



UPPSALA  
UNIVERSITET

*Digital Comprehensive Summaries of Uppsala Dissertations  
from the Faculty of Medicine 1163*

# Simplifying Reproductive Health in Low-Resource Settings

*Access to medical abortion and contraceptive  
choice, the importance of gendered structures in  
Rajasthan*

MANDIRA PAUL



ACTA  
UNIVERSITATIS  
UPSALIENSIS  
UPPSALA  
2015

ISSN 1651-6206  
ISBN 978-91-554-9414-8  
urn:nbn:se:uu:diva-267167

Dissertation presented at Uppsala University to be publicly examined in Gustavianum, Akademigatan 3, Uppsala, Monday, 11 January 2016 at 13:00 for the degree of Doctor of Philosophy (Faculty of Medicine). The examination will be conducted in English. Faculty examiner: Professor Johanne Sundby (University of Oslo).

### **Abstract**

Paul, M. 2015. Simplifying Reproductive Health in Low-Resource Settings. Access to medical abortion and contraceptive choice, the importance of gendered structures in Rajasthan. *Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine* 1163. 144 pp. Uppsala: Acta Universitatis Upsaliensis. ISBN 978-91-554-9414-8.

India introduced family planning in the '50s, legalized abortion in the '70s, and accomplished a remarkable drop in maternal mortality and fertility since 1990. Nevertheless, abortions account for a large proportion of maternal deaths, and sterilization is the most frequently used contraception. This thesis aims to identify the means to simplify and increase access to reproductive health in low-resource settings, focusing on abortion and contraception in Rajasthan.

A randomized controlled trial compared simplified follow-up, where women assess their abortion outcome at home after early medical abortion, with in-clinic follow-up. Additionally, contraceptive use was compared between study groups post-abortion. In order to explore young women's opportunities to access reproductive health services in the area, we conducted in-depth interviews with recently-married women.

Women in the home-assessment group preferred home-assessment in the future to a greater extent than the women in the clinic follow-up group, who preferred in-clinic follow-up. Complete abortions were reported in 95% of women in the 'home-assessment group' and 93% in the 'in-clinic group', suggesting that efficacy of simplified follow-up is non-inferior to in-clinic follow-up. A majority (81%) of women carried out the pregnancy test and found it easy to use. Women (96%) were satisfied with their abortion. There were no differences in contraceptive use between study groups at three months; however, women in the 'in-clinic group' were most likely to initiate contraception at two weeks. A majority of women preferred the three-month injection, while only 4% preferred sterilization. The recently-married women considered reversible contraception to be unfeasible due to misconceptions and taboos, yet women wanted effective contraception because their current use of traditional methods resulted in unintended pregnancies. Abortions were common, and were procured from private or informal providers.

Allowing women to take an active role in reproductive health services can enable simplification of, and access to, reproductive services in low-resource settings as well as in other settings. Simplifying medical abortion, providing contraception 'intra-abortion', and offering a context-appropriate and effective means of contraception, creates a great potential to increase access to reproductive health services and can result in a more equal society where women, and men, can attain their sexual and reproductive rights.

*Keywords:* Medical abortion, Contraception, Access, Simplified, Gender, Sexual and reproductive health and rights, India

*Mandira Paul, Department of Women's and Children's Health, International Maternal and Child Health (IMCH), Akademiska sjukhuset, Uppsala University, SE-75185 Uppsala, Sweden.*

© Mandira Paul 2015

ISSN 1651-6206

ISBN 978-91-554-9414-8

urn:nbn:se:uu:diva-267167 (<http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-267167>)

*For 'Thama'*

Women in our country are brought up to think that she is well only with her husband or on the funeral pyre. I would far rather see India's women trained to wield arms than that they should feel helpless.

Suppression of woman is a denial of Ahimsa [do no harm].

- M.K. Gandhi

# List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals.

- I Paul, M., Iyengar, K., Essén B., Gemzell-Danielsson K., Iyengar S., Bring, J., Soni, S., Klingberg-Allvin, M. (2015) Acceptability of Home-Assessment Post Medical Abortion and Medical Abortion in a Low-resource setting in Rajasthan, India. Secondary Outcome Analysis of a Non-inferiority Randomized Controlled Trial. *Plos One*, 2015; **10**(9): e0133354.
- II Iyengar, K., Paul, M., Iyengar S., Klingberg-Allvin, M., Essén B., Bring, J., Soni, S., Gemzell-Danielsson K. (2015) Self-assessment of the outcome of early medical abortion versus clinic follow-up in India: a randomised, controlled, non-inferiority trial. *Lancet Global Health*, 2015; **3**: 9:e537-545.
- III Paul, M., Iyengar S., Essén B., Gemzell-Danielsson K., Iyengar, K., Bring, J., Klingberg-Allvin, M. (2015) Does mode of follow-up influence contraceptive use after medical abortion in a low-resource setting? Secondary Outcome Analysis of a Non-inferiority Randomized Controlled Trial. *Re-submitted*.
- IV Paul, M., Essén B., Sariola, S., Soni, S., Iyengar S., Klingberg-Allvin, M. (2015) Negotiating collective and individual agency – a qualitative study of young women’s reproductive health in rural India. *Qualitative Health Research*, 2015; Nov 3:pii: 1049732315613038 [Epub ahead of print]

Reprints are made with permission from the respective publishers.

## List of Related Papers

The papers listed below are not empirical research papers and do not make direct contribution to the thesis per se, however, they are published within the same project and are related and relevant to the thesis.

- V Paul, M., Iyengar, K., Iyengar S., Gemzell-Danielsson K., Essén B., Klingberg-Allvin, M. Simplified follow-up after medical abortion using a low-sensitivity urinary pregnancy test and a pictorial instruction sheet in Rajasthan, India – Study protocol and intervention adaptation of a randomised control trial. *BMC Women's Health*, 2014; **14**: 98.
- VI Paul, M., Gemzell-Danielsson K., Essén B., Klingberg-Allvin, M. The importance of considering the evidence in the MTP 2014 Amendment debate in India. Unsubstantiated arguments should not impede improved access to safe abortion. *Global Health Action*, 2015; **8**: 27512.

# Contents

Glossary of Terms and Concepts .....	13
Collaborating Partners and Funding .....	14
Preface .....	15
Introduction .....	17
Sexual and Reproductive Health and Rights .....	18
Gender in Health .....	19
Maternal Mortality and Morbidity .....	22
Adolescents and Young People .....	23
Unsafe Abortion – The Preventable Pandemic.....	25
Comprehensive Abortion Care .....	26
Simplified Medical Abortion .....	28
Contraception and Family Planning .....	30
Reproductive Health and Abortion in India.....	33
India’s Health System Response to Maternal Mortality.....	33
The Legal Framework of Abortion in India .....	35
Access to Safe Abortion in India .....	36
Family Planning in India .....	37
Conceptual Framework.....	39
Access – Expanding the 5 A’s Framework.....	39
Rationale for the Thesis .....	43
Aim .....	44
Material and Methods .....	45
Study Setting .....	46
Rajasthan – “the Land of Kings” .....	46
Udaipur City and Surroundings .....	48
Understanding the Context (Reflexivity).....	48
Randomised Controlled Trial (Study I) .....	54
Study Rationale and Design .....	54
The Intervention .....	54
Intervention Adaptation and Pilot Testing of the Study Protocol .....	54
Eligibility Criteria.....	57

Study Sites .....	58
Data Collection and Study Protocol .....	58
Outcome Measures .....	62
Data Analysis .....	63
Cross-sectional Study (Study II) .....	63
Study Rationale .....	63
Study Design and Participants .....	63
Data Collection .....	64
Definitions .....	64
Outcome Measures .....	65
Data Analysis .....	65
Qualitative Study (Study III) .....	66
Audit Trail .....	66
Study Rationale .....	68
Study Participants .....	68
Study Procedure .....	68
Data Analysis .....	70
Conceptual Framework – A Summary: Agency .....	70
Ethical Considerations .....	72
Results .....	74
Is simplified follow-up after early medical abortion acceptable, feasible and effective in a low-resource primary health care setting? (Study I) .....	75
How does simplified follow-up post-medical abortion influence contraceptive use? (Study II) .....	79
What are the reproductive desires and choices among recently married women and men? How do they access reproductive health services to practice their sexual and reproductive rights in rural India? (Study III) .....	82
Discussion .....	87
Addressing the Research Gaps .....	87
Simplified Medical Abortion for All .....	87
Intra-abortion Contraception & Family Planning .....	90
Roadmap to Increased Access to Abortion – The Promise of Simplified Medical Abortion .....	94
A Matrix of Access .....	100
Methodological Considerations .....	106
Quantitative Studies .....	106
Methodological Strengths .....	106
Methodological Limitations .....	107
Qualitative Studies .....	109
Methodological Strengths .....	109
Methodological Limitations .....	110

Conclusion.....	112
Health System Implications .....	114
Institutions/Systems Level .....	114
Health Service Level .....	115
Community Level.....	116
Summary in Swedish/Sammanfattning på svenska.....	117
Summary in Hindi/हिंदी में सारांश .....	121
Summary in English.....	125
Acknowledgements.....	128
References .....	131
Appendix I.....	144
Vignettes Used in the Qualitative Interviews (Study III) .....	144

# Abbreviations

AOR	Adjusted Odds Ratio
ARTH	Action Research and Training for Health
ASHA	Accredited Social Health Activist
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
CI	Confidence Interval
CONSORT	CONsolidated Standards Of Reporting Trials
ES	Evaluable Subjects
FOGSI	The Federation of Obstetric & Gynaecological Societies of India
hCG	Human Chorionic Gonadotropin
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population Development
IDI	In-depth Interviews
INR	Indian Rupees
ITT	Intention To Treat
IUD	Intrauterine Device
LARC	Long-Acting Reversible Contraceptive
LMIC	Low- and Middle- Income Country
LNG-IUS	Levonorgestrel Intrauterine System
LSPT	Low-Sensitivity Pregnancy Test
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MTP	Medical Termination of Pregnancy
NFHS	National Family Health Survey
NGO	Non-governmental Organisation
NRHM	National Rural Health Mission
OBC	Other Backward Castes
OR	Odds Ratio
PC&PNDT	Pre-Conception and Pre-Natal Diagnostic Techniques
PDC	Partner Driven Cooperation
RCT	Randomised Controlled Trial
SC	Scheduled Caste
SDG	Sustainable Development Goals
SIDA	Swedish International Development Agency
SPSS	Statistical Package for the Social Sciences

SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
ST	Scheduled Tribe
STI	Sexually Transmitted Infection
SQL	Structured Query Language
TFR	Total Fertility Rate
UN	United Nations
USD	United States Dollar
VHW	Village Health Worker
WHO	World Health Organization



# Glossary of Terms and Concepts

**Agency** can be described as the capacity to exercise control of your own actions, to actively influence life-choices and the quality of one's life.

**Gender** refers to the socially constructed characteristics of women and men – such as norms, roles and relationships of and between groups of women and men (WHO definition).

**Gender equality** assumes to denote exact sameness between women and men and concerns absence of discrimination by stereotypes, gender roles and prejudices.

**Gender equity** acknowledges that there are differences between women and men and focuses on meeting women's and men's needs, whether similar or different.

**Millennium Development Goals** are eight time-bound quantified targets set out to address poverty in its many dimensions including improved health, education, and gender equality.

**Modern Contraceptive Methods** refers to evidence-based contraceptive methods including condom, oral pill, injectable, intrauterine device/system, implant, and sterilization (tubectomy/vasectomy).

**Sustainable Development Goals** are 17 goals with 169 targets that build on the millennium development goals and seek to realize human rights and result in sustainable wellbeing for all. The goals are constituted of three dimensions of sustainable development: the economic, social and environmental.

**Traditional Contraceptive Methods** refers to methods traditionally used to avoid contraception and may vary greatly depending on the setting, however, they commonly include withdrawal, periodic abstinence during fertile days, and in India, there are homeopathic contraceptives available, etc.

## Collaborating Partners and Funding

All studies in this thesis were carried out in collaboration between: Action Research and Training for Health (ARTH) Udaipur, India; Uppsala University; and Karolinska Institutet in Sweden. The collaboration was initially a partner-driven cooperation (PDC) funded by The Swedish International Development Cooperation Agency (SIDA) where we carried out research activities, advocacy-work and capacity building in parallel. ARTH has taken a leading role in the advocacy and training activities due to their longstanding work and good reputation within the field of abortion and contraception in India. ARTH was also central in the study conduct and had the overarching responsibility of the operational activities. The Swedish partners contributed with scientific expertise and technical support as well as the overarching responsibility for the research activities and support of the study implementation and conduct. The research activities continued beyond the PDC through the funding of the Swedish Research Council (grant#2011-3525 and VR-LINK #348.2011-7254) and findings were disseminated in both India and Sweden.

# Preface

Being a woman at the end of my 20s, still unmarried and childless made me interesting, however alien and somewhat difficult to relate to. What complicated the situation further was that I am Indian. Because having an Indian father makes you Indian, even though I was born and raised in Sweden with a Swedish mother. Conversely, I did not fulfil the requirements of an Indian woman in the context where I was. Most of the women of my age who I met were primarily mothers and wives. Education and career was of less relevance to them and few showed interest in that what I perceived as my personal strengths and achievements. It boiled down to one question: Why are you not married?

Growing up in Sweden with family in India gives this exclusive insight in the incredibly rich culture of India. It also gives you the opportunity to pick the best from two realities, and I believe I have. I remember accompanying my cousin to school in India when I was 13 years old, and I remember that when I came back to Sweden I would never again complain about homework or demanding assignments because they were nothing like the homework I had seen in India. During another visit when I was 18 years old, I was happy to hide behind my father as the issue of marriage was brought up, and he could explain to my relatives that I wanted to pursue a university degree and wait with marriage until I felt ready for it. Importantly, this dual-identity has given me the opportunity to understand and appreciate that I am born in a country where the opportunities are there for me to take, regardless of my gender, if I am ready to work hard for them to be mine. It has also given me the courage to be the voice that many cannot be, the voice of women's right, the voice of sexual and reproductive health and rights in general, and the voice of the right to abortion and contraception in particular.



