling at abortion, youth and maternal health clinics. (Study II, Paper II)
- To evaluate effects of structured contraceptive counseling among non-migrants, foreign-born migrants and second-generation migrants. (Study II, Paper III)
- To explore foreign-born migrant women's perceptions and experiences of contraceptive counseling and use. (Study III, Paper IV)

4 MATERIALS AND METHODS

4.1 OVERVIEW OF STUDIES AND METHODS

The different studies and methods used are presented in Table 1.

Table 1. Overview of studies and methods

	Research questions	Design and participants	Data collection and outcomes	Data analysis
Study I, Paper I	Are there differences in contraceptive methods and use between non-migrant, migrant and second-generation migrant women seeking induced abortion?	Cross-sectional multicenter study with an interview-based questionnaire. Patients seeking an induced abortion (n=637).	Primary outcome <i>contraceptive methods and use ever-in life, at conception and planned use</i> measured at the abortion visit.	Descriptive statistics.
Study II, Paper II	Can structured contraceptive counseling increase LARC uptake and reduce pregnancy rates?	Multicenter cluster randomized controlled trial. Clinics providing contraceptive counseling (n=28). Patients seeking contraceptive counseling or induced abortion with counseling included (n=1338).	Primary outcome <i>choice of LARC</i> measured at the counseling visit. Secondary outcomes <i>LARC initiation</i> at 3 months and <i>pregnancy rates</i> at 3 and 12 months follow-up.	Descriptive statistics and logistic mixed-effects models with random intercept for clinic to account for clustering.
Study II, Paper III	Can structured contraceptive counseling increase LARC uptake and use when controlled for migration background? How do participants experience the intervention material?	Multicenter cluster randomized controlled trial. Participants defined as non-migrants, foreign-born migrants and second-generation migrants (n=1295).	Secondary outcomes <i>LARC choice, initiation and use</i> measured at the counseling visit, 3 and 12 months follow-up, and <i>satisfaction with the intervention material</i> measured at the counseling visit.	Descriptive statistics and mixed logistic regression with random intercept for clinic to account for clustering.
Study III, Paper IV	What are foreign-born migrant women's perceptions and experiences on contraceptive counseling and use?	Individual in-depth interviews with foreign-born women seeking contraceptive counseling or induced abortion with counseling included (n=10).	Topic guide exploring perceptions and experiences of contraceptive counseling and use.	Qualitative content analysis, inductive approach.

4.2 RESEARCH SETTING

All studies in this thesis were conducted in Stockholm, Sweden.

Study I (Paper I) was performed at six abortion clinics in Stockholm County, which collectively account for approximately 55% of all abortions performed in the county. Some clinics declined to participate prior to the start date due to a heavy workload, and one abortion clinic closed before the study started and thus, could not participate.

Study II (Paper II and III) was conducted at four abortion clinics (AC), 13 youth clinics (YC) and 11 maternal health clinics (MHC) in the Stockholm region (county). An open invitation was sent to AC, YC and MHC in the region. Some clinics declined to participate due to a heavy workload, while other clinics expressed interest but were unable to participate, due to ongoing competing research studies. Additionally, some clinics withdrew after randomization but before the start of the trial.

Study III (Paper IV) included participants from the AC, YC and MHC in Study II. One physical interview was conducted in close proximity to one of the ACs in a hospital. The other interviews were performed digitally using the Zoom platform due to Covid-19 restrictions.

4.3 CROSS-SECTIONAL STUDY, STUDY I (PAPER I)

4.3.1 Study design and population

We conducted a cross-sectional multicenter study and used an interview-based questionnaire. The inclusion criteria were all pregnant women 18 years of age or older who were seeking an induced abortion at one of the six ACs. Exclusion criteria were those who were doubtful, did not want to have an induced abortion, or resident of another country and only in Sweden for the abortion. A consecutive enrolment was performed.

In this study, we defined three groups of participants: non-migrants, migrants and second-generation migrants.

4.3.2 Data collection

We conducted the study during January to April 2015. At the end of the abortion visit, all eligible patients received oral and written information about the study from the HCP. The written information was professionally translated, back and forth, into the seven most common languages (English, Spanish, Arabic, Mandarin, Russian, Tigrinya and Mongolian) according to the HCPs at the clinics. The patients who consented to participation were asked questions from the questionnaire, and the HCP marked the participant's answers in the form. The interviews lasted for approximately 10-15 minutes and were, conducted with an interpreter if needed. The interpreter was the same interpreter who provided translation

services at the clinical visit. Relatives and/or friends were asked to wait outside the room in order to avoid influencing the participant's answers.

The majority of the questions in the questionnaire had already been used in a Swedish setting (69) and were also modelled after another study (45). The questionnaire covered sociodemographic and reproductive background, the participant's view of the unwanted pregnancy and induced abortion, and the participant's experience and choice of contraceptive method.

Before the study started, the questionnaire was piloted with midwives at one of the participating ACs, in order to probe their understanding of the questions. The questionnaire was also piloted on six patients who came to the clinic for an induced abortion: three migrants, one second-generation migrant and two non-migrant participants. Two professional interpreters were used during these pilots. After each of the pilot tests, a discussion was held with the participants in order to capture their understanding and experience of the questions. No major changes were made to the questionnaire after the pilot tests. Further, these pilot questionnaires were not included in the full data set.

The researchers instructed all HCPs on the implementation of the study before the study started and visited the clinics regularly during the data collection period in order to respond to any questions, as well as to collect and distribute questionnaires. Each clinic received 20 SEK (approximately 2 Euros) per recruited participant.

4.3.3 Sample size, data management and statistical analyses

The power calculation was based on the assumption that 20% of the patients seeking induced abortion would be migrants and that the difference in use of contraceptives *ever-in life* between migrants and non-migrant participants would be 10% according to a previous study (45). To achieve a power of 80%, a sample size of 1300 participants was needed. A data entry form was constructed using EpiData Manager. The questionnaires were entered into EpiData Entry and then exported to SPSS for analysis. All descriptive statistics were analyzed in SPSS Statistics version 23 for Windows. To compare differences in sociodemographic characteristics, contraceptive use and methods between non-migrants, migrants and second-generation migrant participants, we used Chi-square tests. Additionally, we used Fisher's exact test, for some calculations obtained through a Monte Carlo simulation when appropriate. A p-value of less than 0.05 was considered statistically significant. A detailed description of the study can be found elsewhere (70).

4.4 CLUSTER RANDOMIZED CONTROLLED TRIAL, STUDY II (PAPER II & III)

4.4.1 Hypotheses and study design

The LARC forWard counseling (LOWE) trial is based on the hypothesis that if patients receive easily understandable information on the effectiveness of different contraceptive methods for preventing pregnancy, this will affect the contraceptive uptake. Hence, we hypothesized that by starting to present the most effective methods, the LARC methods, more patients would choose these methods. Further, we assumed that if LARC uptake increased among the participants, pregnancy rates would decrease.

The clinics were randomized to intervention or control groups, and the trial was registered at ClinicalTrials.gov NCT03269357 prior to the start.

4.4.2 Eligibility criteria

All clinics that agreed to participate and without ongoing competing trials were eligible. Eligible participants were all patients who were seeking contraceptive counseling or induced abortion with contraceptive counseling included, at one of the participating clinics. Further, eligible were patients who (i) were 18 years of age or older, (ii) could understand Swedish or English or with help of an interpreter, (iii) were sexually active or planning to be within six months and, (iv) had prevention of pregnancy as the primary purpose for using contraception.

4.4.3 Randomization and masking

An independent statistician randomized clinics at a 1:1 allocation to provide either structured contraceptive counseling (intervention) or routine contraceptive counseling (control) according to the clinics' praxis.

Before randomization we stratified by clinic type, i.e. AC, YC and MHC. For YC and MHC, we also stratified by LARC prescription and migration background. Information on baseline prescriptions on LARCs from the included clinics was collected prior to the trial start. Within each clinic type, the clinics were sorted according to their LARC prescription rate in increasing order and then randomized, one to intervention and one to control. Regarding the stratification by migration background, we collected data on the number of participants with migration background and divided by the number of all women in the same age group in the specific municipality. For participants who resided within Stockholm, the largest municipality, we instead collected data and divided by the numbers of their district. We set the cut off at >37% and sorted the clinics into high or low migrant population. The four ACs were randomized without respect to LARC prescription or migration background. This was done as we expected an equal distribution of sociodemographic characteristics due to their larger catchment areas. Masking for participating clinics or participants was not feasible after randomization.

4.4.4 The intervention material

The intervention material specifically designed for the LOWE trial consisted of four parts and can be found at www.ki.se/kbh/lowereal:

- A 7-minute educational video about different contraceptive methods, their efficacy, mechanisms of action, advantages and disadvantages (Figure 3).
- Four key questions focusing on the need for a contraceptive method, what to do if an unintended pregnancy would occur, menstrual bleeding patterns and menstrual pain (Figure 4).
- A modified effectiveness chart (71) showing images, numbers and percentages of the effectiveness of different contraceptive methods at typical use (Figure 5).
- A box with contraceptive models (Figure 6).