# Introduction

The health of a nation is determined by the health of its girls and women. The International Conference on Population Development (ICPD) in 1994 recognized sexual and reproductive health for the first time and put maternal mortality on the map. In 1995, the Fourth World Conference on Women held in Beijing took it further and recognized women's health, including maternal health, as a human right. The Millennium Development Goals (MDG), comprised eight goals that were formulated as we entered the new millennium, and had a vision to improve the situation in low- and middle-income countries (LMIC), and make the world a more equitable place. Goal number five set out to decrease the global maternal mortality ratio (MMR) by 75% by the year 2015. However, due to the persisting high rates of maternal and child mortality in 2010, the United Nations (UN) called on the world to develop a Global Strategy for Women's and Children's Health [1]. The strategy sped up the decline in maternal mortality rates. Yet, looking in the rear mirror, only nine countries have succeeded in reaching MDG5, nevertheless, MMR has dropped by nearly 44% worldwide [2]. Some of the major contributors to this decrease include countries where the total fertility rate (TFR) has dropped significantly [3, 4]; skilled birth attendance has increased; more women accessed education and work, and where women's political participation increased; more children go to school; and fewer adolescent girls have babies. Unfortunately, we have seen little progress among the poorest women, particularly those residing in rural areas. In these settings, women's status, the number of maternal deaths and the frequency of child marriages have hardly seen any improvements at all, and more women suffer poverty compared with men. The systematic discrimination of women is still present in legal and policy documents and few data reveal the causes of maternal deaths. The lack of disaggregated, quality data makes it difficult to identify the most vulnerable and exposed groups [4]. The global society, led by the UN, agreed on a new agenda in September 2015, the sustainable development goals (SDG), setting a global sustainable agenda, rather than solely focusing on health in LMIC. The SDGs comprise 17 goals, with the overarching goal to contribute to sustainable wellbeing for all. The SDGs recognize education, gender equality, sustainable energy and nutrition, water and sanitation, and climate change adaptation and mitigation as important components of development. Additionally, the UN recently released the new, updated, Global Strategy for Women's, Children's and Adolescents' Health

with the intention to create a paradigm shift within a range of areas including the field of Sexual and Reproductive Health and Rights (SRHR). The strategy recognizes the importance of access to essential interventions and services including family planning, and the importance of overcoming structural determinants of health such as gender inequality [5, 6].

Effective contraception and safe abortion care are prerequisites for reproductive health, and hence comprise a human right. In the spirit of the SDGs, this thesis suggests a means of improving access to reproductive health services, focusing on comprehensive abortion care and contraception. Moreover, this thesis attempts to illuminate the gender power dynamics at the micro-level, and the gendered structures that influence the macro-levels and subsequently compromise women's ability to attain SRHR. This affects women's overall health and the health of their families. Enabling and simplifying effective, safe and acceptable reproductive health care alternatives suitable in a primary health care setting is crucial, especially to reach out to those women with a low socio-economic status and who are referred to as those who are the most vulnerable.

## Sexual and Reproductive Health and Rights

Reproductive freedom is critical to a whole range of issues. If we can't take charge of this most personal aspect of our lives, we can't take care of anything. It should not be seen as a privilege or as a benefit, but a fundamental human right. - Faye Wattleton (Planned Parenthood Federation America)

On this note, I would like to highlight the importance as well as the applicability of using SRHR as a platform for the discussion around and justification of access to abortion and contraceptive services.

The definition of reproductive health was adopted and expanded in the 1990s. Reproductive health was defined as the capability of having a satisfying and safe sex life, the capability to reproduce, and the freedom to decide if, when and how often to do so. To achieve this, women and men must have access to information, the opportunity to choose from the full spectrum of evidence-based modern contraceptives, and access to other legal methods for regulation of fertility, for example, abortion [7]. Importantly, enabling equitable sexual and reproductive health (SRH) services will improve the overall health of people. Currently, poor SRH outcomes represent one third of the global burden of disease for women aged 15-44 years, and by investing in childbirth and delivery, societies can quadruple their returns in terms of women's and children's lives saved, and stillbirths and disabilities reduced [5, 6].

The definition of sexual health does not have the same formal statute as reproductive health does. However, derived from the WHO's definition of

health, sexual health is suggested to include: the ability to enjoy mutually fulfilling sexual relationships; freedom from sexual abuse, coercion and harassment; safety from sexually transmitted infections (STI); and success in achieving or in preventing pregnancy [8]. The two definitions of sexual and reproductive health are often congregated into one concept where sex and reproduction becomes almost inseparable. However, it is important to remember that sex is not merely an act of reproduction but is also meant by nature to contribute to wellbeing and increasing the partner bond. Sexual health can therefore not be achieved only through family planning counselling and protection against STI [8]. Sexual rights are often overlooked in the health care setting due to their focus on the biological processes of reproduction, especially in settings where sexuality is taboo. The congregation of sexual rights and reproductive rights into one issue is convenient for decision-makers who can thereby get away with acknowledging reproductive health without addressing sexual health. This is one of several reasons why SRHR is one of the most controversial topics in the global context still today and is far from being endorsed and accepted by all leaders.

Failing to provide SRH services results in missed opportunities for economic growth determined by the stalled progress towards gender equality, drained household income and public budgets, poor health and educational outcomes resulting in lower productivity and labour force participation [9].

The legal aspect introduced in the concept of reproductive and sexual health entails the right of individuals to fulfil the state of complete health in terms of reproduction and sexuality. However, SRHR must not be separated or detached from the overarching concept of human rights. Sexual and reproductive health makes up an important part of human rights and should be appreciated as a means of focusing on women's health and attending to the needs of women in relation to reproduction [8]. The application of a rights-based approach to sexual and reproductive health is an excellent opportunity to mainstream gender equality. Without gender equality the true rule of law or a fully equal world is impossible. Hence, ensuring human rights builds a truer and fuller society that is beneficial for all; for women as well as men.

## Gender in Health

Gender has a direct influence on an individual's access to health services, which is also governed social structures, hierarchies and power dynamics within communities, yet health systems often lack gender responsiveness in their service provision [5]. To give an example; policies often target women as a group, a group with special needs that deviate from the norm – the norm of being a man [10], and health systems often lack sex disaggregated data and gender analysis [5]. This paragraph relating to gender in health does not attempt to cover or summarize all aspects of gender; however, it does aim to

highlight the importance of gender in health, and its effect on access to health care, reproductive agency and SRHR. It is also a gentle reminder to the medical field to look beyond the biological categorisation determined by sex. For the purpose of this thesis, it is essential to understand the concepts concerned with gender and how they relate to health.

To understand our findings and how they relate to gender and implications for health, it is important to define and establish the use of fundamental gender theoretical concepts [11]. In biomedical research and public policy documents on gender and health the concept of gender is often simplified into two categories according to the well-established biological processes and classifications. By dichotomizing gender by sex, it is easier to have quantifiable outcomes, which are necessary to conduct quantifiable analysis and present results in numbers. This approach assumes that masculinity and femininity are natural opposites and it considers 'women' and 'men' as fixed categories [10]. However, instead of limiting ourselves to the categorization by biological processes resulting in two inflexible opposites, it is important to look towards gender as a social construct, an active process and a part of the social dynamic. We must try to comprehend these processes; how gender orders are created and how gender inequalities come into existence and might transform [10]. With that said, gender is not unrelated to the biological categories, especially within the field of health, however, gender, in contrast to sex, determines practices and categories of social life and sexual politics. Additionally, the gender category 'men' or the gender category 'women' have specific cultural content in a given place and time, and are more complex and multidimensional in their structures than the biological categories of 'male' and 'female' [12]. The poststructuralist school argues that gender is a consequence of discourse [13] and that gender exists through the actions by which we conduct ourselves as gendered subjects. Through these actions we are subsequently understood as being either masculine or feminine [14]. Still, health research and policy documents must treat gender as a multidimensional structure and recognize the complex network of institutions where it operates [10]. It must also recognize that gender inequalities interact with inequalities based on age, income, race, disability, ethnicity, social class, and environmental factors, and that the interplay between these factors may enhance, or decrease, the vulnerability of a person and hence constructing the social prerequisites for access to health care and attainment of wellbeing [5, 15]. This calls for a multisectoral strategy that integrates the contribution of non-health sectors to the overall health and wellbeing of women and girls and the promotion of healthy public policies rather than health specific policies [16]. In an attempt to bridge the existing theoretical and methodological gap, Connell [10] and Hammarström et al [11] suggest the relational theory of gender to be useful within the field of health research and health policy.

### *Relational Theory of Gender – in Brief*

The relational approach to theorizing gender focuses on the patterned relationships between women and men, as well as among women and among men, while considering social processes [10–12]. This approach acknowledges the multidimensionality of gender and emphasizes how economic, power, affective and symbolic relations interact with gender relations. In addition, it acknowledges the different levels where these social processes operate; the intrapersonal, interpersonal, institutional and society-wide [10].

### *Gender: Equality and Equity*

Sustainable development goal number five aims to achieve gender equality by 2030, and the SDGs emphasize the empowerment of all women and girls as an overarching goal. In addition, women's role in achieving sustainable development has been identified and highlighted as “achieving gender equality and realizing human rights, dignity and capabilities of diverse groups of women is a central requirement of a just and sustainable world” [17]. Important to clarify here is that the concepts of gender equality are commonly translated into gender equity in the context of health systems. Both concepts make the same assumption that the distribution of opportunities, resources and responsibilities between women and men should be equal and should not disfavour any group. However, gender equality speaks of the absence of discrimination, that is to say that equal rights and gender equity speaks of needs-based approaches to meet the needs of both women and men, regardless of whether there are differences of needs [11]. Consequently, gender equity is thought to be more open for subjective interpretations that could lead to the justification of discrimination. However, in a health setting the needs approach in gender equity is easier to apply and relate to and has therefore become the accepted terminology. For the purpose of this thesis, I will adopt the term gender equality.

### *Patriarchy and Gender*

Patriarchy and gender structures in society are often justified by what is thought to be necessary historical and cultural development. However, as Connell has already argued in 1987, the present we live in is no more historically necessary than any of our possible futures [12]. Hence, patriarchy, sexism and sexual oppression were never necessary in our societies. This argument emphasizes the active role of humans in producing gender structures and the fact that every society could have abolished these structures if it desired to do so, regardless of the level of technological development. Connell writes in her book, *Gender and Power* [12]: “what is changed by the level of technology is not the possibility of altering gender relations but the consequences of doing so”, referring to the set of arrangements required to,

for example, share childcare and how they may vary depending on the context and the circumstances.

The family is considered to be a complex structure where relationships extend over time and are interwoven with economies, emotions, power and resistance. The typical patriarchal pattern within a family is enacted through power structures where, traditionally, the young would be subordinate to the old and women would be subordinate to men. Such family dynamics are partly attributed to the husband's power to define their wives' position, and are highly dependent on the contextual and societal support to maintain such structures. Nevertheless, power sharing within the family exists, despite not necessarily being showcased – women are often in actual control of the household, however, the men claim that authority. Although patriarchy and the family structures can take different shapes in different contexts and circumstances, the traditional power structures described above are often true in the Indian context, especially in rural areas [18]. While it is important to recognize the oppression and subordination of women, it is of greater importance to recognize the social changes needed to correct these imbalances. Moreover, there is a need to understand how the specific ways in which subordination is embedded in different cultures, the different forms it can take and the different strategies that are required, in order to respond to these differences. In line with Connells's relational gender theory, we must look to how the economic, power, affective and symbolic relations interact with gender relations, and acknowledge other influential multidimensional circumstances such as class, ethnicity, and nationality in addition to gender [12]. Such circumstances intersect at different levels and to different extents and influence health differently depending on the context [19, 15].

## Maternal Mortality and Morbidity

At the recent XXI FIGO World Congress in 2015, Professor Lesley Regan reminded the obstetrician and gynaecologist community that maternal mortality is determined by the status of girls in society, women's level of empowerment and their ability to make healthy choices. Moreover, she defined the indicator for maternal mortality as “the extent to which society values women and prioritizes women's reproductive health” and the measure of maternal mortality as “the inequities that intersect across gender, ethnicity, race, socioeconomic background and geography of residence”.

The WHO defines maternal mortality as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes [20]. Maternal mortality is often measured in MMR and is defined as the number of direct and indirect maternal deaths per 100 000 live births.

This ratio does not represent the morbidity women suffer from pregnancy-related complications [21].

The global MMR has fallen by nearly 44% since 1990 and is now estimated to be at 216 maternal deaths per 100 000 live births [22]. The risk of dying during pregnancy and childbirth varies greatly in different regions of the world. Among pregnant women in Europe the risk of dying during pregnancy or childbirth is 1 in 3300 as compared to 1 in 40 in Africa. This figure illustrates how maternal mortality is a result of lack of resources, inequitable health care, and women's limited ability to practise their right to sexual and reproductive health [23]. Approximately 830 women die every day due to complications in pregnancy and childbirth [22]. The top six causes of maternal mortality are: the pre-existing medical conditions exacerbated by pregnancy, such as diabetes, Human Immunodeficiency virus (HIV), malaria, and obesity (28%); the second cause of maternal mortality is severe bleeding (27%); followed by eclampsia (14%); sepsis (11%); obstructed labour or other direct causes (9%); and abortion complications (8%) [24]. Important to note is the underrepresentation of maternal deaths due to abortions. Misclassification is common and a large amount of abortion-related mortality is classified as haemorrhage or sepsis. However, abortion-related mortality may also be misclassified as a non-maternal death, especially when it occurs in early pregnancy and because of the controversy and stigma in many settings. The previous global estimate for abortion-related mortality was 13% and it is likely that the numbers are even higher than that [24].

## Adolescents and Young People

Currently, 1.8 billion young people (those aged between 10-24 years) represent 25% of the world's population and comprise the largest young population to ever inhabit the world. Almost 90% of these young people live in LMIC [25]. India alone is home to 358 million young people, representing 20% of India's total population. The young people of today are the foundation for future health, and they deserve attention and resources [25]. However, it is easy to consider young people a healthy and strong group with little health needs, especially adolescents (those aged between 10–19 years), and consequently, their health has improved far less than that of children over the past 50 years [25].

Adolescence is characterised by rapid biological, emotional and social development where great changes in social interactions and relationships occur in a short time span. Hence, adolescence can either set the stage for a healthy and productive adulthood, or it can be a risky phase motivating problem behaviours with subsequent serious adverse effects on health in the future [26]. However, the improved understanding of the biological processes during adolescence underlines the importance of investing in a healthy envi-

ronment to foster a healthy population [27]. Additionally, the shape of adolescence is rapidly changing, the age of onset of puberty is decreasing and the age at which mature social roles are achieved is rising [25], resulting in an increased vulnerability at an earlier age and potential earlier conception upon sexual activity. In combination with a supportive environment, adolescents need health education, including education on sexuality, and quality health services, including sexual and reproductive health services [28]. Prioritizing adolescents' health and a healthy environment in which they exist is subsequently a means to avoiding future ill-health and promote a healthy population that can contribute to national development and growth [27, 29]. With the new Global Sustainable Development Agenda and the updated Global Strategy towards Women's, Children's and Adolescents' health, adolescents and young people have gained attention [6]. At the World Health Assembly 2015, where the health-related SDGs were discussed and the priorities for the future were set, the need for health strategies focusing specifically on adolescents was emphasized. However, it was also emphasized that adolescent wellbeing requires a holistic approach, bridging across disciplines [30]. Strategies targeting adolescents and young people must consider social determinants of health such as educational opportunities, work and labour regulations, socio-cultural aspects such as age of marriage and patriarchal structures with patrilineal inheritance patterns [27]. Moreover, the work must emphasize preventive measures and health promotion to avoid future ill-health rather than focus on the treatment of current diseases [31].

### *Sexual and Reproductive Health among Young People*

Globally, girls are more likely to have engaged in early sex in adolescence than boys. Estimates from LMIC (excluding China) suggest that 11% of females and 6% of males aged 15–19 years engaged in sex before the age of 15. Few girls use contraception, and girls are less likely to use condoms than boys, regardless of their elevated vulnerability to STI and HIV. Estimated 20 000 girls under age of 18 give birth every day in LMIC, and 2 million of the annual 7.3 million adolescent mothers are below 15 years of age [32]. In addition, an estimated 1–4 million adolescents have abortions annually; these numbers are inaccurate due to the limited and poor quality of data that are available [33]. Maternal mortality is the second cause of death among adolescent girls aged 15-19 years. A systematic review of barriers to contraceptive use among young people in Africa and Asia suggests that the lack of access to contraceptive methods, insufficient awareness with regard to contraception, and rumours of side effects explain the limited use of modern contraception among adolescents. In contrast, condoms were easy to access yet rarely used due to their association with disease and promiscuity and because their use implies greater male control [34]. In addition, stigma, discrimination, judgemental treatment, lack of confidentiality, and inability to

physically access services further creates barriers to care, especially for adolescents and young people [35].

Early marriage is common; it is currently estimated that every third young woman marries before the age of 18 in LMIC (excluding China). The current literature agrees that early marriage is associated with a number of adverse sexual and reproductive outcomes. Such outcomes include unintended pregnancy, pregnancy-related complications, pre-term delivery, delivery of low birth weight babies, foetal mortality and physical and/or sexual violence within marriage [36]. In addition, early marriage is associated with compromised educational opportunities, resulting in people who marry early having lower educational attainment compared with their unmarried counterparts or those who delayed marriage until after the age of 18, especially seen among women however also reflected in men's educational level [37]. A survey study from India indicates that women who married at the age of 18 or later were more likely than women who had married before the age of 18 to be able to influence their reproduction in terms of delaying conception, and having a facility birth [38]. Another Indian study indicated a demand for contraception among recently married young people, to delay the first pregnancy. However, only 10% of women who reported contraceptive demand had actually practiced contraception. These women were more likely to be educated, aware of family planning methods before marriage, and to influence marriage-related decisions. In contrast, women who felt pressure to prove fertility were less likely to have practiced contraception [39].

## Unsafe Abortion – The Preventable Pandemic

Abortion is defined as the termination of pregnancy, occurring before 28 weeks of gestation [40], whether spontaneous or induced. Unsafe abortion is defined as any procedure with the purpose of terminating pregnancy, conducted by persons lacking proper skills or in an unhygienic, non-medical setting, or both [41]. It is important to keep in mind that the requirements of skills of the persons providing an abortion, and the medical standards required for an abortion are different for medical and surgical abortion, and that these will also vary depending on the duration of the pregnancy [42].

The overall global abortion rate, measured as annual incidence per 1000 women aged 15–44 years, is 28 and this figure has remained stable since 2003. The estimated unsafe abortion rate has also remained stable at 14, since 1995. Almost all (98%) unsafe abortions occur in LMIC and 56% of all abortions in LMIC are unsafe. In contrast, abortions in high-income countries are rarely unsafe (6%). Restrictive laws do not decrease the number of abortions. In fact, countries where laws are restrictive tend to have a higher overall abortion rate than countries with no restrictions, partly due to a lack of access to contraception. However, the major difference is the rate of un-

safe abortions [23]. Unsafe abortions are referred to as the preventable pandemic because abortion-related deaths would be negligible if abortions were made legal, accessible and de-stigmatized globally [43].

## Comprehensive Abortion Care

The WHO, in their handbook for safe abortion care, describes comprehensive abortion care as a three-stage service: pre-abortion, abortion and post-abortion. The pre-abortion stage includes information and counselling, medical history and physical examination and contraceptive counselling. The subsequent abortion procedure applies surgical or medical methods, depending on the preference of the woman, the recommendation of the doctor as well as the gestational age of the pregnancy. Post-abortion includes follow-up with a health care provider to assess the abortion outcome, contraceptive counselling and assessing or managing abortion complications if necessary [44]. The WHO recommends medical abortion from detection of pregnancy and beyond 14 weeks of gestation. The surgical methods recommended are manual or electric vacuum aspiration up to 12 to 14 weeks of gestation, and dilatation and evacuation beyond 14 weeks of gestation. Sharp curettage is discouraged [40]. The medical regimen is described in Table 1.

Table 1. *Medical Abortion Regimen (WHO recommendation)*

<b>Gestational Length</b>	<b>≤ 7 weeks</b>	<b>&gt;7–9 weeks</b>	<b>&gt;9–12 weeks</b>	<b>&gt;12 weeks</b>
Mifepristone	200 mg	200 mg	200 mg	200 mg
Misoprostol				
Oral	400 µg			400 + 400 µg
Vaginal		800 µg	800 + 400 µg*	800 + 400 µg*
Buccal		800 µg		
Sublingual		800 µg	or + 400 µg	or + 400 µg

\*Every 3 hours up to 5 doses

Medical abortion, using a combination of mifepristone and the prostaglandin E<sub>1</sub> analogue misoprostol has proven to be a safe and effective method to induce abortions [45, 46]. In addition, misoprostol-only abortions are effective and safe and are recommended in settings where mifepristone is not legal or available [47, 48]. The medical abortion has gained support in the past decade and with its high (>95%) success rate it is as proven to be as efficacious as the surgical abortion [49]. Using mifepristone and misoprostol to induce an abortion can be compared to a spontaneous abortion, and safety of the method is therefore very high. Due to its non-invasive nature the risk of infections are low and severe complications are rare [50, 51]. The overall level of satisfaction in studies investigating abortion services is high, as long

as the abortion is successful. However, a few factors have been associated with acceptability of induced abortion services. Bleeding, pain, uncertain length of treatment and the number of visits required to the clinic are factors identified as determinants of satisfaction [52, 53]. Moreover women seem to prefer a medical, non-invasive, method rather than a surgical, invasive, method [54].

### *Medical Abortion – The Mechanism of Action*

The medical abortion comprises two medicines with different mechanisms of action. Misoprostol, a prostaglandin E<sub>1</sub> analogue, was primarily developed and approved to prevent and treat gastro duodenal damage induced by non-steroidal anti-inflammatory drugs. However, misoprostol has been used within the field of obstetrics and gynaecology for decades and has several applications in addition to medical abortion and the treatment of incomplete abortions, including the induction of labour, cervical ripening before surgical procedures, and the treatment of postpartum haemorrhage. When misoprostol binds to myometrial cells it causes strong contractions leading to the expulsion of tissue.

The second medicine is called Mifepristone, an anti-progesterone, and is an abortion-specific drug that works to ripen the uterus and shorten the induction-to-abortion interval. In addition, the use of mifepristone lowers the dose of misoprostol needed for successful induction of abortion and increases efficacy and acceptability of treatment [49, 50, 55, 56]. When mifepristone binds the progesterone receptor it blocks the receptor from being activated, resulting in endometrial degeneration, and cervical softening and dilatation. Additionally, mifepristone stimulates the release of endogenous prostaglandins while also increasing the sensitivity of the myometrium to the contractile effects of prostaglandins, and hence prepares the uterus for the effects of misoprostol [50, 57]. The WHO added the combination of mifepristone and misoprostol to their list of essential drugs in 2005 for medical abortion, up to seven weeks of gestation. The availability of misoprostol and mifepristone varies across the globe. However, due to the initial application of misoprostol being unrelated to abortion, misoprostol is available in many settings although not always for the purpose of abortion. Under such circumstances, misoprostol can be used for off-label purposes, such as abortion. Mifepristone, on the other hand, is still far from globally available and accessible, however, recent research suggests its potential use in contraception [58] and may hence be approved in countries for reasons other than abortion.

### *Post-abortion Contraception*

Post-abortion contraceptive service provision is a key component of comprehensive abortion care and treatment of incomplete abortion. Early initiation of contraception post-abortion is crucial to avoid repeat unintended

pregnancies. Most women ovulate before returned menses, however, ovulation may occur as early as 10 days post-abortion and results in rapid return of ovulation and fertility [59]. Informing women about their return of fertility is crucial in an abortion context [40]. Contraceptive counselling refers to providing the woman with adequate information about a variety of contraceptive methods. The methods should preferably be available for immediate provision and provided according to the woman's request. Contraception must be voluntary and not a condition for receiving the abortion. Recent research shows that abortion provides a window of opportunity to motivate contraceptive use because the woman does not wish to be pregnant at that time [60–63]. Most contraceptive methods can be provided at the time of the abortion. Long-acting reversible contraceptives (LARC) such as intrauterine copper devices and levonorgestrel intrauterine systems (LNG-IUS), can be inserted at the time of a surgical abortion and as soon as the pregnancy is expelled after a medical abortion, while injections, implants and contraceptive pills can be provided as early as on day one of a medical abortion [44].

## Simplified Medical Abortion

Over the past decade, studies have sought evidence of how to simplify the medical abortion procedure to enable increased access to abortion without compromising quality and safety. To achieve this, research has evaluated and investigated different means of simplification, such as task sharing of medical abortion provision with other health-care professionals [64–66]. The WHO recently published evidence-based recommendations with regard to health care provider roles in abortion care and post-abortion contraception where they recommend a substantial expansion of the provider base for medical abortion [67]. The profound lack of skilled health-care professionals (midwives, nurses and physicians) seen especially in the global south today [68] is a threat to health service provision and compromises access to safe and quality services. However, to optimize the use of available human resources through task sharing within a range of trained providers could facilitate access to essential health services especially in primary health care settings. This could include the provision of safe and quality abortion services provided by health care providers other than specialist doctors, given that they have the appropriate training and skills to do so. In a study from Sweden, women preferred midwives over physicians as their abortion providers, and those who received care from a midwife were more likely to adopt a LARC post-abortion, suggesting that expanding the provider base can increase acceptability of medical abortion among women and promote the use of more effective contraception [65]. Another means of simplification of medical abortion is the attempt to decrease the number of clinical visits by providing the option to administer the second dose, misoprostol, at home.

Studies have shown that women prefer fewer clinical visits and to expel the pregnancy at home [53, 69]. Home-use of misoprostol has been proven safe and effective and is widely implemented in both high- and low-resource settings [69, 70]. Finally, there have been suggestions of how the number of visits can be decreased further through a simplified follow-up after an early medical abortion (up to 9 weeks of gestation) through a home-based self-assessment using a low-sensitivity pregnancy test. This is proven effective, safe and accepted in high-resource or urban settings [71–73].

#### *Simplified follow-up after early medical abortion*

The importance of providing the option of home-based assessment of a medical abortion has its foundation in the existing WHO guidelines that suggest that a medical follow-up is not necessary after an uncomplicated medical abortion. This is applicable for women with a gestational age of up to 12 weeks, if the woman receives proper counselling at the time of her abortion. Although a clinical visit may not be required, follow-up is important to detect any continuing pregnancies [40]. Currently, women tend to not return to their scheduled follow-up visit, especially not in low-resource settings. A survey from India suggests that approximately 60% of women do not return to the clinic to confirm completion of abortion [74].

The current practice of three clinical visits results in considerable service costs and the misuse of resources, especially when women do not return to their scheduled follow-up visit. A number of studies have established the feasibility and safety of home-administration of misoprostol [69, 70, 75, 76]. Fewer studies evaluate alternative means of follow-up after a medical abortion and the majority of them are survey studies with small study samples [73, 77, 78] or recent studies carried out in a high-resource or urban setting [79, 80]. A recent study from London demonstrates that follow-up after early medical abortion can be carried out using remote communication technologies [81]. Moreover, women conducting a low-sensitivity pregnancy test (LSPT) two weeks after early medical abortion in combination with a telephone follow-up by a health provider has been implemented as standard procedure in a general hospital in Edinburgh [71, 77].

The two-week interval after a medical abortion to assess the outcome is determined by the sensitivity of the LSPT (1000 units/litre). It has been established that the human chorionic gonadotropin (hCG) levels of women with a gestational age of no more than nine weeks drops substantially at 10–12 days after a medical abortion. While using a high-sensitivity pregnancy test could result in a false positive, a LSPT could recognize the decrease in hCG levels. The established cut-off of 1000 units/litres will detect all continuing pregnancies, however, may indicate false positives, as not all women's hCG drops below 1000 units/litre within 10–12 days. Moreover, using the LSPT is beneficial due to its substitution of a clinical assessment soon after the medical abortion. It is well established that assessing the outcome

of medical abortion, either with ultrasound or by clinical examination, soon after the medical abortion is associated with increased numbers of false positives and hence unnecessary surgical interventions [82]. In addition to the LSPT, alternative tests have been evaluated. Studies have shown the feasibility of self-assessment with a high sensitivity pregnancy test at 30 days after abortion or a semi-quantitative pregnancy test post-abortion, both combined with a telephone follow-up [73, 78, 80]. However, to assess the abortion outcome 30 days post-abortion may be too late for women who live in settings where abortion beyond 12 weeks is illegal or difficult to access.

## Contraception and Family Planning

There is an increasing need for contraceptive methods to delay, plan and limit childbearing [83]. This goes hand-in-hand with the forthcoming desire for small families and healthy spacing between pregnancies being more accepted and practiced in LMIC. The term ‘unmet need’ refers to women’s desire to avoid pregnancy while doing nothing pro-active to realize this wish. At the 1994 ICPD, the language shifted from ‘fertility reduction’ to ‘addressing unmet need’ and was presented as the central justification for investment in family planning. Additionally, both the MDGs and in discussions at the London Summit on Family Planning in 2012, the concept of ‘unmet need’ was used as an indicator to measure the progress of family planning programmes [84]. This gives the measure of ‘unmet need’ legitimacy and observes the past decade’s emphasis on women’s needs and right to sexual and reproductive health, rather than to only focus on population control for the benefit of the country [85].

In 2012, an estimated 57% of women (aged between 15–49 years) wanted to avoid pregnancy and were therefore in need of effective contraception. In spite of this, data from national surveys globally revealed that 26% of women faced an unmet need for modern contraceptive methods in 2012. However, the unmet need for modern contraceptives demonstrates regional differences where Sub-Saharan Africa contributes with the highest proportion (60%) of unmet need (53 of 89 million), and south Asia comprises the largest number; 83 million (34% of 246 million) of women with an unmet need [83].