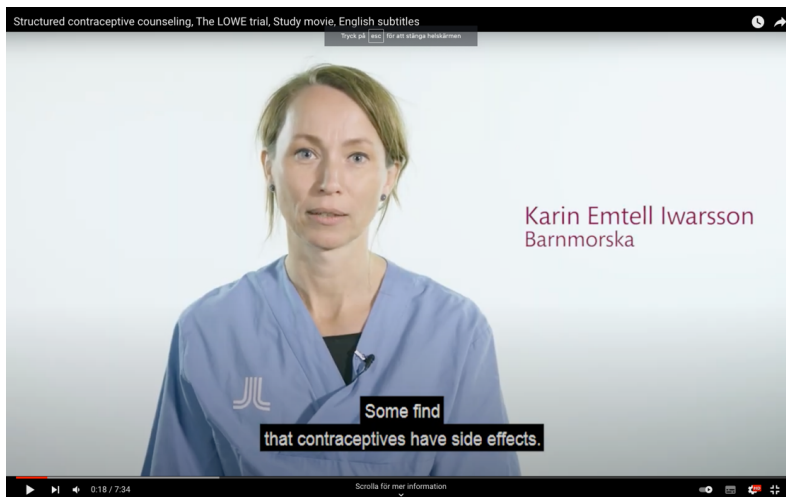


Figure 3. The educational video in the LOWE trial which can be found at <https://youtu.be/moTB8y4Fy5c>

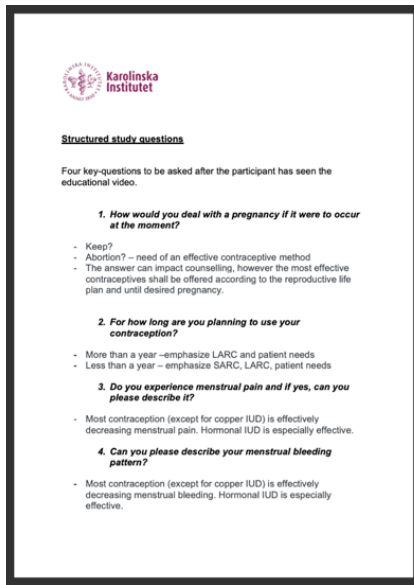


Figure 4. The four key questions

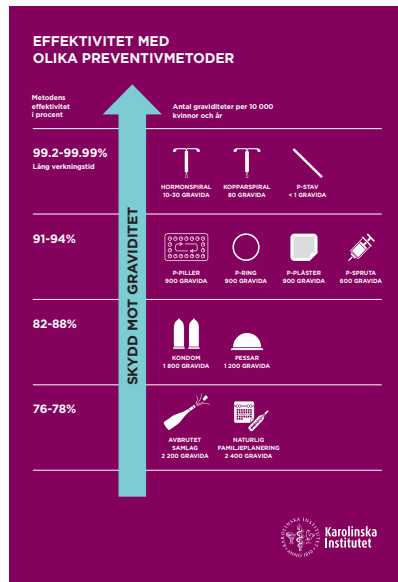


Figure 5. The effectiveness chart



Figure 6. The box with contraceptive models

The intervention material all aimed to provide information on different methods, starting with the most effective methods. Further, the material aimed to get familiar with sizes and shapes of different methods, and additional to reflect over one's own individual need of a contraceptive method. All of the questionnaires used in the study were available in Swedish and English. The video was available in Swedish with subtitles in English.

Clinics randomized to the intervention group were invited to a 3-hour meeting at the research center to receive information on the trial, updates from previous research within the field and training on the intervention material. We expected the specific trial tasks to take 10-15 minutes of additional time.

4.4.5 Data collection

Data collection took place from September 2017 to May 2019, with a follow-up period of one year.

Before inclusion in the trial, the patient received oral and written information at the beginning of the individual counseling encounter. If accepted into the trial, the patient then signed an informed consent. Participants who received counseling at the intervention clinics were shown the educational video at the beginning of the counseling encounter. During the visit, the participants were asked the four key questions, and were shown the effectiveness chart and the box with contraceptive models.

Data collection was carried out through electronic questionnaires. Prior to the counseling the participant filled in a question that aimed to assess which contraceptive method she intended to use. At the end of the counseling visit, all participants and HCPs respectively, regardless of allocation, filled in another questionnaire. The questionnaires included sociodemographic characteristics, reproductive history and questions about former, current and planned use of contraceptive methods. The sociodemographic characteristics included participants' reports on own and parents' country of birth. This information was used in Paper III to define the participants into three groups: non-migrants, foreign-born migrants and second-generation migrants. Additionally, the questionnaire included questions on satisfaction with the intervention material for participants in the intervention group. At 3, 6 and 12 months, follow-up questionnaires were e-mailed to the participants. Each clinic received 20 SEK (approximately 2 Euros) per recruited participant.

4.4.6 Primary and secondary outcomes

For Paper II, the primary outcome was choice of LARC method at the contraceptive counseling visit. Secondary outcomes were initiation of LARCs at 3-month follow-up and pregnancy rates at 3 and 12-month follow-up. The participant's choice of LARCs was reported by the HCP at the end of the clinical visit, while the initiation of LARCs was reported by the participant at the 3-month follow-up. LARC initiation was defined as having had a LARC method inserted within three months from inclusion in the trial. Pregnancy rates were reported by the participant at the 3-month and 12-month follow-up. To minimize loss of

data, several attempts were made to collect follow-up questionnaires through e-mail or telephone. Medical records were scrutinized when no data was reported for the LARC choice and pregnancy rate.

For Paper III the outcomes were choice, initiation and use of LARCs among non-migrants, foreign-born migrants and second-generation migrant participants. The choice and initiation of LARCs were assessed as described above, and the use of LARCs was reported by the participant at the 12-month follow-up. An additional outcome was satisfaction with the intervention material among the three participant groups. Satisfaction was assessed by the participant at the end of the clinical visit.

4.4.7 Sample size, data management and statistical analyses

We assumed that choice of a LARC method would increase from 15% to 30% in the intervention group based on a previous Swedish study (22). The recruitment of 24 clinics with 50 participants at each clinic would give a sample size of 1200 women and a power of 90% at an $\alpha=0.05$. However, we included 28 clinics to allow for a lower mean than 50 participants per clinic. No power calculations were performed for secondary outcomes.

All participants received a study-id. This study-id was stored together with the participant's name, personal identification number and e-mail address, i.e. the code key. Electronical questionnaires were constructed using a KI Survey and were manually sent out to the participants. When the participants had filled in the questionnaire, data were entered into the KI survey and then exported to Excel, SPSS and the statistical software R, for analysis. Data management plans were produced, and data cleaning was conducted by the research team.

All statistics were analyzed with the statistical software R 3.6.0 or SPSS Statistics version 25 and 27 for Mac. The intervention effect was estimated by using mixed logistic regression with random intercept for clinic to account for clustering with an assumption of an intraclass correlation coefficient (ICC) of 0.05, as observed in literature (35). ICC estimates and their 95% confidence intervals (CI) were calculated using the random intercept logistic model ICC from Wu et al. (72). Models were adjusted for age, highest level of completed education, previous pregnancy with and without previous abortion, intended use of LARC and clinic type. We used the intention-to-treat (ITT) analytic approach. This means we analyzed all participants randomized to their group assignment regardless if the participants in the intervention group received the whole intervention or not. To compare data between the intervention and control groups, and/or migration groups, we used the Mann-Whitney U test, Chi-square test with Fisher's exact test when appropriate, and Kruskal-Wallis test. A two-sided p-value of less than 0.05 was considered statistically significant. A detailed description of the LOWE trial can be found elsewhere (73, 74).

4.5 INDIVIDUAL IN-DEPTH INTERVIEWS, STUDY III (PAPER IV)

4.5.1 Participants, procedures and data collection

Between January to June 2021, 10 individual in-depth interviews were conducted with foreign-born migrants from Iran, Iraq and Syria, who had participated in the LOWE trial (73). The eligible participants were invited by e-mail or telephone to the qualitative study. They were informed that regardless of their previous or current use of contraceptive methods, the interview would be valuable for getting their perceptions and experiences of contraceptive counseling and use. They were also informed briefly about the results from the LOWE trial. For the participants who agreed to participate, an appointment was scheduled for either a physical interview or a virtual meeting using the Zoom platform. Due to the Covid-19 pandemic restrictions, only one physical interview was conducted. All of the interviews were held in strict privacy by the researcher and participants were also recommended to be in privacy during the interview. At the beginning of each interview, the researcher (KEI) presented herself, the aim of the interview, approximately time frame for the interview, the recording system used and urged participants not to use personal names during the interviews. Prior to the interviews, participants received written information about the study via e-mail or mail. Before the interview started the participant had the opportunity to ask questions before signing the informed consent in two copies (one copy for the participant and the other copy was sent by mail to the researcher).

A topic guide with probes was used to expand on the informants' responses. The guide contained open-ended questions that explored the informants' perceptions and experiences of contraceptive counseling and use. All informants spoke Swedish, therefore, all interviews were conducted in Swedish and audio recorded. The researcher's (KEI) perceptions prior to each interview, and challenges and reflections after each interview, were noted and discussed with co-authors. The interviews lasted for approximately one hour with a range from 27-75 minutes. The interviews were transcribed verbatim by the researcher and a research assistant, and the analysis process started before all interviews were conducted hence, no further interviews were conducted once no new information was generated.

4.5.2 Qualitative content analysis

We used qualitative content analysis to analyze our findings as described by Graneheim and Lundman (75). We chose this method because it focuses on subjects, contexts, similarities and differences of the data and analyzes both manifest and latent content. We worked inductively, which means that we moved from the data towards a theoretical understanding (76). Our analysis process started with multiple readings of the transcripts. The transcripts were transferred to NVivo 12 version 1.5 for Mac and coded into English. Meaning units were found from the transcripts and then condensed. The condensed meaning units were coded with a label close to the text. The codes were analyzed, and sub-categories and categories were found at a higher abstract but still descriptive level, i.e. a manifest content. From the categories a more latent theme was found, meaning a higher abstraction and

interpretation level of the data. The sub-categories, categories and theme were discussed within the research team and reorganized several times to find the correct manifest and latent level until an agreement was reached.

4.6 ETHICAL CONSIDERATIONS

All studies in this thesis received ethical approval from the regional ethics committee in Sweden:

Study I (Paper I) Dnr 2014/1191-31/5, amendment 2014/2159-32

Study II (Paper II and III) Dnr 2017/525-31/4, amendment 2017/1300-32, 2018/234-32, 2018/940-32 and 2019-00931

Study III (Paper IV) Dnr 2020-05962

Issues around reproductive health can be a sensitive topic for some individuals, especially when it concerns induced abortion and contraception. Also, issues regarding ethnicity can be a sensitive topic, especially in combination with SRHR. Ethical principles have therefore been discussed and considered when we designed the different studies in this thesis.

Respect for autonomy: All participants have received oral and written information about the different studies before they signed or gave oral consent. They were informed that participation was voluntary and that their responses were confidential.