A large contributor to women’s unmet need of contraceptive methods is women’s discontinuation of the method used. A key feature in contraceptive service provision is to provide women with a variety of methods they can choose from, including both short- and long-acting contraceptive methods, and allowing women to switch between methods according to their wish. With accompanying convenient, accessible, high-quality services ensuring availability and affordability of methods, discontinuation may be avoided [84, 86, 87]. In addition, previous research suggests that contraceptive ser-

vice provision is effective if provided in conjunction with pregnancy care, and at the antenatal, post-partum, post-natal periods, as well as post-abortion [60, 61, 88–91].

### *Contraceptive Methods*

Contraceptive methods vary in their efficacy to prevent pregnancy. The Pearl Index is a commonly used measure of contraceptive failure and indicates the number of pregnancies per 100 woman years. The variety of contraceptive methods is presented in Table 2.

Table 2. *Types of modern contraception, their mechanisms and effectiveness\**

<b>Category</b>	<b>Type of Method</b>	<b>Description</b>	<b>Mechanism</b>	<b>Effectiveness (perfect/ typical)</b>
Barrier	Male Condom	Double protection: STI and pregnancy	Mechanic barrier	98% / 85%
	Female Condom			90% / 79%
Short-Acting Reversible	Oral pill	Hormonal methods combining Oestrogen & progestin	Prevents ovulation	>99% / 92%
	Vaginal-ring/ patch			Not available
Long-Acting Reversible	Progestogen-only pill, Injectable	Hormonal methods, progestin-only	Thickens cervical mucous and prevents ovulation.	99% / 90-97% >99% / 97%
	Hormonal IUD (LNG-IUS)	Levonorgestre-releasing. Positioned in the uterus (3-7 years)	Inhibits ovulation and implantation of ovum	> 99% / > 99%
Permanent	Copper IUD	Positioned in the uterus, can also be used as emergency contraception (5-10 years)	Causes chemical change that damages sperm and egg to avoid fertilization	>99% / >99%
	Tubectomy	Cut fallopian tubes, irreversible	Inhibits transport of egg	>99%
Temporary	Vasectomy (male sterilization)	Cut/tie tubes, can be reversed	Keeps sperm out of ejaculated semen	> 99% with evaluation / 97-98% no evaluation
	Lactational Amenorrhea	For recent mothers whose period has not returned. Requires exclusive breastfeeding up to 6 months.	Prevents ovulation	99% / 98%
Emergency Contraception	Pill	Hormonal method, Levonorgestrel	Prevents/delays ovulation, affects vaginal mucous and ability of sperm to attach to the ovum. Does not reverse fertilization once occurred.	1 in 100 women using EC.

\*The table is not exhaustive of all contraceptive methods. Effectiveness is presented as perfect use /typical use. Source: <http://www.who.int/mediacentre/factsheets/fs351/en/>

A systematic review compared failure rates of contraceptive methods and established the following descending hierarchy of efficacy: (1) female sterilization, long-acting hormonal contraceptives (LNG-IUS and implants); (2) Copper Intrauterine Devices (IUDs) with  $\geq 300\text{mm}^2$  surface area; (3) Copper-IUDs with  $< 300\text{mm}^2$  surface area and short-acting hormonal contraceptives (injectables, oral contraceptives, the patch and vaginal ring); and (4) barrier methods/natural methods [92]. The effectiveness of methods that require patient compliance vary between ethnicities and socio-economic contexts, however, methods such as the IUD require little patient compliance and the effectiveness is likely to be similar regardless of setting [92, 93].

Long-acting reversible contraceptives have gained growing attention and popularity due to their high efficacy and little difference between ‘perfect’ and ‘typical’ use (Table 2). Long-acting hormonal contraceptives such as the LNG-IUS have been suggested to be as effective as sterilization during the first year, however, its reversible nature makes it more attractive to women [92]. The most important trait of contraception, according to women, is the efficacy to prevent pregnancy. Research suggests that giving women an informed choice explaining the effectiveness, mechanisms and potential side effects of different methods can motivate women to initiate a contraceptive and improve compliance [94]. There are several barriers to the use of LARCs, especially the LNG-IUS or implant; they are still expensive and hence rarely available in LMIC. The copper-IUD, on the other hand, is cheap and more easily available, however, it is known to increase menstrual bleeding and may not be appropriate in settings where anaemia and lack of nutrition is common [95]. In addition, there are many myths and misconceptions with regard to LARC, especially for use among adolescents and young women, and providers are reluctant to provide LARC to young people due to their fear of it causing adverse effects, for example, infertility [96]. Instead, LARC are recommended for use among young people, and great effects have been shown when used post-medical abortion, especially when provided on the first day of the abortion [60, 61]. In 2012, only 4% of women using modern contraception in South Asia and 3% in Sub-Saharan Africa used IUD, and 3% of women in South Asia used implant or injectable contraceptives [83]. Research indicates that Latin women who want to limit childbearing do not consider LARC because of a lack of knowledge of the methods [97]. Similarly, young women seeking abortion lack awareness of LARC and available alternatives of contraception [98]. LARC methods are considered to be more cost-effective than oral pills, where the implant was considered the most cost-effective among the hormonal methods [99].

## Reproductive Health and Abortion in India

The maternal mortality ratio in India decreased from 570 in 1990 to 178 in 2012 and made India one of the countries with the fastest and greatest decline in MMR [3, 100]. Despite these remarkable gains, India remains responsible for 45 000 maternal deaths annually, corresponding to 15% of maternal deaths globally. This makes India account for the second largest proportion of maternal deaths after Nigeria and confirms the country's inability to achieve the MDG5 [2].

The latest national estimates of abortions were documented in the sample registration system census data from 2001-2003, where unsafe abortion rates were estimated to account for 8% of maternal deaths [101]. However, regional differences vary greatly and a study from Rajasthan indicates that abortion-related deaths account for 18% of maternal deaths [102]. An overview of induced abortions worldwide has problematized the lack of sufficient data to estimate accurate incidence of induced abortions in India [103]. However, based on a survey from six Indian states, the estimated induced abortion rate was 6.4 million in 2002, out of which 2.4 million were safe abortions provided by skilled and certified providers. These estimates indicate an increase in safe abortions in India, as compared to the estimated 1.1 million safe abortions in 1995 [103]. Another source, also based on 2002 data, suggests that only 15% of abortions are performed within the legal framework, and therefore suggests 75% to be unsafe [104]. Unfortunately, there are no more recent estimates for induced abortions available in India and general under-reporting of induced abortion is believed to be extensive [105].

## India's Health System Response to Maternal Mortality

The Indian Government launched the National Rural Health Mission (NRHM) in 2005 as a comprehensive decentralized public health programme, with a focus on maternal and child health in both primary and community settings. At the time of the launch, the NRHM was an attempt to respond to the persisting poor maternal and child health in rural India by increasing access to quality care in deprived and underserved communities, focusing on rural areas [106–108]. The NRHM primarily works through the recruitment of one female health volunteer in each village, referred to as ASHA (Accredited Social Health Activist). ASHAs have the task of providing health promotion and information in the very remote areas and, in particular, to recruit women to antenatal-care services, facility-delivery, and post-natal care services, including vaccination [109]. In addition, the government recently changed its policy to allow staff nurses and auxiliary nurse-midwives to initiate treatment of pregnancy-related complications including

the administration of intravenous fluids, injections, antibiotics, and magnesium sulphate. Auxiliary nurse-midwives have also been trained in skilled birth attendance to improve their skills in conducting normal deliveries, and the government has upgraded its community health centres to enable the provision of referral services to mothers for obstetric emergencies, complications, and safe abortion services. The NRHM does not restrict itself to the biomedical health system, but includes the services of the Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH) doctors for preventive and curative care. However, to optimize the role and integration of AYUSH doctors under the NRHM, their role must be better understood and defined [109].

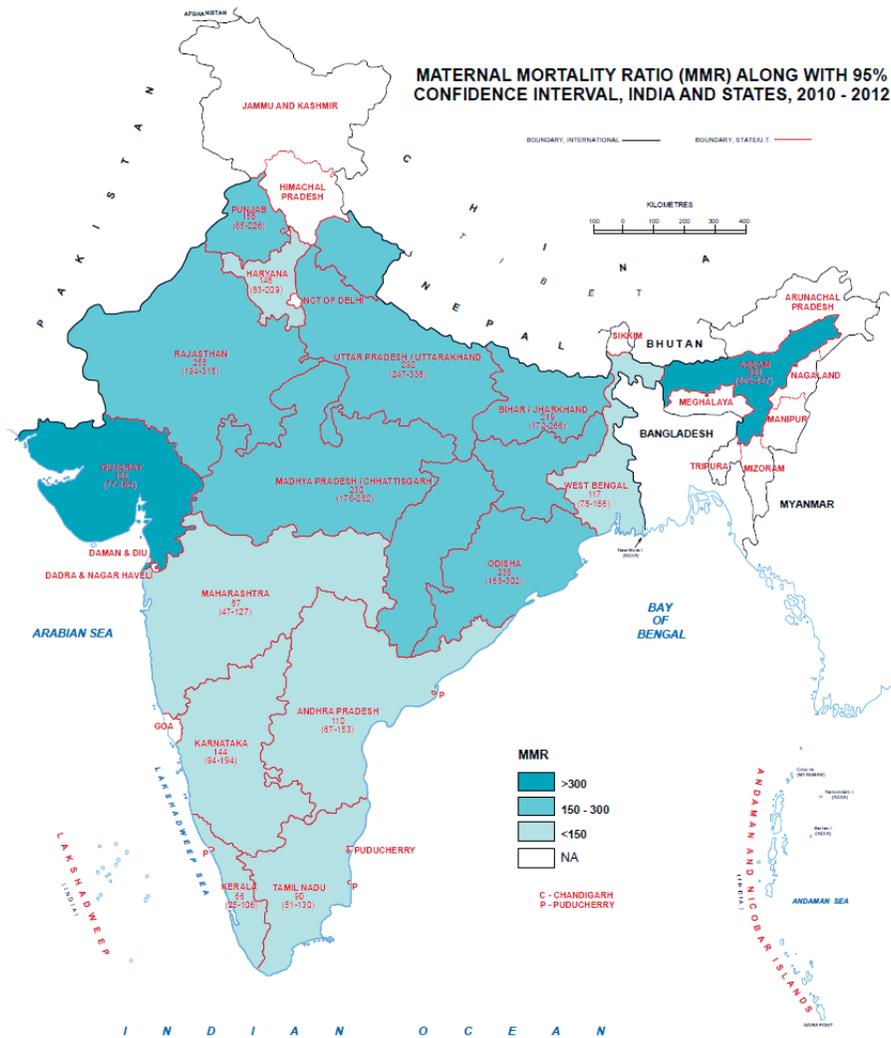


Figure 1. Overview of Maternal Mortality Ratio in India stratified by States [100].

## The Legal Framework of Abortion in India

The Medical Termination of Pregnancy (MTP) Act, 1971, came into effect in April 1972 [101, 102] and was amended in 2002. According to the MTP Act, abortions are legal at up to 20 weeks' gestation if continuation of the pregnancy would involve a risk to the life of the pregnant woman or if it would cause grave injury to her physical or mental health. Moreover, abortions can also be performed if the foetus suffers from severe abnormalities, if the pregnancy was caused by rape or, if the contraceptive method used by a married woman or her husband, failed to prevent pregnancy [110]. Governmental facilities may provide abortion services if they employ an MBBS doctor (bachelor of medicine) trained to provide abortions or an obstetrician and gynaecologist. Private clinics need governmental approval or approval by the District Level Committee to be allowed to provide abortion services [111]. According to the National CAC Guidelines: primary health centres may provide abortions at up to eight weeks' gestation; Community Health Centres or Primary Health Centres that are open for 24 hours may provide abortions at up to 12 weeks' gestation; and district hospitals and above facilities may provide abortions at up to 20 weeks' gestation. Private facilities can be approved to provide abortions at up to either 12 weeks' or 20 weeks' gestation [110, 112].

In 2002, the Drug Controller of India approved the use of mifepristone for the purpose of termination of pregnancy at up to 49 days (7 weeks) of gestation. In 2006, misoprostol was approved for treating gynaecological conditions, including early abortions [113]. In 2008, the Central Drug Standard Control Organisation approved the 'combi-pack' (1 tablet of mifepristone 200mg and 4 tablets of misoprostol 200 mcg) for early medical abortion at up to 63 days (9 weeks) of gestation, however the MTP rules still state 49 days as a limit for medical abortion [112]. In addition, mifepristone is only allowed to be provided by a gynaecologist. This restricts access to medical abortion considerably [114]. In 2014, the government disseminated a new MTP Act amendment proposal, written by an expert group on behalf of the government, to receive input from professionals and national organisations such as the Indian Medical Association and the Federation of Obstetric and Gynaecological Societies of India (FOGSI). The amendment proposal included extending the gestational length of legal abortion at up to 24 weeks' gestation upon special indications related to foetal abnormalities or to save the life of the woman. Moreover, it suggests an expansion of the provider base of early abortion and includes nurses, nurse-midwives and AYUSH doctors as potential abortion providers, provided that they are trained and supervised to do so. This proposal resulted in a heated debate and many unsubstantiated arguments against task sharing in abortion care [115]. We have yet to discover whether or not the amendment will be approved by the government and how the professional community will respond.

## Access to Safe Abortion in India

In spite of the legal status of abortion in India, unsafe abortions are common [103, 116]. Safe abortion services are especially inaccessible in rural areas and among poorer populations [117]. A survey from 2000 suggests that there are four legal abortion facilities per 100 000 people, with an average of 1.2 providers per facility. Additionally, only 24% of all private abortion facilities are certified and thereby legal [104]. A government survey reported that only 13% of primary health centres and 28% of rural hospitals employed trained abortion providers [118].

Apart from inaccessible abortion services, there are other barriers impeding access to safe abortion. Misconceptions, misinterpretation and poor awareness of the law are widely present, especially among women living in rural areas. The complicated provider certification procedures limit the number of providers and policies are not updated to recommend the newest existing technology [114]. In addition, women report that concerns about confidentiality, cost and quality of available services influence acceptability as well as affect them in their choice of abortion provider. This results in the women's preference for private clinics over governmental facilities, regardless of economic implications [119, 120].

Women's doubts about the quality of abortion services are justified. Records from 2004 suggest that 89% of abortions provided in the public health system used sharp curettage [104]. This is in spite of the WHO recommendations and the available options of medical abortion or vacuum aspiration [40]. Medical abortion is feasible and acceptable in India [121, 122], however, implementation of medical abortion as an alternative to surgical abortion has been slow on a national scale. As of 2004, only 3% of qualified abortion providers are reported to provide medical abortion, and 23% intended to do so in the future [123].

The cost of abortions vary greatly; a first trimester abortion is less expensive than a second trimester abortion, and in several districts, fees are added if the woman is unmarried or when the husband does not accompany the woman to the clinic [104]. Government facilities are supposed to provide free abortion services, however, private facilities may charge according to their wish. Some State Governments have introduced fees for abortion services unless the woman adopts a contraceptive method post-abortion [118].

These findings indicate an unwillingness to enable comprehensive abortion care among providers as well as decision-makers. Moreover, the limited availability of acceptable services within the public health system may be attributed to a financial interest among providers.

### *Gender-Biased Sex Selection in India*

The sex ratio in India has fallen over the past century, and in the most recent census of India (2013) the child sex ratio is estimated 909 girls per 1000

boys (in the age group 0–6), with varying ratios across the country [124]. The declining sex ratio can be explained by the decreased fertility rate in combination with the persisting patrilineal inheritance and kinship that makes boys more valuable to the natal family [125]. The social pressure on women to conceive a son has resulted in practices such as: sex determination followed by abortion in the case of a female foetus; female foeticide; and increased sterilization rate, or adoption of contraception, among women who have at least two boys [126–128]. All these factors contribute to the declining sex ratio; however, the medical and political discourse is less nuanced and often portrays abortions as the exclusive explanation for its decline. In 1994 (amended in 2003), the government introduced a new law prohibiting pre-conception and pre-natal diagnostic techniques (PC & PNDT) for the purpose of sex determination. This was an attempt to decrease ‘sex-selective abortions’. The combination of medical attention, political interventions to punish abortion providers suspected to offer sex-selective abortions, and the increased restrictions on the provision and retail of medical abortion pills (mifepristone and misoprostol) has resulted in fear of being associated with any abortion practice and instead of limiting sex-determination, the access to safe abortion services have been compromised. Yet, in a new guidance document released by the government, only 9% of all abortions are estimated to be sex-selective, and the majority of abortions are carried out in the first trimester [110]. To address the misperceptions around the PC & PNDT Act and the MTP Act, the Government of India recently released a guidance document with the aim of clarifying the interpretations of the two Acts and to ensure access to safe abortion while addressing gender-biased sex selection [110]. Instead of compromising women’s right to sexual and reproductive health by limiting essential reproductive health services, a holistic approach targeting the gender inequalities must be taken [125, 129].

## Family Planning in India

The most recent demographic health survey shows that overall contraceptive use among all women of reproductive age in India is below 40%, and among married women is just below 50%. Although contraceptive use has increased over time, the increase is slow, especially among young women. Approximately 20% of unmarried, sexually active, young women (aged between 15–24 years) use any form of modern contraception, and among married women, approximately 5% aged 15–19 years and 25% aged 20–24 years use modern contraception. The age group of 35–39 have the highest use of contraception with more than 60% using a method. There are no big variations in contraceptive use among married women depending on their level of education or wealth, however, urban women are more likely to use contraception than women living in rural areas [130].

Research confirms considerable demand for contraception to postpone the first pregnancy (51%). Of those expressing a demand, only 10% had practiced contraception. Educated women, women who were aware of family planning methods before marriage, women who were exposed to quality sexuality education, and those who participated in marriage-related decision-making were more likely to have used contraception, while women who reported feeling pressure to prove their fertility were less likely to have practiced contraception [39].

The NRHM provides condoms, oral pills and copper-IUDs free of charge, however, sterilization is still preferred and promoted and may be a remnant of India's earlier family planning approach that focused on population control rather than reproductive health [131]. Women, and men, who undergo sterilization, receive a small monetary incentive from the government regardless of whether they receive the service from a private or a public health facility. The three-month injection is available at a cost while the hormonal implant and LNG-IUS are not available under the NRHM. However, these methods may be available in the bigger cities at private clinics and are often expensive. The public facilities have a longstanding poor reputation with regard to contraceptive services. This can be attributed to the forced sterilizations that were carried out during The Emergency in the 1970s in India and the family target approach that was used until 1995 to ensure the sterilization of a sufficient number of women annually [131]. Moreover, there are several documents indicating the persisting medical coercion, that is to say conditional sterilization of women seeking abortion [132].

# Conceptual Framework

## Access – Expanding the 5 A’s Framework

### *The Definition of Access*

Access is etymologically defined as a way of approaching, reaching or entering a place [133], and can be translated to fit within a health care context as the opportunity or ease with which clients or communities are able to use appropriate services according to their needs [134]. Penchansky and Thomas turned access into an operational term within health care in the 1980s, and defined the concept of *access* as to represent the degree of “fit” between the clients and the health system [135]. Moreover, they identified five dimensions involved in the access to healthcare, determining the degree of fit, namely: affordability, availability, accessibility, accommodation, and acceptability. In more recent adaptations of this conceptual framework of access, the five dimensions have been elaborated and developed to emphasize the importance of context and patients’ ability to seek care [134, 136]. Access to health care should not only be the “fit” between provider and patient, the supply-side of access, but also the client’s opportunity to identify healthcare needs, seek healthcare services and to obtain or use the services in a way that fulfils the need of the patient, the demand-side of access [134].

In line with previous frameworks of access, Levesque and colleagues conceptualize access as the accessibility of providers, organisations, institutions and systems that provide approachable, acceptable, available and accommodative, affordable and appropriate health care services (*Figure 2*) [134]. However, they choose to go beyond the supply-side and define the demand-side as an equally important component of access by using the term ‘ability’. The demand-side of access constitutes the ability of populations, communities, households and individuals to access health care services at different levels along the chain of access (*Figure 2*). Health care systems cannot solely deliver health care services; they must also create a demand for health care services in their target population. Additionally, the services provided must account for quality and should preferably be tailor-made to fit their socio-cultural environment to ensure acceptability and feasibility where they are provided. In line with this concept, Levesque et al conceptualize five dimensions of accessibility of services and five corresponding abilities required to generate access to health care, as summarized in Table 3 [134].

Table 3. *The components of access according to Levesque et al – accessibility and ability* [134]

	<b>Component</b>	<b>Description</b>
The supply side: Accessibility	Approachability	People who face needs can identify that the service exists and impact the health/ address the needs of the individual.
	Acceptability	The cultural and social factors that determine the possibility for people to accept a service and the judged appropriateness for the persons to seek care.
	Availability & Accommodation	The physical existence of health resources with capacity to provide services, that health services can be reached both physically and timely, and the characteristics of the providers and modes of service provision
	Affordability	The economic capacity of people to spend resources and time to use appropriate services (direct prices and related expenses and loss of income)
	Appropriateness	The fit between services and clients need, its timeliness, the efficacy of the treatment provided and the quality of the care encounter.
The demand side: Ability	To perceive	The need for care/ health service, determined by health literacy, knowledge and beliefs related to health and sickness
	To seek	The concepts of personal autonomy and capacity to choose to seek care, the knowledge about health care options and individual rights that determines the care seeking.
	To reach	The personal mobility and availability of transportation, occupational flexibility, and knowledge about health services that would enable a person to physically reach service providers.
	To pay	The capacity to generate economic resources to pay for health services without catastrophic expenditure.
	To engage	The participation and involvement of the client in decision-making and treatment decisions – this dimension is strongly related to the capacity to communicate and notions of health literacy, self-efficacy and self-management in addition to the importance of receiving person-appropriate care, given the person's resources and skills

For the purposes of this thesis, the importance of considering gender structures is inevitable and hence, I have added a dimension of gender into the definition of access. The profound influence of power structures present in the context of this study, and in fact, in all contexts I dare say, must be acknowledged and highlighted. The influence of gender relations and structures on the ability to seek health care is central, especially in terms of sexual and reproductive health care (*Figure 2*).

#### *A framework for Access*

Obrist and colleagues developed a conceptual framework of access to health care in the contexts of livelihood insecurity in Tanzania [136]. The framework derives from Penchansky and Thomas's '5 A's of Access', however, it situates the 5 A's within both micro- and macro-environments. This framework takes into account the underlying factors that can influence health care

seeking and provision and argues that they have a substantial effect on access to health care, as well as the utilisation and quality of the care provided [136]. At the macro level, Obrist’s framework refers to policies, institutions, organisations and processes, and at the micro-level it refers to the vulnerability context, in terms of the natural environment that is for example prone to malaria endemics and unreliable agriculture. The policies and institutions, and the vulnerability context hence lay out the prerequisites for access to health care, both in terms of accessible health services and in terms of people’s livelihood assets, resulting in the access or non-access to care. Livelihood assets refer to the physical, social, natural, financial and human capital [136]; and can be seen as factors, which make up the prerequisites for individuals to access health care.

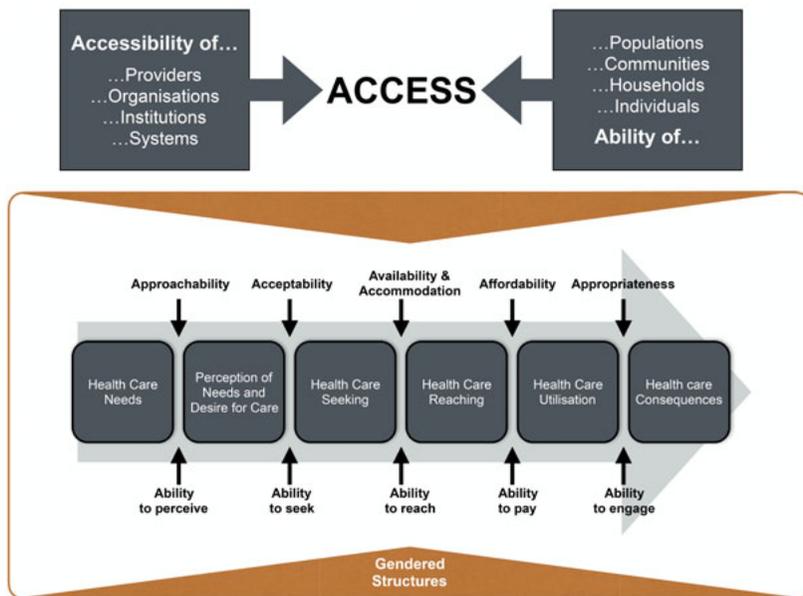


Figure 2. The definition of access considering the supply-side and demand-side and highlighting the influence of gendered structures. The definition is based on Levesque et al [134] and adapted by Paul.

Inspired by Obrist’s framework of access I have, for the purpose of this thesis, further developed the concept of access to fit the purpose of access to sexual and reproductive health care in a low-resource setting. By situating access in a larger context, I acknowledge the micro- and macro-structures and contexts that lay out the prerequisites for access to health care, as well as the importance of gendered structures (Figure 3). To simplify and make the framework more appropriate for the purpose of this thesis I chose to refer to the macro-level as that which includes policies, institutions and processes as governance; and poverty, educational attainment opportunities, gender and patriarchy as the vulnerability context. The policies and institutions affect

the vulnerability context and vice versa and together they lay out the prerequisites for access to health care.

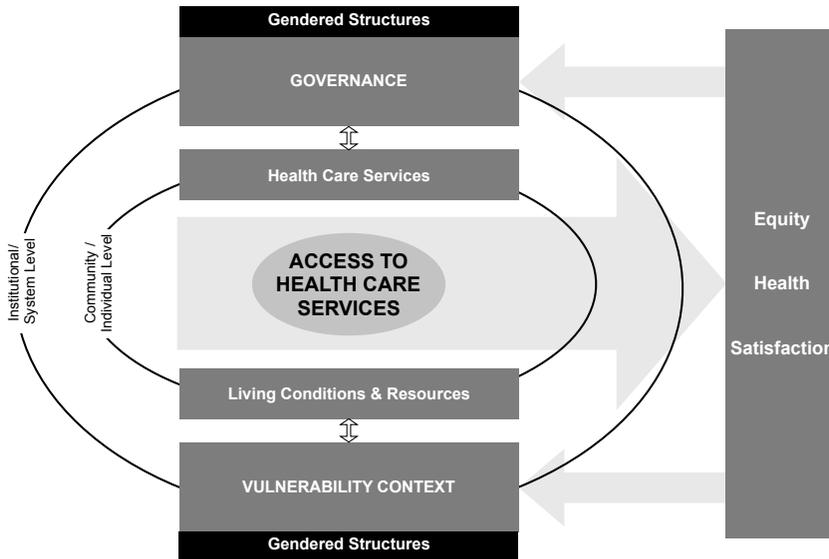


Figure 3. Framework of access influenced by Obrist et al [136] and adapted by Paul for the purpose of this thesis.

Moreover, I chose to exchange the livelihood assets with ‘living conditions and resources’ that are made up of different dimensions including: human, socio-cultural, physical and financial dimensions, as explained in Table 4 and are closely related to the concept of social determinants of health.

Table 4. The dimension of ‘living conditions and resources’.

Dimension	Explanation
Socio-cultural	Social norms and values, appearance, social mobility and means of communication. The existence of social networks and affiliations.
Physical	The presence of infrastructure, means of transport
Financial	In terms of cash or credit available at your dispense
Human	The local knowledge, educational attainment, personal skills

I do this because there is a substantial need to understand the micro- and macro-dimensional facilitators and barriers to health care access in a low-resource setting where several directly- and indirectly-related dimensions of society influence access and health-seeking behaviour. In addition, this thesis’ focus on abortion and contraception – services that are crucial for women to attain their sexual and reproductive rights – calls for the explicit, rather than implicit, inclusion of a gender dimension in the framework.

# Rationale for the Thesis

This thesis originated with the idea to implement simplified follow-up after medical abortion, shown to be effective and feasible in the Nordic setting [79], in a low-resource setting where it may act as a crucial determinant of access to safe abortion services. It is equally important to carry out such studies in a low-resource setting such as India, where women are often referred to as incapable and as victims of patriarchy due to their lack of formal education and their limited autonomy [137]. Moreover, the little use of modern contraception in India, especially among young women, must be understood and addressed to avoid unintended pregnancies and adverse health outcomes as an effect of frequent, or early pregnancies. It was hypothesised that this thesis could contribute by providing important evidence to support the acceptance that women in low-resource settings have the capacity to understand their own bodies and take charge of their reproductive health by using the examples of simplified follow-up post-early medical abortion and contraceptive use. So far, studies related to simplified follow-up post-early medical abortion are from high-resource or urban settings and have required the participants to own a phone, be literate, have access to proper infrastructure such as road connections and the presence of readily accessible emergency care [73, 78, 138]. This thesis attempts to reach out to the women who belong to the lowest socio-economic strata, and who exist and cope within a patriarchal context. This thesis addresses the women where we have seen the least improvements in terms of maternal health and gender equality and it contributes with important evidence for the implementation of the Global Strategy for Women's, Children's and Adolescents' Health [5, 6].

And why is there all this morbid anxiety about female purity? Have women any say in the matter of male purity? We hear nothing of women's anxiety about men's chastity. Why should men arrogate to themselves the right to regulate female purity? It cannot be superimposed from without. It's a matter of evolution from within and, therefore, of individual self-effort.

- M. K. Gandhi

# Aim

The overall aim of the thesis is to identify means to simplify and to increase access to reproductive health in low-resource settings with a focus on medical abortion and contraception and by including the perspectives of the health system as well as the community.