In Study I, only verbal consent was collected due to the fact that migrants sometimes have concerns and bad experiences of signing official documents. Since it was important for the study to include all patients at the ACs, especially migrants, this verbal consent was emphasized in the amendment 2014/2159-32.

In Study I and II, we have collected data on background characteristics such as the patients' and parents' country of birth. For some participants, this information can be considered sensitive information. Therefore, participants were informed that responses to all questions were voluntary. Additionally, the participants were informed that they could withdraw their participation at any time without needing to explain and without consequences.

In Study II, we were aware of that some women may have felt obliged to choose a contraceptive method, and especially a LARC method, however in the follow-up questionnaires, the participants were able to express their opinions if they stopped using the chosen method, as well as their satisfaction with the contraceptive method.

In Study III, we were aware of that some participants may felt uncomfortable about being contacted after Study II had ended, we were therefore sensitive to this situation and stressed that participation in the study was voluntary.

Beneficence: It is important for women as well as for the society to increase the knowledge of abortions and contraception in order to increase contraceptive use and decrease unwanted pregnancies. Participants may have benefits from participation in the studies by being more closely monitored than they would be in standard care. There is no routine in clinical practice for collecting information on migrant status, however our research findings may be useful and beneficent for all women in general and migrants in particular. Participants may have received additional benefits in Study II through access to extended contraceptive counseling and in Study III through the sharing, reflection and discussion about individual issues regarding SRHR.

Non-maleficence: All data were protected by law and national guidelines, and only researchers in the studies were handling the data. Confidentiality is therefore secured for all participants. Thus, the potential harm induced on the participants was minimal. Additionally, no participant will be identified in published literature.

In Study II, we have considered that the insertion of LARC methods can be painful, unlike SARC methods. Therefore, counseling is of great importance as to make efforts to ease the pain. The participants in the study received standard care when a LARC method was inserted.

Justice: All women meeting the inclusion criteria, and without any exclusion criteria, were asked to participate in the studies regardless of ethnicity or socioeconomic status. All patients could be assisted of an interpreter in the studies if they had a native language other than Swedish. Migrants in general, and female migrants in particular, are groups that are often excluded from research studies. Our research takes the principle of justice into account.

Taking all of the above ethical considerations into account, we believe that the benefits of these research projects far outweigh the potential harm induced on the participants.

5 RESULTS

5.1 OVERVIEW OF MAIN RESULTS

The different studies with their objectives and main results are presented in Table 2. Additional results can be found in the reprints of Paper I-IV appended to this thesis.

Table 2. Overview of study objectives and results

	Objectives	Main results
Study I, Paper I	To compare ever-in life, current and future planned contraceptive methods and use among non-migrant, migrant and second-generation migrant women seeking induced abortion.	Migrant and second-generation migrant participants had a lower contraceptive use ever-in life compared with non-migrants. Differences in contraceptive methods were seen among the three participant groups, ever-in life and as future planned method. More migrant and second-generation migrant participants planned to use a LARC method compared with non-migrants.
Study II, Paper II	To evaluate LARC uptake i.e. choice and initiation, and pregnancy rates after structured contraceptive counseling at abortion, youth and maternal health clinics.	Structured contraceptive counseling increased LARC uptake and decreased pregnancy rates at abortion clinics at 12 months follow-up compared with routine counseling.
Study II, Paper III	To evaluate effects of structured contraceptive counseling among non-migrants, foreign-born migrants and second-generation migrants. Additionally, to evaluate the satisfaction with the intervention material between the three participant groups.	Structured contraceptive counseling increased LARC uptake and use when controlled for migration background. Additionally, a high satisfaction was seen with the intervention material among all participants however, migrant and second-generation migrants found the effectiveness chart more supportive in contraceptive choice compared with non-migrant participants.
Study III, Paper IV	To explore foreign-born migrant women's perceptions and experiences of contraceptive counseling and use.	Taboos such as premarital sex and sex in young ages, influenced foreign-born migrants' contraceptive use. Own developed strategies to be able to use contraception were shared. Additionally, the foreign-born migrants expressed specific needs from the HCP in the counseling encounter.

5.2 ARE THERE DIFFERENCES IN CONTRACEPTIVE METHODS AND USE BETWEEN NON-MIGRANT, MIGRANT AND SECOND-GENERATION MIGRANT WOMEN SEEKING INDUCED ABORTION? STUDY I (PAPER I)

A total number of 938 patients were asked to participate in the study, whereof 637 accepted participation and were included in the study.

Significant differences in sociodemographic characteristics were seen between the groups, where migrants were more likely to be older, married, to have children, and to state Islam as their religion. More than two thirds had lived in Sweden for more than 5 years. The highest proportion of migrants were born in the Eastern Mediterranean according to the WHO's regions (77).

Migrants (131/148, 89%) and second-generation migrants (61/64, 95%) had a lower contraceptive use *ever-in life* compared with non-migrants (420/425, 99%) ($p < 0.001$). Pills and condoms were the most common contraceptive methods used ever-in life among all participants. Some significant differences in contraceptive methods could be seen between the groups, where more non-migrants had used pills and withdrawal to a higher extent and migrants had used a copper IUD (Table 3).

Table 3. Contraceptive methods previously used among non-migrant, migrant, and second-generation migrant participants seeking abortion care in Stockholm County (multiple choices possible)

Contraceptive method	Non-migrant n (%)	Migrant n (%)	Second-generation n (%)	Total n (%)	<i>p</i> -value
Pills	374 (89.0)	83 (63.4)	49 (80.3)	506 (82.7)	<0.001
Condoms	230 (54.8)	65 (49.6)	29 (47.5)	324 (52.9)	0.396
Withdrawal	99 (23.6)	16 (12.2)	8 (13.1)	123 (20.1)	0.006
Copper IUD	70 (16.7)	31 (23.7)	6 (9.8)	107 (17.5)	0.047
Implant	60 (14.3)	18 (13.7)	14 (23.0)	92 (15.0)	0.187
Vaginal ring	67 (16.0)	13 (9.9)	10 (16.4)	90 (14.7)	0.218
Rhythm method	62 (14.8)	14 (10.7)	7 (11.5)	83 (13.6)	0.435
Hormonal IUS	34 (8.1)	7 (5.3)	4 (6.6)	45 (7.4)	0.587 ^b
Patch	16 (3.8)	2 (1.5)	1 (1.6)	19 (3.1)	0.460 ^b
Injection	12 (2.9)	3 (2.3)	2 (3.3)	17 (2.8)	0.857 ^b
Other*	18 (4.3)	7 (5.3)	3 (4.9)	28 (4.6)	
LARC**	135 (31.8)	46 (31.1)	23 (35.9)	204 (32.0)	0.770

*The methods grouped as 'other' included, for example, lactational amenorrhea, diaphragms and emergency contraceptive pills. **LARC = IUD and implant ^b Fisher's exact test

Further, though not significant, a lower proportion of contraceptive use *at conception* could be seen among migrants (37/148 25%) and second-generation migrants (19/64, 30%) compared with non-migrants (146/425, 34%) ($p=0.102$). There were no significant differences between the groups regarding different methods. However, the most reported methods used at conception among all participants were condoms and pills, and the reasons given for contraceptive failure were to not have used the method according to prescription or condom failure.

We found a lower proportion of *planned contraceptive use* after the abortion among migrants (132/147, 90%) and second-generation migrants (58/64, 91%) compared with non-migrants (402/425, 95%) ($p=0.051$). Hormonal IUD and pills were the most common planned methods for all participants, however not significant. On the other hand, we could see significant differences where migrants (85/131, 65%) and second-generation migrants (35/57, 61%) planned to use LARC methods to a higher extent compared with non-migrants (193/399, 48%) ($p=0.002$). We could also see some significant differences in planned LARC use between the groups, where more migrants planned to use the copper IUD and second-generation migrants planned to use the implant to a higher extent compared with the other groups (Table 4). Apart from preventing pregnancy, the absence of side effects was the most important factor when choosing a contraceptive method stated by all participants.

Table 4. Type of contraceptive method planned for use post-abortion among non-migrant, migrant and second-generation migrant participants seeking abortion care in Stockholm County

Type of contraceptive method	Non-migrant n (%)	Migrant n (%)	Second-generation n (%)	Total n (%)	<i>p</i> -value
Hormonal IUS	111 (27.6)	40 (30.3)	18 (31.0)	169 (28.5)	0.760
Pills	113 (28.1)	30 (22.7)	9 (15.5)	152 (25.7)	0.083
Copper IUD	51 (12.7)	29 (22.0)	8 (13.8)	88 (14.9)	0.033
Implant	26 (6.5)	14 (10.6)	9 (15.5)	49 (8.3)	0.036 ^b
Vaginal ring	34 (8.5)	2 (1.5)	4 (6.9)	40 (6.8)	0.012 ^b
Condoms	31 (7.7)	6 (4.5)	3 (5.2)	40 (6.8)	0.482 ^b
Patch	5 (1.2)	1 (0.8)	0 (0.0)	6 (1.0)	1.000 ^b
Rhythm method	2 (0.5)	1 (0.8)	0 (0.0)	3 (0.5)	0.688 ^b
Withdrawal	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.2)	0.321 ^b
Injection	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.2)	0.321 ^b
Other*	26 (6.5)	6 (4.5)	6 (10.3)	38 (6.4)	
LARC**	193 (48.4)	85 (64.9)	35 (61.4)	313 (53.3)	0.002

* The methods grouped as 'other' included for example unspecified types of IUDs. **LARC = IUD and implant

^bFisher's exact test

We could see some significant differences between the groups in knowledge of contraception. A lower proportion of migrants (93/148, 63%) had received sexuality education earlier in life, compared with second-generation migrants (60/64, 94%) and non-migrant participants (414/424, 98%) ($p < 0.001$). Additionally, a lower proportion of migrants (128/148, 87%) had received prior contraceptive counseling compared with second-generation migrants (62/64, 97%) and non-migrant participants (418/423, 99%) ($p = 0.001$). Migrants (25/146, 19%) also stated that they had less sufficient knowledge to choose a contraceptive method after the abortion visit, which included contraceptive counseling, compared with the second-generation migrants (8/62, 13%) and non-migrant participants (41/422, 10%) ($p = 0.002$). None stated cost as an important factor for choosing a contraceptive method. Religion was only reported by one participant as a reason for not using or planning to use contraception post-abortion.

5.3 CAN STRUCTURED CONTRACEPTIVE COUNSELING INCREASE LARC UPTAKE AND REDUCE PREGNANCY RATES? STUDY II (PAPER II)

A number of 14 clinics were included in the intervention or control group, respectively. For the primary outcome LARC choice, a total number of 1338 participants (intervention n=658, control n=680) were included in the analysis. Further, data was analyzed from 1297 (96.9%) participants for the secondary outcome, pregnancy rate at 3-month follow-up, and 1289 (96.3%) participants at the 12-month follow-up. For LARC initiation, data from 1059 (79.1%) participants were included.

We found that a lower proportion of participants in the intervention group had experienced a vaginal birth (98/654, 15%) compared to the control group (133/679, 19.6%). Further, participants at the MHCs reported a lower intended LARC use in the intervention group (32/264, 12.2%) compared with the control group (57/266, 21.4%). No other baseline characteristics differed between the groups.

Our findings showed that a statistically higher proportion of participants in the intervention group chose LARCs compared with participants in the control group. This was also shown in each clinic type (Table 5).

Table 5. Primary outcome by LARC choice

	LARC* choice		Intervention effect		P-value
	Intervention (n = 658)	Control (n = 680)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Adj. OR
Total (n = 1338)	267 (40.6%)	206 (30.3%)	1.70 (1.19-2.35)	2.77 (1.99-3.86)	<0.001
Abortion clinic (n=226)†	83 (74.8%)	64 (55.7%)	2.36 (1.34-4.15)	3.37 (1.76-6.47)	<0.001
Youth clinic (n=582)	123 (43.5%)	76 (25.4%)	2.31 (1.48-3.62)	3.31 (2.01-5.46)	<0.001
Maternal health clinic (n = 530)	61 (23.1%)	66 (24.8%)	0.99 (0.53-1.83)	1.92 (1.03-3.57)	0.039

Data are n (%) and Odds Ratio (95% Confidence Interval).

All models were adjusted for age, highest completed education, previous pregnancy with and without previous abortion, intended use of LARC, and clinic type.

LARC, long-acting reversible contraception *intrauterine device or subdermal implant.; OR, odds ratio; CI, confidence interval

†The model for the abortion clinics is estimated without the random intercept for clinic.

Models for each clinic type are estimated separately (hence no interaction-term was estimated)

We found that most of the participants who had intended to use a LARC method also chose one. However, among the participants who did not intend to use a LARC method, a significant difference was seen where more participants in the intervention group (145/523, 27.7%) compared with the control group (66/513, 12.9%) (OR 3.02, 95% CI 2.14-4.28) chose

a LARC method. Further, we found a higher proportion who had initiated LARCs at the 3-month follow-up in the intervention group (213/528, 40.3%) compared with the control group (153/531, 28.8%) (OR 1.74, 95% CI 1.22-2.49). Findings also showed a significant lower pregnancy rate among participants at ACs at the 12-month follow-up in the intervention group compared with the control group (Table 6).

Table 6. Pregnancies by group allocation and clinic type

	Intervention n (%)	Control n (%)	Odds Ratio* (95% Confidence Interval)	P-value
Total				
3 months† (n = 1297)	8/639 (1.3%)	16/658 (2.4%)	0.62 (0.16-2.36)	0.485
12 months‡ (n = 1289)	39/634 (6.2%)	56/655 (8.5%)	0.75 (0.43-1.31)	0.307
Abortion clinic				
3 months§ (n=207)	4/102 (3.9%)	11/105 (10.5%)	0.35 (0.11-1.13)	0.080
12 months‡ (n=203)	13/101 (12.9%)	28/103 (27.2%)	0.39 (0.18-0.88)	0.023
Youth clinic				
3 months§ (n=572)	1/279 (0.4%)	3/292 (1.0%)	0.35 (0.03-3.57)	0.374
12 months‡ (n=571)	10/279 (3.6%)	17/292 (5.8%)	0.60 (0.26-1.37)	0.227
Maternal health clinic				
3 months§ (n = 519)	3/258 (1.2%)	2/261 (0.8%)	1.52 (0.25-9.19)	0.646
12 months‡ (n = 515)	16/254 (6.3%)	11/260 (4.2%)	1.52 (0.67-3.43)	0.315

Data are n (%) and odds ratio (95% confidence interval). 12months: with Control group as reference, mixed models adjusted for intraclass

correlation was used to generate the effect sizes in each clinic type.

*All odds ratios are calculated as the effect on the intervention group using the control group as the reference.

**Logistic mixed model with clinic as random effect and intervention as the only fixed effect. In this model the clinic could not be included as a factor as there were too few events. Similarly, the model could not be adjusted for intraclass correlation.

***Logistic mixed model with clinic as a random effect and intervention and, for the total model, clinic type as the fixed effects, adjusted for intraclass correlation.

****Separate logistic regression models for each clinic type.

5.4 CAN STRUCTURED CONTRACEPTIVE COUNSELING INCREASE LARC UPTAKE AND USE WHEN CONTROLLED FOR MIGRATION BACKGROUND? HOW DO PARTICIPANTS EXPERIENCE THE INTERVENTION MATERIAL? STUDY II (PAPER III)

A total of 1295 participants were included in the analysis of whom we had migration background, whereof 1010 non-migrants, 169 foreign-born migrants and 116 second-generation migrants. The four most common countries of birth among foreign-born participants were Iran, Iraq, Poland and Finland and the median numbers of years living in Sweden was 11 years.

Foreign-born migrants were older (median 27-28 years) compared with non-migrants and second-generation migrants (median 23-24 years). A higher proportion of foreign-born migrants had experienced or had a current pregnancy, and had also given birth to a higher extent compared with the other two participant groups. In the intervention group there were differences seen between the three participants groups, showing a lower proportion of foreign-born migrants were singles. Additionally, a higher proportion of foreign-born participants reported primary school or college/university as their highest completed level of education, compared with the other participant groups. No other significant differences could be seen in background characteristics.

The majority of the participants in both intervention and control group reported that religion was not important in their lives/atheist (65.3%) or Christianity (26.6%) as their affiliation.

We could state a higher LARC choice, initiation and use among the three participant groups in the intervention group compared with the control group when adjusted for clinic type, intended use of LARC, age, highest level of completed education and previous pregnancy with and without previous abortion (Table 7). No significant differences were found among the participant groups regarding pregnancy rates at the 3 and 12-month follow-up. More foreign-born migrants in the intervention group (17/90, 18.9%) stated that cost impacted their contraceptive choice compared with non-migrants (67/491, 13.6%) and second-generation migrants (3/58, 5.2%), however this was not significant ($p=0.059$).

Table 7. LARC choice (at clinic visit), initiation (FU3) and use (FU12) by group allocation and the three participant groups

	Intervention n (%)	Control n (%)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
<i>LARC choice</i>				
Total	262/639 (41.0)	199/656 (30.3)	1.75 (0.95-3.24)	2.85 (2.04-3.99)
Non-migrants	199/491 (40.5)	153/519 (29.5)	1 (Ref.)	1 (Ref.)
Foreign-born migrants	34/90 (37.8)	32/79 (40.5)	1.04 (0.72-1.50)	1.02 (0.64-1.63)
Second-generation migrants	29/58 (50.0)	14/58 (24.1)	0.95 (0.61-1.46)	1.14 (0.68-1.93)
<i>LARC initiation</i>				
Total	211/486 (43.4)	150/485 (30.9)	1.93 (1.07-3.45)	2.90 (1.97-4.27)
Non-migrants	172/391 (44.0)	119/403 (29.5)	1 (Ref.)	1 (Ref.)
Foreign-born migrants	22/56 (39.3)	21/47 (44.7)	1.17 (0.75-1.84)	1.24 (0.71-2.16)
Second-generation migrants	17/39 (43.6)	10/35 (28.6)	0.93 (0.55-1.57)	1.13 (0.61-2.11)
<i>LARC use</i>				
Total	189/422 (44.8)	149/429 (34.7)	1.61 (0.99-2.61)	2.09 (1.47-2.96)
Non-migrants	150/338 (44.4)	123/357 (34.5)	1 (Ref.)	1 (Ref.)
Foreign-born migrants	22/46 (47.8)	14/43 (32.6)	0.99 (0.62-1.58)	0.97 (0.55-1.71)
Second-generation migrants	17/38 (44.7)	12/29 (41.4)	1.12 (0.66-1.91)	1.45 (0.80-2.62)

The results were analyzed using mixed logistic regression, and all models include a random intercept for clinic. The unadjusted model includes group allocation and the three participant groups. In addition to group allocation and the three participant groups, the adjusted model includes clinic type, intended use of LARC, age, highest level of completed education, and previous pregnancy with and without previous abortion. The reference categories for the independent variables were allocation to control group and being non-migrant.

CI, confidence interval; LARC, long-acting reversible contraception; OR, odds ratio.

We found a high satisfaction rate among all participants in the intervention group with the intervention material where most rated the material as “very good” or “good”. A significantly higher proportion of foreign-born migrants (58/84, 69.0%) and second-generation migrants (40/54, 74.1%) found the effectiveness chart supportive in contraceptive choice, compared with non-migrants (259/434, 59.7%) ($p=0.048$) (Table 8). None responded religion as a reason for not choose, start, switch or stop to use a contraceptive method.