The specific objectives of each study are:

## Study I (Paper 1 & 2)

To establish the efficacy, feasibility and acceptability of self-assessment two weeks post-early medical abortion using a low-sensitivity pregnancy test and a pictorial instruction sheet compared with routine clinic follow-up, two weeks post-abortion.

## Study II (Paper 3)

To compare contraceptive use at two weeks and three months post-simplified, home-based, medical abortion with standard, in-clinic, medical abortion, and to investigate factors influencing overall contraceptive use.

## Study III (Paper 4)

To explore young recently-married women's reproductive desires and choices, their opportunities to access reproductive health services, and attain their sexual and reproductive rights in a low-resource, rural setting.

# Material and Methods

This thesis consists of both qualitative and quantitative study designs. The main study (Study I) is a randomized controlled, non-inferiority, trial (RCT) designed in accordance with the Consolidated Standards of Reporting Trials (CONSORT) guidelines for non-inferiority RCTs [139]. Study II is a cross-sectional study derived from the RCT to investigate post-abortion contraception use at two weeks and three months post-abortion and, finally, to gain a deeper understanding of the context and to understand how young men and women use reproductive health services in the area where we conducted a qualitative study employing in-depth interviews (Study III). The methods section will be presented in three sections to describe the RCT, the cross-sectional study and the qualitative study individually. Table 5 shows the design, method and participants for each study.

Table 5. *Summary of Methods*

Study design	Participants	Measurements	Data analysis
I Non-inferiority randomised control trial	Women seeking abortions with a GA* $\leq$ 9 weeks, who adhered to medicine regimen, and followed-up at 2 weeks ( $n=623$ )	Acceptability & future preference of follow-up. Experience vs. expectation. Overall satisfaction. Feasibility.	Chi-square test Bi- & Multivariate logistic regression
	Women seeking abortions with a GA* $\leq$ 9 weeks who were followed-up at 2 weeks, complied with the medical regimen and with known abortion outcome ( $n=700$ )	Abortion outcome, Adverse events and extra visits. Feasibility of test.	ITT* & ES* analysis Chi-square test Independent t-test Bi- & Multivariate logistic regression
II. Cross-sectional study	Women seeking abortions with a GA* $\leq$ 9 weeks who were followed-up at 2 weeks and a sub-sample of women followed-up at 3 months ( $n=114$ )	Previous use of contraception, contraception remembered at follow-up, contraceptive method opted for and initiation of method.	Chi-square test Bi- & Multivariate logistic regression, ITT* & ES* analysis, KM* Survival Analysis
III. Qualitative in-depth interviews	Recently married/cohabiting women aged 18-24 ( $n=19$ )	N.A.	Thematic analysis

\* ES = Evaluable Subjects, GA = Gestational Age, ITT = Intention to treat, KM = Kaplan-Meier

## Study Setting

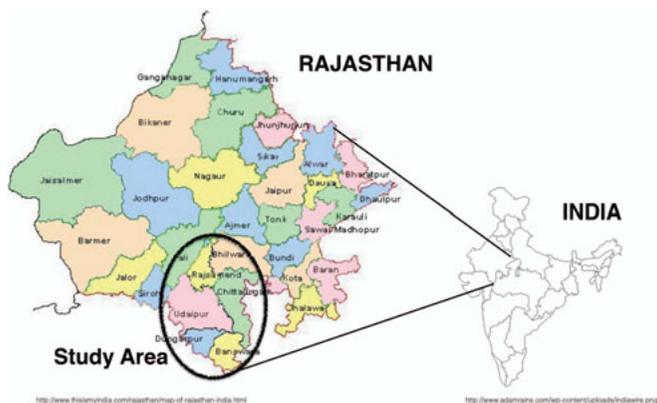


Figure 4. Map of India, and Rajasthan encircling the three districts where the studies were conducted, with the focal point in Udaipur

### Rajasthan – “the Land of Kings”

Rajasthan is one of the nine high-focus states of the Indian Government due to its relatively high fertility and mortality rates [140]. Rajasthan is commonly characterized by strong gender disparities and a patriarchal culture [141–143]. The overall effective literacy rate among people aged six and above was 74% in 2012, however, with great variations between male (86%) and female (61%), as well as among urban (male 94% and female 79%) and rural (male 84% and female 56%) populations. In recent years, more children enrol in schools, however, few complete more than 8 years of schooling [140]. A major reason for early dropout is early marriage, especially for girls, and early marriage is still common in Rajasthan. The median age at first marriage is 15 years for women and 65% of women aged 20–24 years at the time of the survey married before the legal age of 18 [144]. A more recent survey suggests the mean age of marriage to be 20 among women and 22 among men, with slightly lower means in rural areas [140]. Rajasthan is largely rural (71%) and livelihood depends on agriculture. The population of Rajasthan belongs to a variety of social groups, where 19% of households belong to schedule castes (SC), 15% to schedule tribes (ST), 22% to the Rajput social group, and 45% to other backward castes (OBC). The average household comprises five members [145].

### *Reproduction & Family Planning*

Among women aged 15–19 years, 36% were already mothers at the time of the survey [140]. The TFR in Rajasthan is continuously decreasing and was estimated to be 3.0 in 2011. In spite of this decrease, it remains 25% higher

than the national average TFR (2.4), putting Rajasthan in the bottom five states as per TFR estimates [146]. In the annual health survey from Rajasthan (2012-13), the total contraceptive use was reported as high as 70% among currently married women; and 62% of all married women used a modern contraceptive method. Moreover, female sterilization is still the most prevalent method and accounts for contraceptive use among 48% of all married women, while only 1.3% use copper-IUD, 2.3% use combined oral pills and approximately 10% use condoms [140]. However, judging from other data sources and scientific publications, the numbers presented in this annual health survey are likely to not represent the reality. Female sterilization is mainly provided by public health facilities, and women receive a monetary incentive to have the sterilization [142]. Traditional methods, such as periodic abstinence, withdrawal, lactational amenorrhea and contraceptive herbs represented 7.8% of family planning methods used. The overall unmet need for family planning in 2012 was 13%; 7.3% among women who wanted to space children, and 5.7% among women who did not desire more children [140].

There is an existing preference for sons in Rajasthan, visible in women's fertility preferences as presented based on the National Family Health Survey (NFHS) 2005–2006. Women with two sons (84%) were more likely to want to limit childbearing as compared to women with two daughters (33%) [140]. In addition, the female-to-male ratio in Rajasthan is 921:1000, and the child sex ratio is 883 females to 1000 males aged 0–6 years, according to census data from the Government of India (2013).

#### *Maternal Mortality and Morbidity*

The maternal mortality ratio is higher in Rajasthan (255) than in India as a whole (178) and in 1998, abortions were estimated to cause 35% of Rajasthan's maternal deaths, while another study from 2004 suggests that abortions account for 18% of maternal deaths [101, 102, 146]. Interestingly, the most recent health survey from Rajasthan carried out in 2013 suggests that only 3% of pregnancies result in abortions [140]. This is unlikely, and suggests that the existing data with regard to abortions must be questioned.

#### *Abortion Service Provision*

An assessment of the abortion services in 10 districts of Rajasthan showed that 39% of the community health centres and 0.5% of the public health centres provided MTP in 2007-2008 [142] and that an average of only 35 doctors have been trained annually since 1971 [147]. The density of certified private facilities was reported to be 0.67 per 100 000 people in 2002, however, the distribution of these were skewed to certain districts where the urban areas had a much higher abortion service density than the more remote areas. The same study reports a slow certification process in Rajasthan (14 months) and applications need to be submitted several times [142].

## Udaipur City and Surroundings

All studies took place in and around the City of Udaipur, in southern Rajasthan (*Figure 4*). The qualitative study was conducted only in the rural areas while the RCT and the cross-sectional study was conducted in both rural and urban areas, concentrated in the six clinics used as study sites and described in detail below. A majority of the rural population in this area belong to the ST social group, commonly presumed to have a similar social status as the SC social group that used to be referred to as ‘untouchables’ or Dalit [148]. However, due to their historic underprivileged socio-economic status and subsequent poor health, the Indian Government have increased their efforts over the past decades to improve the socio-economic status of these marginalised groups. The Rajput social group also resides in the study area. Rajput is traditionally known to be the royal warrior caste, whose members, in contrast to the ST social group, benefit from a high social status and commonly comprises landowners. The Rajput culture is typically patriarchal and Rajput women often experience elevated restrictions on their autonomy and are rarely allowed to contribute to the household economy. The ST group rarely own land; instead, they work as labourers on a daily wage or migrate to the bigger cities to conduct heavy body-motor work or cleaning work. Both men and women can work and contribute to the family economy, although women sometimes stop labour work after marriage [149]. The rural participants in our studies largely belong to one of these two social groups. However, other social groups are also present in the study area, for example, the OBC social group.

The area where the in-depth interviews took place and where the rural study sites are located is in the Araveli mountain range and is characterized by poor road connections, poverty, and lower literacy than the state average, particularly among women. Our collaborating partners, ARTH, a non-governmental organization (NGO), operates three rural primary health care clinics focusing on maternal and child health and have been operating in the area for the past 20 years. A gynaecologist comes once or twice a week to the rural clinics, which are otherwise staffed by specifically-trained nurses. The facilities are certified abortion providers and the organization is working to increase access to and awareness of sexual and reproductive health services in the area [149].

## Understanding the Context (Reflexivity)

My time in Rajasthan was a learning process in many ways; the unofficial observations and conversations contributed to an understanding of the cultural practices, the social norms, the traditions and how these influenced SRH practices and gender structures. I would like to reflect upon how I came

to these understandings to create a more transparent picture of my perception and for the reader to understand what may have influenced the interpretation of the data as well as to fulfil the requirements of reflexivity when conducting qualitative research.

I experienced numerous encounters with: the young women working in their homes, the fields or at the building sites; the men who had migrated but were home for 'Diwali'; the women seeking abortion and those seeking other health care services in the rural clinics; the village health workers (VHWs) assisting to find study participants; the urban pharmacists; the rural traditional doctors; the nurses and doctors working in the rural and urban study sites; the car and motor cycle drivers who took me to the very remote villages; the Aanganwadi workers; and the mother-in-laws in the households' where we carried out study visits. Through these encounters, the persons who taught me the most were my colleagues working together with me in the field, especially my faithful companion and friend Sunita, with whom I discussed experiences, conversations and observations, along with the four research assistants Pushpa R, Pramilla, Rekha and Pushpa S, who together made up the backbone of the project. We drank numerous cups of sweet 'chai', sat down on the floor together to share each other's lunch boxes – well, only a few dared to try my home-cooked food but I was always encouraged to try theirs and it was always delicious – and spent hours walking in the field in our search for study participants. This time was well spent and gave us the opportunity to discuss the field-experiences as well as personal experiences.

I learnt about the cultural practices of: arranged marriages; simultaneous marriages, or *watta satta*, when a brother-sister pair from two households marry; cohabitation initiation, or *gauna*, when the wife officially moves in with her in-laws; and divorce, or *nata pratha*, the opportunity for a spouse to choose another partner as long as the partner left behind is paid a fee. This is more often practiced in cases of domestic violence, infertility or extra-marital affairs and must be approved by the community leaders and the family members. We would discuss the significance of *purdah* – often explained as women covering their faces to show respect, however, I also learnt that it was a way for the women to protect themselves from father in-laws and allowed them to create a personal space in the otherwise very intimate household settings. We talked about menarche, pre-marital relationships, and personal experiences of marriage, the first pregnancy and the difficulties of being a mother while pursuing a working-career. They were equally interested in listening to my stories and the customs in Sweden with regard to marriage, relationships and childbearing.

Throughout my fieldwork I observed gender dynamics, and developed a better understanding for why health care counselling and informed choice in the 'western' format may not necessarily be effective in this context. Moreover, I learnt how to address sensitive topics, what words to use and the little

things that facilitate in building trust during my interviews. Yet, conducting interviews, as was the purpose of the qualitative study with young women and men, and for the adaptation and implementation of the RCT, was challenging. However, particularly challenging was to encourage the young, recently-married women to reflect on their life-situation, their life expectations and their behaviour and choices. I was often told that I should know, that I am the educated one. Sometimes, the women replied with a long silence while covering their face with the sari, to retreat into their comfort zone. Some topics were easier to talk about than others, for example, when I asked women who had given birth to children about their childbearing experiences and about pregnancy, they would talk freely, and they were proud of their achievements. If I instead asked about how they would plan their family, and avoid unintended pregnancies, they would look at me and say: *just like that*, expecting me to know what they were referring to. Eventually the participants lowered their guard, gave into my ‘stupid questions’ and realized that I actually did not know the things I was asking about. After we had been laughing together at the hardship of being a woman, the mean mother-in-law and the stigmatizing community, and remembering how it was to escape from the first sexual encounter with our husband because of not knowing what was expected of us, we could get down to business. Now, being an unmarried, childless woman born and raised in Sweden I was, of course, limited in my understanding of these things, let alone what was so funny about them. Carrying out interviews with men was easier, however, it required a similar procedure, although I was not expected to be a part of it in the same way as with the women’s interviews. Instead, my interpreter, Jignesh, did a wonderful job in making the men feel comfortable, laughed at the right times and made a few jokes on my ignorance of their culture and hence all of my questions.

During the implementation of the RCT, I spent time in the clinics to understand the fit of the intervention and study procedures. I observed the patient encounter, the consent-taking and the study recruitment procedure as well as how the research assistants explained the intervention to adapt the intervention to the study setting. However, what struck me the most in my observations was the casualness with which the women sought abortions. They came in to the clinic, commonly with a child on the arm, and asked for an abortion. After the encounter with the doctor they were given the pill [mifepristone] over the counter in the dispensary among all other patients, they took it and stayed for 30 minutes before they left, and that was that. I remember telling my colleagues that maybe these women needed support in their decision or during administration of the pill, that maybe the decision of having an abortion was difficult. My colleagues looked at me and asked: *Why? She knows that she does not want the pregnancy. There is no need to talk about it.* Unfortunately, the efficiency and lack of privacy left little opportunity for comprehensive contraceptive counselling; the doctor mentioned

it briefly in their encounter, however, most emphasis was placed on the subsequent clinical visits, especially day three when the woman would spend several hours in the clinic, if she did not administer misoprostol at home. Important to point out was that a lot more consideration and caution was taken if the woman was young, had no previous children or was unmarried. A practice I doubt would occur in the public health system, judging from my personal observations and from the discourse around the public hospitals. Still, during my time in the clinics I only met one unmarried woman and a few nulliparous women.

I asked whether any of the women seeking abortions were tested for STI; they were not. In fact, I was told that there were no such problems in this area, or in India in general, and that the clinics did not offer such tests. I did some more fact-finding and there seemed to be no clinics in Udaipur that provided STI testing; if necessary, blood samples would be sent to the nearest large city for analysis. Interestingly, in the field, I met women who asked about STI-like symptoms such as smelly or white discharge. They would come to ask for our advice and told us that they had not had any tests done, but that the doctor had prescribed a whole range of pills and antibiotics for them to take. However, they had not been informed about the disease, nor that they could transmit the disease if they had unprotected sex before finishing the antibiotic course. In general, women were poorly informed. Most women who I met during field visits explained how they had not received information about their health, returned fertility and contraception post-partum and post-abortion. However, when we explained the study intervention to the women who were recruited to participate, they were often keen to know more and appreciated being involved and empowered in how to assess their abortion outcome and their side effects. Evidently, women were successful in assessing their abortion outcome and returning to the clinic in a timely manner and, from my personal experience, these findings are not surprising at all.

What really made an impression on me during my time in the field was the strength, the persistence and the resilience of the people I met. These qualities were apparent, despite men feeling the immense pressure to earn money, the hardship of migrating to the cities as young boys, leaving their families behind and living in poor conditions far away from what is known to them; and the struggle of attaining education for girls, especially when all the other girls dropped out to get married and when the commute to school suddenly became dangerous after menarche; as well as the men and women's fear of marriage and their desire to be allowed to be children rather than taking on the responsibilities of society and the social expectations that came with marriage, the pressure to conceive and the responsibilities of being a parent. However, when talking to these people, their future aspirations gave me hope. In my encounters, the fading son-preference; the intention to educate a future daughter, the desire to give her a better childhood than their

own, and to delay marriage until the age of 18, preferably later; came forth. Importantly, my first impression of the inactive women with no attempt to fight for their rights and no aspirations for the future was exchanged with a new image of hope and resilience. It took me some time to understand that this was exactly the women's strategy, to fight from within, to use their 'agentic' opportunities in a strategic way by appearing to adhere to the social norms and fulfilling every expectation, while at the same time overcoming everyday battles to create more autonomy, to mark their territory within their new family setting and to claim grounds and respect, little by little. Moreover, the partnership between husband and wife, the importance of looking out for each other and supporting each other came forth strongly, especially from the men's interviews. I needed to spend several months and really dig deep before discovering this spousal partnership, and due to its cautious appearance, it is missing in the literature, in the health care encounter and in the policies aiming at creating a sustainable future.

In addition to my professional experiences and my field observations, I gathered experience and perspectives in my spare time, interacting with colleagues, and men and women residing in Udaipur city, both local and international. However, given the relatively small size of the city, social activities and opportunities to meet people were limited. I either spent time with my housemates – I lived outside the city centre in a house where young, unmarried, men and women from different parts of India, working in one of the big NGOs in the area, resided – or I met with other international volunteers, NGO workers or researchers. However, the activity that gave me the most insights into the urban culture of Udaipur was playing football a few times a week at the field club, together with a mixed group of boys and men. I was the first woman, however by the time I left Udaipur there were a few new recruits, and some of them girls.

I would like to spend a moment to explain the cultural clashes between traditional and contemporary values and practices and the positioning of young women and men in a changing society. I will do this by sharing an extract from my personal diary that I kept during my time in Udaipur. This was one occasion that I find illustrates the cultural clashes, the inner struggles and young women's battles with culture, social expectations and personal aspirations. I wrote this when I had just returned to Udaipur after having spent a couple of months in Sweden:

Upon my arrival in Udaipur, I arrived straight into the Indian controversy by attending the Rajput bachelorette party of an acquaintance. Traditionally this party would be called sangeet, and would be held at the bride's house with only participants from her side of the family. However, today the sangeet has evolved and can take the shape of what is referred to as a bachelorette party where both friends of the bride and family are welcome. The party may be hosted at home, however more often at a resort nearby. Unfortunately, the bride is not supposed to leave the house after the official initiation of the

wedding ceremonies that are initiated earlier on that same day, because tradition says that this brings misfortune. However, after some persuasion, this bride had gotten the permission to attend the party by her mother. The party hosted both men and women of different ages however largely the same social group. Upon my arrival I soon identified three groups of women, stratified by age and marital status. The married women who attended the party with their husbands all wore Sari and did not drink alcohol. The men were mixed, some in 'western' and some in traditional wear. The second group of women were 'the career women' as I call them and none of them wore a sari. However, they were all decently dressed, some in traditional and some in 'western' wear. One woman used to work as a lawyer but had stopped to increase her chances of getting married. Two of the other women were either studying or working and preferred to live in a different area of India, partly to escape from marriage proposals and family. This second category of women had quite an attitude and they seemed to really have their guard up to protect themselves from prejudice and social expectations. When I asked them about what they do and what they had studied they told me with enthusiasm about their degrees and work. We kept on having this conversation until one of the married women sitting at our table interrupted. She explained that it is pointless to get educated as a woman here because once they get married they will not be able to use their education but will all be housewives, and so education is a waste of time and money. She did however appreciate some areas of work that were suitable for women even after marriage. The unmarried women said nothing, so I eventually continued to ask about one of the women's previous jobs that I found particularly interesting within the field of domestic violence and cases where the woman wanted a divorce. However, to have the right to divorce in India, she explained, the woman needs to invoke abuse or violence, something that is quite difficult to do. She further proudly announced that she had managed to persuade the women to stay with their husbands, regardless of their abuse since the women's chances to win the court case were so small that taking the case to court and risking failing would result in more serious family and social consequences for the woman and probably put her in a worse position than before. The lawyer however found the work too hard, and shifted to a job, she found was more suitable for a woman and she explained that it would make her more desirable to marry. The last group of women were the youngest women. They arrived at the party in cocktail dresses and called for attention from both women and men. To my surprise the married women at my table expressed that they too wished to dress like that sometimes. The unmarried women had no desire to dress like that and agreed that it would be too cold and uncomfortable (it was winter). However, the whole table stared intently at the girls while having this conversation. The girls started to get uncomfortable and decided to leave the party. When they returned an hour later they were all dressed in beautiful traditional clothes.

This is one example that illustrates the spectrum of socio-cultural norms and values and how it may vary in different settings. Moreover, it highlights the difficulties of finding your role as a young woman in a changing society.

In summary, all my experiences from my time in India, combined with my previous understanding of the Indian culture, given my background and

the numerous visits to India throughout my childhood, have fed into my interpretation of the data and have influenced my suggestions for health system implications and interventions to improve access to essential health care. If I were to summarize my lessons learnt in one phrase it would be: Women in this context are resilient strong individuals with a lot more capacity to give than their society allows them to.

## Randomised Controlled Trial (Study I)

### Study Rationale and Design

This non-inferiority RCT aimed to establish the efficacy of home-assessment after a medical abortion as well as the acceptability and feasibility of the intervention in a low-resource setting. We hypothesized that home-assessment after medical abortion would be as effective as routine clinic follow-up and would increase women's acceptability of medical abortion in a low-resource setting. The study protocol with the adaptation of the intervention has been published separately [150].

### The Intervention

The intervention in this study was inspired by previous research showing the clinical feasibility of women's self-assessment of abortion outcome using a LSPT at home two weeks post-early medical abortion and followed up by a phone-call from a trained health care provider, in a high-resource and urban setting [71, 77]. Additionally, recent research from the Nordic countries suggests self-assessment with an LSPT to be as effective as in-clinic follow-up [79]. For the purpose of this study, we used the previously proven interventions as a springboard and adapted it for a low-resource, primary health care setting in both urban and rural areas using study sites that primarily cater to underserved and marginalized populations. Women were instructed to use and interpret the LSPT with the help of a specifically developed and validated pictorial instruction sheet (*Figure 5*). Additionally, women were instructed how to distinguish expected side effects from danger signs and when to seek emergency care. In addition to LSPT use, the pictorial instruction sheet illustrated potential danger signs post-medical abortion and provided contact details in the case of an emergency.

### Intervention Adaptation and Pilot Testing of the Study Protocol

Before initiation of the study, we adapted and field-tested the intervention as well as the study protocol to ensure contextual feasibility. Primarily we evaluated the counselling around the LSPT use and interpretation including



of accurate information in relation to each question without answering to the question. This was summarized in the standard operating procedure on how to fill in the research questionnaire. Finally, we tested the obtaining of informed consent, as most participants could not read the full information sheet. This resulted in adopting the strategy that a research assistant administered the information verbally while simplifying the text to make it more understandable without losing the important ethical and rights aspects. The women's consent was subsequently obtained through either a signature or a thumbprint if the women agreed to participate.

The pilot was carried out in stages and we started by testing the intervention arm. We assigned all eligible women who agreed to participate ( $n=33$ ) to assess their abortion outcome at home. At the time of follow-up, the research assistant interviewed the women regarding how much they had understood from the different study components (the taking of informed consent, the counselling in relation to home-assessment, the pictorial instruction sheet) and whether they felt safe to participate in the study. The results of this stage of the pilot made us revisit the design of the counselling and apply a more interactive counselling method, using a LSPT prototype when explaining the intervention and subsequently asking the women to explain to the research assistant what they had understood from the instructions by explaining the side effects, warning signs and how to interpret the test while pointing to the pictorial instruction sheet. Conducting the counselling in this interactive manner increased the understanding and the confidence of the women to conduct the self-assessment.

During this exercise we also assessed the means of follow-up and found that the majority of rural women did not own a phone of their own and required a home visit. However, to maintain the confidentiality of the women in the study, we had to carry out home visits with great caution. Therefore, we adopted the technique of 'camouflage visits' – for each woman we followed-up at home for the purpose of the study, we visited at least two other households in the same village or hamlet. This was an attempt to remove the attention brought to the women we visited, and appear to be a normal community outreach programme informing households about family planning methods and vaccination programmes for children. In addition to protecting the women in the study from unwanted attention and potential stigma if someone found out about their abortion, we managed to counsel women in several households on essential reproductive health services as well as benefit from informal conversations and increased contextual understanding to situate the findings from this study. We also developed a protocol for the research assistants on how to react in different situations when visiting the women, for their own and the women's safety. For example, if any other family member or neighbour came into the room during the interview, the research assistant would immediately change the topic. If privacy could not be achieved during the interview the research assistant would re-

turn at another time or arrange to meet the woman elsewhere at her convenience. However, for some women, neither the phone call nor the home-visit was a feasible means of follow-up, and these women preferred to return to the clinic for follow-up. As a result, we developed a ‘research assistant-only’ in-clinic visit where women would return to the clinic on the day of follow-up, after having carried out the home-assessment, to meet with the research assistant and give the exit interview. Moreover, routes of referrals were tested and streamlined in the case of warning signs or a positive LSPT.

Once the research tools and the intervention group were piloted, we initiated a pilot with the control group and recruited 36 women to have a clinic follow-up after their early medical abortion. The women in this group had two to three clinical visits and the follow-up visit took place in the clinic after 10–14 days of mifepristone administration. Experience from service provision in the area indicated that a large proportion of women did not come back for follow-up post-abortion. Because our primary outcome measure was the follow-up, it was essential not to lose too many women to follow-up, and we put great efforts into understanding how to motivate women to return for follow-up. Among the women in the pilot study, there were several women who did not return and hence we contacted them to find out why and what we could have done differently to ensure their return. The most common reasons for dropping out were the lack of transport, lack of time and loss of income if the husbands had to take them to the clinic. Moreover, women expressed that it was difficult to justify leaving the house too often, and that they needed permission to leave the house from in-laws and husbands, or they had to come up with reasons to leave the house if the in-laws were unaware of the abortion. Finally, women did not always see a reason to return unless they were suffering side effects or they thought the abortion was incomplete. In an attempt to bridge some of the first reasons and to motivate the women to return, we asked the women whether a travel reimbursement would help to motivate their return to the clinic. The answers were ambiguous, however, some were receptive to the proposal and, after piloting the reimbursement scheme in combination with personal reminders by VHWs and research assistants, phone calls where applicable, and comprehensive counselling emphasizing the importance of returning to the clinic, we managed to increase the number of follow-up visits.

## Eligibility Criteria

We approached all women who requested a medical abortion at any of the six study sites before the end of gestational week nine, as assessed by an obstetrician, for participation in the study. Women had to reside within the identified study area consisting of 70 villages in a range of 25km from the rural clinics (at the rural clinics only) and agree to follow-up after two weeks, by either phone or home visit, to be included in the study. Women

were excluded if they had any known contraindications to medical abortion, a haemoglobin-value less than 8.5 g/l or where they were younger than 18 years.

## Study Sites

The study was carried out in six primary health care clinics; three in the rural areas as described above, and three in the urban areas of Udaipur City (*Figure 4*). The NGO, ARTH, operated four of the clinics (three rural and one urban) and catered mainly to women from the lower socio-economic stratum in both rural and urban areas. For the purpose of the study, we identified two private clinics in Udaipur City that were willing to participate as study sites. Due to the controversy around abortion attached to the heated sex-selection debate at the time of study initiation, it was difficult to approach private clinics to inquire about their abortion services. In fact, most clinics denied that they provided abortions and we had to recruit through personal contacts and previous collaborations. The two private clinics that were recruited cater to women from a wider range of socio-economic background than that of the NGO, however, one of the clinics does place an emphasis on women from a lower socio-economic level. For the purpose of the study, we reimbursed the clinics for any additional costs and subsidized medical abortion by providing the clinics with the “combi-pack” (mifepristone and misoprostol) for medical abortion provision.

## Data Collection and Study Protocol

### *Study Recruitment*

Four research assistants were trained to carry out participant recruitment, including the taking of informed consent, data collection by using structured questionnaires, follow-up visits or phone calls, and the keeping of registers and log-books. We allocated one research assistant to each rural site and one research assistant to manage all three urban sites. The reason for having one research assistant managing all urban sites was due to smaller case load at the urban sites, lesser travel distances, better means of transport and more women having a phone. To avoid the potential issue that women felt obliged to participate in the study, and to avoid any selection bias, the first care-encounter occurred before study recruitment. At the care-encounter, the doctor assessed the women’s eligibility for medical abortion – not study participation – and administered mifepristone. In addition, the doctor and woman decided together where the administration of misoprostol would take place – at home, or in-clinic – depending primarily on the woman’s wishes and the doctor’s clinical assessment. A research assistant subsequently counselled all

women who received mifepristone and assessed their eligibility for study participation.

#### *Randomisation Procedure*

Research assistants randomised eligible women who had agreed to participate in the study to either a home-assessment group or clinic follow-up. The randomisation sequence was generated in blocks of six by a random number generator (Random Allocation Software 2.0) and staff, not involved in the study, prepared the sealed, opaque envelopes that were used during randomisation. Each envelope had a unique four-digit number, and to create the personal identification number for each participant, a study-site specific letter (A-F) was added in front of the number sequence, upon allocation. The study sites received envelopes according to need, however, with blocks of randomisation kept intact to ensure equal distribution in all study sites, and each study site kept a register of their recruited study participants. When the randomisation was completed, research assistants provided women with detailed instructions for the follow-up procedure according to group allocation.