Table 8. Satisfaction with the intervention material among non-migrants, foreign-born migrants and second-generation migrants in the intervention group

	Non-migrants n = 491 n (%)	Foreign-born migrants n = 90 n (%)	Second-generation migrants n = 58 n (%)	Total n = 639 n (%)	p-value
Educational video					0.080*
Very good	279 (56.8)	58 (64.4)	41 (70.7)	378 (59.2)	
Good	186 (37.9)	31 (34.4)	13 (22.4)	230 (36.0)	
No opinion	24 (4.9)	1 (1.1)	3 (5.2)	28 (4.4)	
Poor	2 (0.4)	0	1 (1.7)	3 (0.5)	
Very poor	0	0	0	0	
Video was supportive in contraceptive choice	322 (65.6)	64 (71.1)	45 (77.6)	431 (67.4)	0.132**
Effectiveness chart					0.086*
Very good	236 (48.1)	50 (55.6)	33 (56.9)	319 (49.9)	
Good	169 (34.4)	33 (36.7)	19 (32.8)	221 (34.6)	
No opinion	30 (6.1)	1 (1.1)	2 (3.4)	33 (5.2)	
Poor	0	0	0	0	
Very poor	0	0	0	0	
I was never shown the effectiveness chart	56 (11.4)	6 (6.7)	4 (6.9)	66 (10.3)	
Chart was supportive in contraceptive choice	259/434*** (59.7)	58/84 (69.0)	40/54 (74.1)	357/572 (62.4)	0.048**
Box with contraceptive models					0.086*
Very good	212 (43.2)	45 (50.0)	35 (60.3)	292 (45.7)	
Good	143 (29.1)	25 (27.8)	9 (15.5)	177 (27.7)	
No opinion	38 (7.7)	6 (6.7)	4 (6.9)	48 (7.5)	
Poor	0	0	0	0	
Very poor	0	0	0	0	
I was never shown the box with the models	98 (20.0)	14 (15.6)	10 (17.2)	122 (19.1)	
Models were supportive in contraceptive choice	241/391 (61.6)	51/76 (67.1)	32/48 (66.7)	324/515 (62.9)	0.567**

*Kruskal-Wallis Test **Chi-square test ***1 Missing answer

Analyzed using Kruskal-Wallis test and Chi-square test. Contains only data from the intervention group and is therefore not adjusted for intraclass correlation. However, we confirmed the results by using the Cochran-Mantel Haenzel test which is stratified for center and by this handling the possible clustering effect.

5.5 WHAT ARE FOREIGN-BORN MIGRANT WOMEN'S PERCEPTIONS AND EXPERIENCES OF CONTRACEPTIVE COUNSELING AND USE? STUDY III (PAPER IV)

The informants (n=10) median age was 33 years (range 21-41) and all had lived in Sweden for more than 10 years. Most of the informants had been pregnant (8/10) but more than half of the informants (6/10) did not have any children. The majority of the informants had reported in Study II that they belonged to Islam or No religion (73).

The analysis generated several subcategories, three categories and one theme, which are presented in Table 9.

Table 9. The informants' responses analyzed and described in sub-categories, categories and theme

Subcategory	Category	Theme
Avoid sex and contraception at a young age and no premarital sex	Socio-cultural taboos related to sex hindering contraceptive use	A struggle to achieve increased reproductive autonomy
Culture and religion influence sex and contraceptive use		
Gender differences may affect women's reproductive autonomy		
Keeping sex and contraceptive use secret	Strategies to navigate taboos influencing contraceptive use	
Emancipated to be able to use contraception		
Legitimise contraceptive use		
Needs related to language barriers	Need for a respectful encounter free of stress with adapted and comprehensive contraceptive counseling	
Fear of being judged and confidentiality being revealed		
HCPs need to be aware of common myths and misconceptions		
Inconsistent perceptions and experiences about bleedings		
Proactive and extended information		
An encounter free of stress can facilitate contraceptive counselling		

5.5.1.1 Theme: A struggle to achieve increased reproductive autonomy

The theme describes foreign-born migrants' struggle to achieve an increased reproductive autonomy. This struggle is due to socio-cultural taboos that hinder contraceptive use. To be able to use contraception, foreign-born migrants have developed strategies to navigate these taboos. They also have specific needs that HCP's need to be aware of and take into account in the contraceptive counseling encounter.

5.5.1.2 Socio-cultural taboos related to sex hindering contraceptive use

Sex at a young age and premarital sex were shared as taboos among the informants:

'aw, you are so young, why should you be sexually active now, you see /.../ as long as you get married you are "in the clear", then it is like, then you can do whatever you want to, then you are ready' (Informant 1, 21 years)

However, premarital sex at an older age could be considered acceptable, according to one informant whose parents started to realize they may not get any grandchildren if their daughter has to marry before she can have sex and conceive. Therefore, they started to relax their attitude towards premarital sex. The informants shared that the taboos were based on cultural norms. It was shared that your country of birth does not always affect norms and taboos, rather it is the place where you are raised within Sweden. For example, if you are raised in an area where the population tries to maintain special norms and taboos, then it is hard to break these regardless of your country of birth. A family's attitudes and values may change when moving to a new country, however other factors such as stipulated norms from the extended family and their friends may also affect how the family holds on to norms and taboos in a new country. Religion was sometimes mentioned to play a role in a conservative attitude towards the taboos. It was shared that pious Muslim women may not use contraception to not interfere with God's will to conceive. On the contrary, it was shared that the culture affects contraceptive use to a higher extent than one's religion, and an example of divided views on sex and contraception within the Christian church was shared. The informants also reported a gender difference affecting the taboos. Even if the norms and taboos included both genders, males often experienced a more relaxed attitude if they broke these, according to the informants.

5.5.1.3 Strategies to navigate taboos influencing contraceptive use

To handle the taboos related to sex at a young age and premarital sex, the informants had developed special strategies to navigate them. Keeping contraceptive use a secret was one strategy shared by the informants. Asking for a contraceptive prescription on paper instead of an electronic prescription could hinder parents from discovering the prescription at the pharmacy for a minor daughter below 18 years of age. Another strategy was to use an invisible contraceptive method. One informant argued and emancipated from her family instead of handle the taboos secretly. This, to be able to live a desired life without the taboos, which resulted in a good relationship with her family:

'it is taboo within my culture to have premarital sex. It was a time when I fought a lot with my family about my identity and the cultural crash, but when I moved away from my family and...thus, I opposed their principles and showed them, if you want to have me within your lives I have to decide how to live my own life. And today I am married to a Swedish guy and not what my parents had expected, and they are super happy for me' (Informant 3, 32 years)

A third strategy was to legitimize one's own contraceptive use. Informants shared other reasons for contraceptive use than pregnancy prevention, such as treatment for bleeding issues. Also, to know that a mother had used contraception was described as cool by one informant.

5.5.1.4 Need for a respectful encounter free of stress with adapted and comprehensive contraceptive counseling

The informants not only developed strategies to navigate taboos related to sex and contraception, but they also expressed specific needs for the contraceptive counseling encounter. A need described was related to language barriers and to search for information in one's own native language prior to the contraceptive counseling. This, to facilitate to understand the information given during the visit. Also, the use of an interpreter or having an HCP who speaks the same language was mentioned as a way to facilitate the encounter. However, having an HCP from the same country of origin was sometimes worrying due to a fear of being judged by an HCP who might be influenced by the same taboos. Also, a fear of the confidentiality being revealed by an HCP with the same background was shared. On the contrary, having an HCP with a non-migrant background could sometimes fuel the taboos. One informant had experienced rude comments from a non-migrant HCP who had expressed negative assumptions about the informant's background and how it may have affected her. In conclusion, the informants need to be reassured of a respectful encounter without judgmental and rude attitudes and with assurances of confidentiality.

Further, the informants expressed a need for the HCP as to be proactive when providing information and to address common myths and correct misconceptions. Misconceptions such as contraceptives can affect the future fertility was shared. Bleeding issues were also raised during the interviews. Despite the fact that an HCP described that amenorrhea was normal when using a certain contraceptive method, the informant's mother had another view, causing the informant to feel uncertain about the method. Providing proactive and extended information may take extra time, and the informants shared the need for stress-free contraceptive counseling encounters. It was shared that one informant had tried to book several appointments in order to receive a less stressful meeting, but instead got drop-in visits. The informant had experienced stress during the encounter and felt that she could not ask questions or receive extended information because of the limited time during the drop-in visit which resulted in a less comprehensive contraceptive counseling encounter:

'I usually have had, or I only have had drop-in appointments, and they have always been a bit stressful. Because they should be short visits /.../ The drop-in visits I have had, it has not

been so much time /.../ 20 patients are awaiting outside /.../ I have called to book an appointment for contraceptive pills, but then I have been reorganized to drop-in visits. I have tried to book, I know I tried two times but then I was reorganized to drop-in visits /.../ Yeah, it was, I thought, now it is like this, thus I have to continue with my pills.'

(Informant 6, 29 years)

6 DISCUSSION

6.1 SUMMARY OF FINDINGS

The findings in this thesis are important as they could increase HCPs' knowledge of contraceptive use among migrants. Further, to present a way for providing person-centered contraceptive counseling with high quality. This to ensure an equitable healthcare for all.

Our main findings conclude that migrant and second-generation migrant women still have a lower contraceptive use compared with non-migrants in Sweden. There were differences between the groups in methods used but also planned to be used after the abortion. Also, migrant participants stated a lower sufficient knowledge to choose a contraceptive method post-abortion compared with non-migrants and second-generation migrants. We found that premarital sex and sex at a young age are taboos that influence migrant women's perceptions and experiences of contraception and suggests to some extent explain the lower contraceptive use. However, to be able to use contraception, migrants have found their own strategies to navigate the taboos. Except finding their own strategies, migrants also state specific needs from the HCP during the counseling encounter, to improve the contraceptive counseling and use. Evaluating structured contraceptive counseling we found that LARC uptake increased, and pregnancy rates at 12-month post-abortion decreased significantly. Additionally, the structured contraceptive counseling also increased LARC uptake and use, when controlled for migration background. The satisfaction with the information material, as part of the intervention, was high among all participants, and migrants and second-generation migrants stated that the chart informing about effectiveness of different contraceptive methods was especially supportive in their choice of contraception.

The findings from this thesis may be used to accelerate progress towards universal access to SRHR and SRH services, including contraception, stated in the SDGs in Agenda 2030 (1). Below I will discuss the main findings of this thesis, how a lower contraceptive use can be explained and how to increase the use of contraception with a focus on migrant women.

6.2 ACCESS

A lower proportion of migrant participants in Study I had received contraceptive counseling earlier in life compared with non-migrants and second-generation migrant participants. This is similar to other research which state that migrants can have difficulties accessing family planning services (47, 55, 57). The informants in Study III shared views on different barriers for accessing counselling. Drop-in visits could be stressful and perceived as a barrier to comprehensive counseling. It was shared that the internet could then be an alternative for information, which also recent research has suggested by providing an internet educational video on different contraceptive methods for young women. However, the access to a method afterwards has to be ensured (78). The structured contraceptive counseling in Study II can

facilitate stressful encounters by the intervention material which has been proved to be time-neutral compared with routine counseling (79).

Other barriers to accessing contraceptive counseling and use, and shared by the participants in Study III, were language barriers, also cited in literature (80, 81). By the use of audiovisual materials in Study II, we tried to facilitate contraceptive counseling despite participants' different native languages. This was also shared during the interviews in Study III that pictures and videos can facilitate contraceptive counseling. Another barrier to access counseling can be the need for an interpreter which is not always possible during drop-in visits.

Our studies were conducted in real-life settings which means very few same-day LARC insertions were performed. Previous studies have reported an increased LARC uptake when barriers to access were removed and same-day insertions tried to be provided (35, 82, 83). Reducing barriers to access with for example same-day insertions, can be a way to increase contraceptive use, however it may be even more important for the HCP to ensure informed decision-making to avoid coercion, which some patients may experience (84). As important as same-day insertions of LARCs to increase access to contraception, is also the access to remove a LARC method when desired. Worldwide it is sometimes easier to access insertion of a subdermal implant than to remove it. Therefore, a new hand-held device for removing implants more easily is under development (85). In addition to increasing access to contraception by removing barriers to insertions and removals of LARCs, some women can also need help to find an invisible contraceptive method, which was shared in Study III.

Cost of contraceptive methods may also be a barrier to access. By reducing the cost, an increased uptake of LARCs has been shown in international studies (86, 87). However, in Study I cost was not stated as an important factor when choosing a contraceptive method. This despite the study being conducted in a real-life setting i.e. the participants had to pay for their contraception according to praxis. Our findings are in line with other Swedish research which has stated that no participants reported cost as a factor for not using a contraceptive method (24). However, there may be a reporting bias included, where participants do not want to share financial issues. We found that a significantly higher proportion of migrants in Study I, had used, and were also planning to use, a copper IUD which is free of charge and we can speculate whether this is due to the no cost aspect. The higher copper IUD use among migrants could also be due to the wish for a remaining regular bleeding. However, in Study I the migrants stated to the lowest proportion that regular bleeding was an important factor for choosing a contraception, compared with non-migrants and second-generation migrants, suggesting the regular bleeding aspect was not as important. In Study II, there were a higher proportion of migrants stated that the cost impacted their contraceptive choice. This was not significant but may have been if the sample size had been larger. To sum up, we believe financial issues can impact contraceptive choice but be sensitive to discuss.

6.3 KNOWLEDGE

“The keyword is good information” Informant 1, in Study III

The migrant participants in Study I stated a lower experience of sexuality education but also a lower knowledge for choosing a contraceptive method post-abortion compared with the non-migrant and second-generation migrant participants. Our findings are in line with existing literature where a barrier for contraceptive use among migrants is inadequate knowledge of contraception (55, 57). The majority of the participants had lived in Sweden for many years and did not use interpreters during the encounter. Neither were the translated study documents frequently used. Thus, the functional health literacy i.e. the ability to read information and instructions about health, may not have been so pronounced (88). However, the participants' lower experiences of sexuality education and knowledge of choosing a method, may reflect a lower comprehensive health literacy i.e. the ability to access, understand, appraise and apply health information (88). In Study II, we aimed to reduce knowledge barriers by providing comprehensive information on different contraceptive methods focusing on their effectiveness similarly to previous research (26, 35). In Study II the structured contraceptive counseling was provided to all participants in the intervention group regardless of prior knowledge, this was to ensure that all participants received the same information. This is important since the literature has stated that HCPs tend to underestimate women's interest in receiving more information about contraception during counseling (89). Knowledge of contraception is up-to-date and steadily changing. Therefore, HCPs need to make efforts to stay updated themselves but also to update and increase patients' knowledge of methods. This is also in accordance with women's wishes, where almost a third of women seeking contraceptive counseling reported an interest in receiving information on new products (89).

6.4 NORMS/TABOOS

Negative norms, i.e. taboos, can influence contraceptive use which the migrants in Study III stated and which is also reported previously (90). The taboos may influence both males and females. However, the male partner's influence on the woman's contraceptive use was shared, where the male partner had decided about the couple's contraceptive use, which is also consistent with literature (80, 91). Most of the results from Study III can be applied not only to foreign-born migrants but also to non-migrants, however the prohibition of premarital sex may be more common among foreign-born migrants compared to non-migrants in Sweden (41).

6.5 CULTURE AND RELIGION

The Migrant World Value Survey (MWVS) shows that the importance of a religion decreases for migrants living in Sweden, compared with their fellow citizens (41). This may be the case for the participants in Study I and Study II, where the religion did not seem to interfere with contraceptive use. On the other hand, migrants in Study III stated inconsistent views of whether religion affected contraceptive use. Contrary to the statement in Study III that pious women may not use contraception to not interfere with God's will, earlier research has concluded that religion can be a strong imperative for pious Muslim women to use contraception (67). However, religious rituals may affect contraceptive use because frequent bleeding due to contraceptive use can prevent Muslim women from praying, Ramadan or the pilgrimage (58, 91). Therefore, it may be important for HCPs to explore and acquire knowledge of a patient's culture and religion in order to facilitate the contraceptive counseling encounter with migrants, which has also been stated in literature (92).

Myths and misconceptions can also influence contraceptive use, and in Study III it was shared the importance of HCPs being aware of them. Bleeding issues were frequently raised in Study III. Some had concerns about amenorrhea due to the contraceptive method, where HCPs and family had different opinions on how to react to it, leading to difficulties of whom to trust. In Study I, a lower proportion of migrants and second-generation migrants mentioned amenorrhea as an important factor when choosing contraception compared with non-migrants. This may be associated to the more frequent use of copper IUD among migrants seen in Study I, since a copper IUD remains the menstrual bleeding. In Study II the key questions included questions about bleeding, if the participant had experienced heavy menstrual bleeding or painful bleeding. These questions are important especially if a copper IUD will be chosen, since it can increase both the menstrual bleeding and the pain (93). In addition to the key questions, a question about how important a monthly bleeding is can further guide the HCP in the counseling for migrants and stated in previous research (92). The misconception and fear that contraception can affect one's fertility later in life, was shared in Study III and congruent with literature where women's pressure to conceive has been stated (90). As a way to increase contraceptive use among migrants, HCPs need to address myths and misconceptions during the encounter.

6.6 IMPROVED QUALITY OF CONTRACEPTIVE COUNSELING

The overall aim with Study II was to provide quality in contraceptive counseling based on person-centered care, also reflected in the theoretical framework for this thesis (64). The first stage in the counseling process is to assess needs and preferences and to use a patient-centered approach. The importance of providing understandable and evidence-based counseling with respect and free from coercion, built on a confidential decision-making process, defines high-quality counseling (94).

In Study II, the four key questions were used to make the participant reflect over her own needs and preferences regarding a method, as stated in the first stage of the theoretical framework. In this framework patient-centered care is described as a core dimension of quality. However, we prefer to use the term person-centered care instead, since the goal of this latter term has been described as a meaningful life while the goal for patient-centered care is a functional life (37). We believe SRHR issues, including contraception, influences a person's whole life.

The second stage in the counseling process is shared decision-making support. The intervention material in Study II aimed to provide a neutral, evidence-based, comprehensive, but also detailed counseling on contraceptive methods for decision-making support, as stated in the second stage of the theoretical framework. Further, we aimed to provide easily understandable information for all participants, by using audiovisual materials such as the video, the effectiveness chart and the box with models since it likely assists the shared decision-making process (95). By using different formats of materials in contraceptive counseling may also be an advantage for other groups susceptible to unintended pregnancy such as youth, migrants and women with neuropsychiatric disorders. We have adapted the second stage of the framework by not only addressing side-effects of contraceptive methods, but also adding health benefits of different methods. This is because it has been shown that young women may choose a contraceptive method not only for pregnancy prevention but also for positive health benefits such as to reduce acne or menstrual pain (96). In the video but also in the key questions in Study II, we addressed some health benefits with different methods.

The third stage of the framework emphasize the patient's informed decision-making in the counseling, free from coercion, which was also our aim in Study II. Since the participants in Study II had to go to the pharmacy to collect the prescribed contraceptive method or come back another day to have a LARC method inserted, and thus had the time to reflect upon the chosen method, we believe the coercion was minimized.

In Study II we aimed to provide the relationship building elements that are essential to provide a good quality in contraceptive counseling and stated in the theoretical framework. Privacy, confidentiality and non-discrimination are essential during the healthcare encounter and regulated in Swedish laws (97, 98). However, the migrant participants in Study III sometimes shared they had a fear that some HCPs may have judgmental attitudes or not keeping the secrecy and confidentiality. Therefore, it is crucial to ensure and communicate with every patient these legal rights during the encounter. Further, to ensure the participant's respect and trust during the counseling as stated in the framework, we used open-ended key questions in Study II and HCPs acted upon the participant's responses.

6.7 METHODOLOGICAL CONSIDERATIONS

In this thesis we have used both quantitative and qualitative methods to examine and explore our aim from different angles. To combine these methods gave us a broader view and allowed the participants' voices to be heard. There are strengths and limitations in all research methods and in the following section I will discuss methodological considerations in relation to our research trials.

6.7.1 Study I (Paper I)

6.7.1.1 Design

We did a cross-sectional study, an observational and descriptive study which analyzes and measures the outcomes at one single timepoint (99). In this study we have presented the prevalence of contraceptive use and contraceptive methods at different timepoints. An HCP who is aware of the lower prevalence of contraceptive use among migrants may make more efforts to provide a qualitative comprehensive contraceptive counseling.

There are limitations with cross-sectional studies which needs to be taken into account. The association between a predictor and an outcome can be due to something else by for example confounders (99). A confounder, a variable associated with the predictor and also a cause of the outcome, can influence the outcome. One way to cope with confounders is to make statistical adjustments such as stratification or multivariate analyses (99). However, due to the small number of participants in the different groups within the study, we could not make stratifications of sociodemographic characteristics or multivariate analyses. Confounding for the relationship between migrant status and planned LARC use has not been explored in our study. We could have completed a post hoc analysis, for example a Bonferroni Procedure, to assure this association. However, when a Bonferroni Procedure corrects type I errors (false positive significance) it sometimes leads to an increased risk for type II errors (false negative significance), leading to an overcorrection of type I errors (100).

6.7.1.2 Recruitment and data collection

The major strength with this study was the intention to include *all* patients seeking abortion care, regardless of their sociodemographics, ethnicity or possible language barrier. Prior to the start of the study, we emphasized the inclusion criteria for the HCPs at the clinics, and also translated the study information into seven languages. Despite this, the HCPs reported in the end of the study that they had hardly needed to use the translated information. We had aimed to recruit 1300 participants but only got 637. During the study period, HCPs at the ACs had a high workload which may have influenced the lower recruitment. Additionally, one AC in an area with a high proportion of migrants closed down before the study started. The other clinics could not compensate their number of participants due to their own high workload, and therefore we had difficulties to reach the intended sample size. Further, the HCPs at the clinics mentioned that migrants not speaking Swedish may have been asked to participate to a lower extent due to language barriers that may have made the encounter

longer. Hence, it might have been more migrant participants lost or who declined participation, and we can speculate if they might have used contraception to a lower rate than the participants in the study. Therefore, the “true” contraceptive use may have been lower than presented. Some of the variables may have been significant if we had reached the intended sample size.

At the end of the abortion visit, the HCP asked the patient to participate in the study. Having the same HCP during the study as in the clinical visit, may be a strength if the patient felt comfortable with the HCP. On the contrary, the patient may have had difficulties in declining participation to the HCP who had recently provided care. The participants may also have experienced difficulties in responding truthfully to the questions in the questionnaire in order to please the HCP. Examples of difficult questions to respond to, might be asking the participant if she was planning to use a contraceptive method after the abortion or if she had sufficient knowledge to choose a contraceptive method. However, we found differences between the participants and therefore we assume truthful responses. Further, the use of interpreters may have impacted the participants’ responses, however only 13 interpreters were used.

The participants in this study could agree to be contacted within one year following their inclusion. Just over half of the participants accepted, which resulted in the decision to not proceed with a follow-up questionnaire in order to the big loss this would have meant. The big loss would have been due to both the high declined rate but also since we know that there may be a loss to follow-up of approximately 20% for participants seeking medical abortion which has earlier been stated in literature (101).

6.7.1.3 Generalizability/External validity

Some limitations within this study may have violated the generalizability of the study. The ACs in this study accounted for 55% of all abortions in the Stockholm region, hence it was not a population-based study. On the other hand, patients can have abortion care at all ACs in the Stockholm region regardless of one’s residential address which strengthen the generalizability.

Stratifications of sociodemographic characteristics may have increased the study’s generalizability to other migrant groups. Also, the group second-generation migrant was quite similar to non-migrants in terms of age, parity and likelihood of having received sexuality education. If we had combined these two groups, we may have had sufficient power for multivariate analyses which may have increased the generalizability. The external validity may also have been strengthened by combining non-migrants and second-generation migrants since the definition of the latter differs among countries and hence can be difficult to interpret (102).

6.7.2 Study II (Paper II & III)

6.7.2.1 Study design

HCPs may have different skills in providing contraceptive counseling, which may affect their patients' contraceptive uptake rate. If clinics, constituted of only HCPs whose patients usually present a high LARC uptake rate after counseling, had been randomized to intervention group in the LOWE trial, without taken the clustering into account, our findings may have been false positive. Meaning our findings may have been based on the HCPs skills rather than our intervention. Therefore, we decided to use this cluster randomized trial design.

Drawbacks with this design are complicated sample size estimations and data analyses therefore, we received assistance from professional statisticians (99). Further, if we had used an individually randomized controlled trial design instead, where each participant was randomized to intervention or control group, there would have been the risk of spillover effects. We may not have been able to control if HCPs actually gave contraceptive counseling according to our intervention (for those randomized to intervention group) or according to their standard praxis (for those randomized to control group).

We emphasized that the HCPs at the different clinics should not talk to each other about the LOWE trial in order to avoid spillover effects. However, we cannot assure this have not happened. We informed the control groups or in public of the overall aim of the study, to study the contraceptive uptake after structured contraceptive counseling. The primary outcome to study LARC uptake was only presented for the intervention clinics to avoid bias of the outcomes and to avoid influencing the control group. The HCPs in our trial received a 3-hour training at the research center which was shorter than in other research (35, 83, 86).

6.7.2.2 Recruitment

The participating clinics were asked to recruit 50 participants per clinic. However, some clinics had difficulties in recruiting leading to a lower number of participants and therefore, some other clinics were asked to increase recruitment up to 60, to remain the sample size.

We decided not to give financial compensation to the participants in order to not interfere with their true interest in participating in the research. Also, the participants received their requested counseling or a more comprehensive one. However, the financial compensation to the clinics (2 Euros/participant) was due to the fact that participation in the trial may be more time consuming and claimed more engagement from the HCPs.

The HCPs were informed to include *all* patients fulfilling the inclusion criteria. However, we found a lower proportion of foreign-born participants (13.1%) in the trial compared to official statistics (32.3%) in the Stockholm area (103). This may be explained by different reasons such as the material only was available in Swedish and English, however the use of an interpreter was encouraged, if needed. Despite an interpreter was encouraged, we know from literature that using an interpreter may take additional time (104) and hence may act limiting in research trials. Another reason may be that the contraceptive counseling encounters were

mostly performed during booked appointments at the AC and YC, while during drop-in services at the MHC. These drop-in visits may also affect the inclusion of foreign-born migrants, since interpreters may be difficult to arrange immediately. The box with contraceptive models was not dependent on languages. The effectiveness chart could also quite easily be understood regardless of your native language because of the pictures of different contraceptive methods and the numbers describing the effectiveness of the different methods. The four key questions were asked by the HCP or translated by an interpreter, if needed. The educational video was not dubbed and only had subtitles in Swedish and English. This was a limitation in our trial. However, future plans include translation of the video into more languages. Most of the participants in our trial had been in Sweden for 10-12 years and spoke and understood Swedish, and very few participants in our trial used an interpreter despite our strong recommendation to use one if needed.

Most of the patients were recruited by the HCPs working at the clinics. However, at some MHCs, a team member from the research team assisted in the recruitment, i.e. checked the eligibility criteria, assisted in the informed consent procedure, instructed how to fill in the first questionnaire and to watch the video. This may have been a limitation with more patients declining or a strength when the patient may not have felt obliged to accept participation to please the HCP. Masking of the allocation group for the HCPs was not feasible, therefore selection bias may have occurred despite the aim to include all patients fulfilling the inclusion criteria.

Clinics were eligible to participate in the LOWE trial regardless of their baseline LARC prescription, which is the opposite of earlier research where only clinics with a LARC prescription of less than 20% were eligible (35). Despite this we found significant differences in LARC uptake between the intervention and control group. Further, in our trial all patients were eligible regardless of whether they were seeking contraception for the first time, wanted a renewed prescription or wanted to switch method. This is also the opposite of a study which only included patients who were not currently using a contraceptive method or were interested in starting a new reversible method (105). Further, in that study, participants were provided with a LARC method at no cost which may have influenced the LARC uptake (86). We performed a trial in a real-life-setting meaning participants paid for their chosen contraceptive method according to praxis. Further, in our trial we found significant differences in LARC uptake between the intervention and control group, regardless of whether the participants wanted a renewed prescription or not.

6.7.2.3 Randomization

We stratified YCs and MHCs by LARC prescription at baseline, and migrant population within the clinics' catchment area. This was to reduce clinics with a high LARC baseline prescription or high migrant population being randomized to the same allocation group. These stratifications may have increased the LOWE trials external validity.

6.7.2.4 *Intention-to-treat vs per-protocol analysis*

The ITT approach may underestimate the intervention effect since participants may have been “crossovers” to the control group, and have not received the intervention they were supposed to (99). We did not perform a per-protocol (PP) analysis. If the PP analysis and the ITT analysis should differ then the ITT usually predominates for estimates of efficacy since it only has bias in the conservative direction (favouring the null hypothesis) in contrast to PP analysis (99).

6.7.2.5 *Follow-up*

At the start we only collected the participants’ e-mail addresses. However, we added the possibility to also respond with one’s telephone number in order for us to be able to reach the participants at follow-up. Some participants changed e-mail addresses during the trial and others preferred to respond to questions via telephone. By performing several attempts to collect follow-up questionnaires by both e-mail and telephone, we could increase the follow-up rate. Despite our efforts, we had a 3-month loss to follow-up rate, missing data, withdrawal and exclusion rate of participants at 21%, similar to other research among young participants and post-abortion (101, 106). On the contrary, we had a minimal loss to follow-up on pregnancy rates at 3 and 12 months, due to our additional collection of data from the participants’ medical records.

We found a significant lower pregnancy rate in the intervention compared with the control group, at 12-month follow-up post-abortion in contrast to earlier research (35). However, our findings did not show significant differences for pregnancy rates at 12-month follow-up among intervention and control group at YCs and MHCs. This may be due to a too short follow-up period.

6.7.2.6 *The intervention*

Major strengths in the LOWE trial are the large number of participants, including young and nulliparous, the different clinic types, and the cluster RCT design and the follow-up period. This may strengthen the external validity in other settings. The external validity is also dependent on the provision of all four parts which constitute the intervention hence, we cannot assure the validity if only some parts of the intervention are provided. Our intervention material emphasized the effectiveness of different contraceptive methods as this has been shown to be important for contraceptive use (24). Our intervention is based on providing contraceptive counseling by using all four parts of the intervention material together. The intervention material has been proved to increase LARC uptake in other trials but not been used all together. In another cluster RCT they used an educational video for providers and one video for patients showing LARC experiences. Additionally, an effectiveness chart and open-ended questions on pregnancy intentions were presented for providers (35). The key questions in the LOWE trial are based on earlier research. The first two key questions were based on the question Do you want to have children? used in reproductive life plan-based information in Sweden (107). The other key questions in the

LOWE material included menstrual bleeding and pain, which has been shown to affect contraceptive uptake (96). To use contraceptive models in counseling has been stated in another trial (86) and has been shown to decrease fear and imaginations about the method's size (108).

6.7.2.7 Analyses

Cluster randomized trials are the gold standard for some interventions, however they are more complex to perform than RCTs, because of the required increased sample size and the analysis process (109). We assumed an intraclass correlation coefficient of 0.05, however it was estimated to 0.01. A low ICC value of 0.01, means that values within groups are independent without any clusters. The interpretation for this in our trial was that HCPs within each clinic were not similar, meaning that no specific clinic had an extremely high proportion of HCPs providing LARCs which may have affected the findings.

We adjusted our logistic mixed effects model for covariates known to affect contraceptive choice such as age, highest completed educational level, intended LARC use, previous pregnancy with or without abortion, and clinic type. We adjusted for the same covariates when analyzing LARC choice, initiation and use by group allocation and the three participant groups.

6.7.3 Study III (Paper IV)

The major strength with this study is our intention to increase knowledge of migrant women's contraceptive counseling and use. This, since migrant women often are excluded from research and their voices seldom heard when it comes to SRHR. Other strengths are the informants' different ages and reproductive histories as well as their different countries of birth.

6.7.3.1 Trustworthiness

The trustworthiness of a qualitative study can be assessed by Lincoln and Guba's four evaluative criteria; credibility, transferability, dependability and confirmability. To establish these four criteria, different techniques can be used as described below (110).

Credibility is defined as the truth in the findings. Prolonged engagement and peer debriefing are techniques to establish credibility. In our study the research team has a prolonged engagement in conducting both quantitative and qualitative research in SRHR worldwide, but also among women in Sweden in general and migrants in particular. All the researchers were involved from the start by designing the study, through the data collection, analyses and the manuscript writing. By presenting preliminary findings at research seminars within the department, peer debriefing has been established.

Transferability is defined as whether the findings could be generalized to other contexts and the dependability if the findings could be repeated. By describing phenomenon and methods in detail we have tried to present thick descriptions, which is a technique to strengthen the transferability and dependability of the study. However, all informants had been in Sweden for many years and spoke Swedish, hence this may have affected the transferability of the study.

Confirmability is defined as the findings' neutrality i.e. that the findings are accurate to the informant's responses. By the notes taken after each interview, the re-checking of the data among the research team, and by presenting a variety of quotes from the informants, we have tried to assure confirmability of the study. During the whole study, I have reflected on my own role in research, a reflexivity technique. I believe my profession as an RNM helped in both the recruitment as well as in the conducting phase of the study by the informants feeling they could discuss their perceptions and experiences regarding SRHR with me. Since I have worked for a long time as an RNM providing contraceptive counseling I am used to meeting patients and talking about SRHR. Therefore, I could concentrate on the interview aspect such as to asking more open-ended questions and waiting and listening actively to the responses. However, to be an interviewer is not the same as working as an RNM in the clinic, giving counseling during a limited time period. I have learnt a lot by listening to informants without interrupting which was a challenge during some of the interviews.

Triangulation is a technique for establishing both credibility and confirmability. In this study we have only interviewed foreign-born migrants, however interviewing non-migrants was included in the ethical approval and may be performed later. It would have been interesting to also explore non-migrants' views on contraceptive counseling and use, to examine consistencies. By interviewing different participant groups, a triangulation of data sources could have been established. In this study we decided to perform individual interviews due to the sensitivity of the topic but also due to the Covid-19 pandemic. However, it may have been interesting to perform focus group interviews with the foreign-born migrant participants. Focus group discussions may have brought additional insights into how foreign-born migrants collectively perceive and experience contraceptive counseling and use. By using focus group discussions, the technique with methods triangulation would then have been established.

6.7.3.2 Data collection

An important strategy during the interviews was to create a friendly, open climate, especially at the beginning of the interviews. The participant was informed that specific questions raised during the interviews such as the function and disadvantages of each contraceptive method, could be discussed after the interview simply not to disturb the interview process with contraceptive guidance. The researcher aimed to ask open-ended questions and listen to the narratives but also to be aware of the non-verbal communication such as hesitation or emphasis in different questions. The overall aim was to get the informant to talk freely without too much interruption. Therefore, the first question was very broad to "start" the

informant to expressing herself and also to share not so sensitive information such as sociodemographic characteristics. The researcher also tried to communicate without too much interruption with words but instead by nodding and humming. One of the last questions in the topic guide was the informant's feeling at the end of the interview. Feelings of uncertainty of revealing too much personal information and the secretly handling of the data were raised. Also, feelings of sadness due to reflecting over one's reproductive experiences. On the contrary, many of the informants were grateful for the reflection this interview had given them. The vast majority of feelings were described as good and satisfying. Further, wishes and hopes that these research findings would be spread and may help other foreign-born migrants were also shared.

7 CONCLUSIONS

The overarching aim of this thesis was to provide evidence to ensure equal access and quality of contraceptive counseling and use with a focus on migrant women. We have accomplished this by our four studies with the following conclusions.

Our findings demonstrate that migrant and second-generation migrant participants had a significantly lower use of contraception ever-in life compared with non-migrant participants. Migrants reported a lower prior contraceptive counseling and also a less sufficient knowledge to choose a contraceptive method post-abortion compared with second-generation migrants and non-migrants. Additionally, we found differences between the three groups in previously and planned use of contraceptive methods, where more migrants and second-generation migrants planned to use a LARC method compared with non-migrants (Study I).

By providing structured contraceptive counseling with a specially designed material, we found a higher LARC uptake and fewer pregnancies 12 months post-abortion compared with routine counseling. Additionally, when controlled for migration background, our results show a higher LARC uptake but also use at 12 months follow-up, compared with routine counseling. Further, all participants were satisfied with the specially designed material. However, more migrants and second-generation migrants found the effectiveness chart to be supportive in contraceptive choice compared with non-migrants (Study II).

The foreign-born migrants shared a struggle to achieve increased reproductive autonomy. Taboos such as premarital sex and sex at a young age, were hindering contraceptive counseling and use. Therefore, the migrants had developed their own strategies to be able to use contraception. They also expressed specific needs from the HCP in the contraceptive counseling, such as to address myths and misconceptions and to receive a stress-free counseling without judgmental attitudes. Further, it was shared that audiovisual material can facilitate if not receiving counseling in one's native language (Study III).

8 POINTS OF PERSPECTIVE

In this thesis, we have identified factors to improve access and quality of contraceptive counseling and use with a focus on migrant women. This is to accelerate progress towards Agenda 2030. However, we would like to address actions for policy and practice and also address research needed for the future.

8.1 FOR POLICY AND PRACTICE

- Increase evidence based information on contraceptive counseling to HCPs with a focus on migrants.
- Implement the structured contraceptive counseling in clinical practice and also in more languages.
- Implement and ensure different ways of accessing contraceptive counseling. However, it is important to always ensure a person-centered high-quality contraceptive counseling. This, since medical internet sites prescribing contraception are growing rapidly. Also, drop-in visits seem to increase and hence, booked appointments decrease.
- Increase information to migrants on where to find contraceptive counseling. The information should be presented at different places within the community where many migrants stay and should also be translated and provided with different types of audiovisual materials.
- Increase evidenced based information on contraceptive methods to HCPs, patients and the society, including youth, parents and partners. When implementing the new sexuality education in Swedish schools in July 2022, ensure evidence based information on contraception for all students. Further, increase the information with audiovisual materials.
- Implement contraceptive methods free of charge for all, since it has been shown to be cost-effective. Despite not all women being in need of free methods, this would act in the same way as child allowance, the Swedish financial support to parents who live and have children in Sweden. Preferably also implement contraceptive methods for free globally.
- As an HCP, always keep in mind contraceptive issues when meeting persons of reproductive ages. Implement RNMs who can address SRHR issues at the health screening services for newly arrived people in Sweden.
- Collaborate with religious leaders to increase access to contraception.
- Facilitate contraceptive uptake by providing progestin only pills without prescription at pharmacies. Also, include progestins only pill blisters in the package for post-coital anticonception (morning-after-pill).

8.2 FUTURE RESEARCH

- Conduct qualitative research on migrant women in Sweden seeking abortion care to explore their views on pregnancy, abortion and contraception.
- Further examine the structured contraceptive counseling with a follow-up period longer than 12 months, and how it influences LARC uptake and use, as well as pregnancies.
- Further examine how the structured contraceptive counseling can be provided in different ways. For example by using more animated materials, providing the counseling in a group instead of individually or providing the counseling as telemedicine.
- Explore by qualitative research HCPs' and participants' experiences of structured contraceptive counseling to get a deeper understanding on the intervention and decision-making process to increase the quality of the counseling even more.
- Conduct implementation research on structured contraceptive counseling in Sweden but also internationally.

- Develop new contraceptive methods to facilitate uptake and satisfaction. New methods which can reduce the VTE risk and side-effects but also improve health benefits. New contraceptive methods which can combine termination if a pregnancy has occurred with pregnancy prevention. Additionally, develop new male contraceptive methods to facilitate uptake for the individual and/or the couple but also to improve gender equality.
- Develop new devices to facilitate insertion and removal of LARC methods and hereby ease access to these methods. Further, more research is needed to reduce pain at LARC insertion and removal.

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1. Wonder S. You are the sunshine of my life. 1972

2. Berg J. Utan dina andetag. 1997

3. Legend J. All of me. 2013

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