#### *Day 3 – Misoprostol administration in clinic*

A nurse-midwife or a doctor supervised the women who returned to the clinic for misoprostol administration. The clinics retained women under observation from between one and four hours depending on the study-site's standard procedure, and the practitioner and the woman's availability. Side effects were recorded, however, pelvic examination for confirmation of outcome was not considered to be standard procedure. The flow of the study is illustrated in the flow chart below (*Figure 6*).

#### *Follow-up at 2 weeks*

Follow-up occurred 10–15 days after the medical abortion. For the intervention group, the research assistant recorded the result of the LSPT as reported by the women. Questions of side effects, complications or extra visits were recorded as per the women's report. Women with a positive LSPT were advised to return to the clinic if they had not yet been. In addition, if the woman reported any complications or side effects, the research assistant advised her to return to the clinic if she felt the need to return. Women who were assessed as having a complete abortion at the time of follow-up, based on the LSPT, were censored out of the study and defined as successfully followed-up. However, clinical records were monitored in case of any adverse events or additional procedures in relation to the abortion up to one month after the abortion. The women with a positive LSPT who did not return to the clinic were contacted to confirm their abortion outcome. Women in the clinic follow-up group were treated according to the routine practice of each clinic at 10–14 days after mifepristone administration. A doctor, using pelvic examination only where necessary, assessed the abortion outcome. The final inter-

view addressing interim visits, abortion experience, acceptability and contraception was the same for all women and was carried out in conjunction with the abortion outcome assessment. In addition, clinical data for women who came for interim visits were extracted from clinical records to inform of any additional medical interventions and for the women who were not successfully followed up at two weeks, they were contacted to confirm their abortion outcome and whether any additional interventions were needed.

### *Data Management*

Research assistants used paper questionnaires to collect data, and were responsible for ensuring the accurate completion of questionnaires, including the sections filled in by the clinical staff. All recruited women were recorded in a study site-specific registry, and all women who were screened as ineligible were also recorded, to keep track of the profile of excluded women. The questionnaires were kept in folders at the study sites until women were censored out of the study, either upon completion or upon being lost-to-follow-up. Questionnaires were collected from the study sites and transported to the coordinating office on a regular basis. All questionnaires were coded manually before data entry and my colleague and I carried out random quality checks of questionnaires to ensure accuracy in response and coding. Upon determining errors, discrepancies or uncertainties, research assistants were called upon to resolve the query and, if necessary, the form was sent back to the study site for correction and clarification. The study site-specific registry was copied to a master registry once a month and that was kept in the coordination office.

Data entry occurred continuously throughout the study process. The database and the data entry program were developed for the purpose of the study using Structured Query Language (SQL). Double data entry was applied to minimize errors and potential bias and, together with the programmer, we developed a query program to avoid logical and structural errors. Queries were continuously addressed on a monthly basis by confirming the data entry with raw data and if there was a discrepancy in the raw data, research assistants were called upon to resolve the discrepancy or uncertainty. In addition, we held monthly meetings where we discussed deviating cases or cases that were difficult to categorise according to the structured questionnaires and a joint decision was met before data entry occurred.

Once all data were entered, the dataset was exported to SPSS where my colleague and I carried out the final data cleaning. Again, upon identifying any discrepancies, queries were listed to verify these with the raw data and subsequently make corrections in the master data file that was then exported to SPSS for further cleaning and analysis.

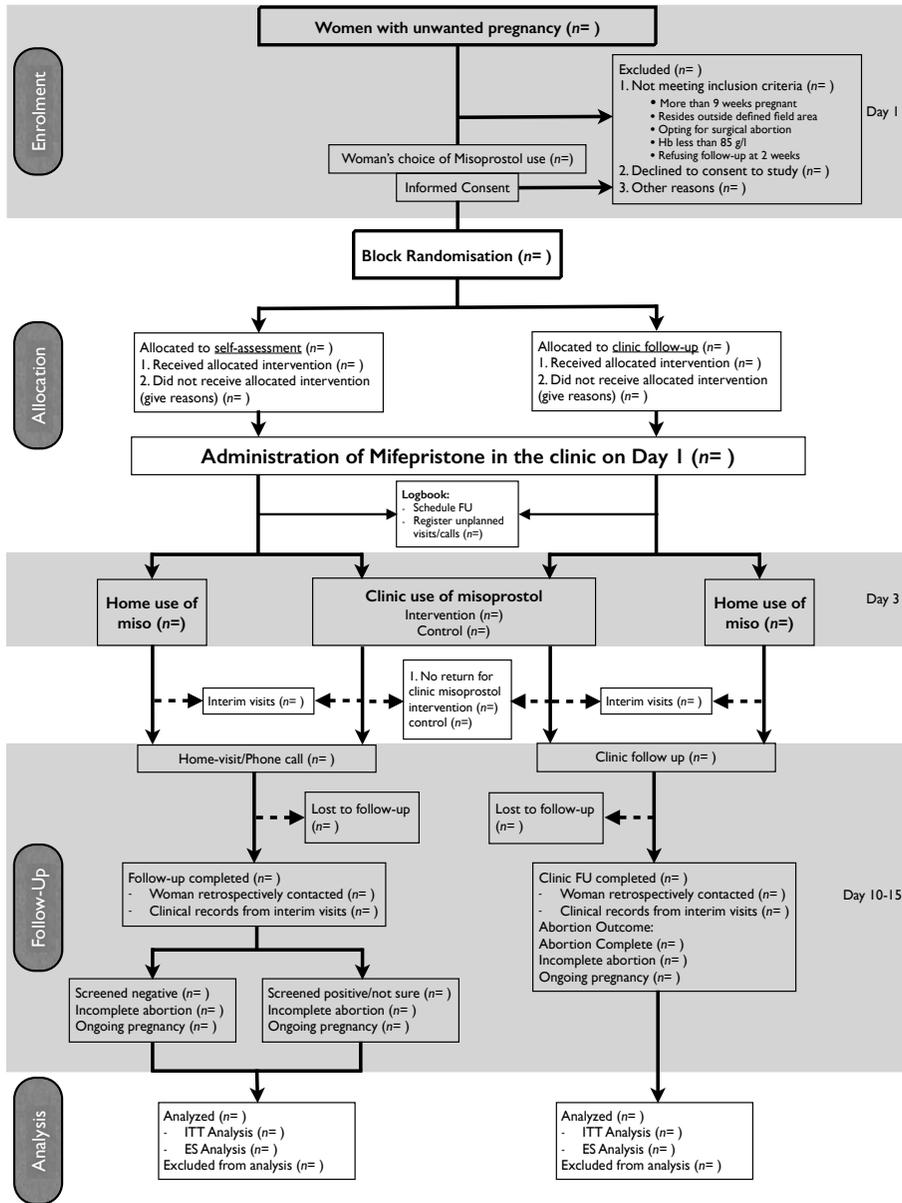


Figure 6. A flow diagram of the study illustrating the flow of women through enrolment, intervention allocation, treatment, interim visits, follow-up and abortion outcome and analysis. ITT = Intention to treat and includes all women who were randomised. ES = Evaluable subjects and includes all women who adhere to the medical protocol and where the outcome was known. FU = Follow-up.

## Outcome Measures

The **primary outcome** was the efficacy of the home-based outcome assessment. For the purpose of this study we defined efficacy as complete abortion without continuing pregnancy, the need for surgical intervention or additional mifepristone and misoprostol to complete the abortion (Paper II).

The **secondary outcomes** included acceptability, feasibility and safety.

- Acceptability was measured for the intervention in particular but also for the overall abortion experience. The measures used were women's acceptability of home-assessment defined as women's future preference of location of follow-up. Additionally, overall satisfaction (satisfactory/not satisfactory), expectations compared with experience (better/same/worse) and the current abortion compared with previous abortion experiences were compared between study groups. Moreover, future preference of abortion method (medical/surgical/either or) was compared between study groups (Paper I).
- Feasibility was defined as women's ability to carry out the LSPT on their own and to interpret the test to determine their abortion outcome. Feasibility was also compared with acceptability of home-assessment to see whether the conduct of the test influenced acceptability (Papers I & II).
- Safety was measured as no adverse events requiring hospital admission, blood transfusion, intravenous fluids or intravenous antibiotics (Paper I).

Other factors thought to potentially influence women's acceptability, feasibility and safety, such as travel time, total time spent in the clinic, number of visits, location of misoprostol, unscheduled visits, adverse events, abortion outcome and background characteristics of the women, were also measured. Finally, we recorded which contraceptive method women opted for at the different care-encounters, whether they had initiated or not, and whether they, at the time of follow-up, recalled having received contraceptive counselling.

The outcomes were measured through questionnaires that were administered at the two-week follow-up occasion – whether in clinic, at home or over the phone. Background characteristics, travel and contraceptive choice, were recorded on day 1 and day 3, when applicable, in addition to at the time of follow-up.

Clinical records were reviewed for women who made interim visits and reasons for interim visits between groups were compared.

## Data Analysis

We carried out data analysis in SPSS 20.0 and R version 3.0. We defined the non-inferiority margin ( $\delta$ ) to 5% based on the success rate of medical abortion [79]. The abortion outcome was compared between the study groups using 95% two-sided confidence intervals of proportions. Intention to treat (ITT) analysis included all women who were randomised to a study group according to their random group allocation. Imputing success and imputing failures in cases where the main outcome was unknown and comparing the two analyses further, comprised the sensitivity analysis. For the purpose of the main outcome analysis we defined women where the main outcome of interest (complete/incomplete abortion) was known, whether through scheduled follow-up or not, as evaluable subjects (ES). For the purpose of the secondary outcome analysis, the main outcome was acceptability at the scheduled follow-up and the ES population was defined as women who had completed scheduled follow-up. For both main outcome analysis and secondary outcome analysis we used Chi-square tests to compare descriptive statistics and independent *t*-test to compare continuous data presented as the mean (SD). Bivariate and multivariate logistic regressions were carried out to establish associations between variables. The logistic regressions applied a Backward Wald to step-wise eliminate variables that were not significantly associated from the regression.

## Cross-sectional Study (Study II)

### Study Rationale

When designing the RCT described above, the question arose as to whether simplified follow-up would affect contraceptive use in this context. The concern with regard to the “lost opportunity” to provide post-abortion contraception at the follow-up is often raised in the discussions around simplification of abortion and is of particular concern among decision-makers.

### Study Design and Participants

As a compliment to the RCT we decided to carry out a cross-sectional study of contraceptive use at two weeks and three months post-medical abortion. All women who were recruited in the RCT and had a successful follow-up at two weeks were included in the study and a sub-group of women who were recruited from the urban study sites, those who possessed a phone of their own and were willing to have an additional follow-up phone call after three months, were included in the study.

## Data Collection

At the time of recruitment for the RCT (day 1), research assistants recorded women's reproductive history, including previous contraceptive use, number of children stratified by sex, and their reproductive intention with the abortion – to space or to limit children. For the women who returned to the clinic on day 3 for misoprostol administration, research assistants recorded whether they initiated contraception or not and if so, what method the women had initiated. At the time of the two-week follow-up, women were asked whether they had received contraceptive counselling, what methods they remembered, whether they had a preferred method and if so, whether they had started it already or when they were planning to start. The women who had already started were asked for how long they were planning to continue with the method and women who did not choose a method of preference were asked why they did not. At the three-month follow-up, women were contacted by telephone and asked whether they were using a contraceptive method, what method it was and whether they had switched methods since the abortion. They were also asked how long after the abortion they had initiated the method and from where they obtained the method and refill if applicable. Women who were not using a method were asked why and whether they were planning to start and when. We asked whether they had had another abortion or whether they were pregnant again. Finally, we offered all women contraceptive advice and inquired whether they had any questions or concerns with regard to the abortion or contraception. This element of the follow-up was not included in data collection but was offered as a service to all participants to use the opportunity to motivate women to initiate or continue to use contraception.

## Definitions

For the purpose of this study, modern contraception refers to condom, oral pill, copper-IUD, and the three-month injection because these were the methods that were available at the study sites. In the results section the reversible contraceptive methods are grouped into two groups: injectable and copper-IUD as one group, and oral pill and condom as another group. This is an attempt to categorise the methods according to; methods with a more 'long-acting and user-independent nature', although the injection is not considered a LARC by the WHO; and methods with a more 'short acting and user-dependent nature'. Additionally, in contrast to IUD and injectables, women who reported initiation of contraceptive pills or condoms at the two-week follow-up, may or may not actually use these methods after administration, especially with regard to condom use. Contraceptive use was defined as current use or initiation at two weeks and three months. Contraceptive initiation refers to the time when women started using their contracep-

tion. Additionally, we asked questions regarding the intention to initiate the contraceptive method of preference. For the purpose of analysis we divided intention to initiate into two categories: ‘actual plan’, defined as today, this week, after recovered from abortion, and after next menses; and ‘no actual plan’, defined as when my husband moves back from the city, after next holiday, sometime next year.

## Outcome Measures

The **primary outcome** was to compare contraceptive use at two weeks and three months post-medical abortion between women who were followed-up in-clinic and women who assessed their abortion outcome at home. Due to the small sample-size of women in the three-month follow-up, this data was used to indicate a trend of contraceptive use and continuation. The contraceptive preference, choice and usage patterns at two weeks allowed us to compare patterns and trends seen in the three month follow-up and in that way validate the accuracy of the three-month data as well as the potential generalizability of the findings even from the three-month sub-study, while being aware of the potential differences between the sub-sample population and the whole study population.

The **secondary outcomes** included time after abortion to contraceptive initiation, preference of method, whether the plan to initiate was an ‘actual plan’ or not, contraceptive counselling provision, acceptability of the abortion, and contraceptive use in relation to the social and reproductive background characteristics of the women.

## Data Analysis

Analyses were carried out for the ES population, defined for the purpose of this study as all women with a successful scheduled follow-up at two weeks, regardless of completion of abortion or correctness of medicine regimen. ITT analysis including all women who were randomized for the purpose of the RCT using their group allocation as per treatment received, was carried out to compensate for difference in loss to scheduled follow-up between the study groups. For the purpose of the ITT analysis we made the assumption that none of the women who were lost to scheduled follow-up had initiated a method at two weeks, except the women who had clinical records of contraception initiation on their day three visit. All women with successful three-month follow-up were included in the sub-set analysis.

We carried out all statistical calculations in SPSS (version 20) and R (version 3.0.3). Descriptive statistics are presented for all variables and categorical variables are compared using  $\chi^2$ -test or Fisher’s exact test when appropriate. Continuous data were presented as mean (range). A *p*-value below 0.05

or 95% confidence interval (95% CI) and presented as  $\pm$ , illustrates significant differences. Odds ratios (OR) were derived using bivariate logistic regression comparing different explanatory variables. Adjusted odds ratios (AOR) were derived with multivariate logistic regression when the bivariate analysis was significant. Initiation of contraception over time was illustrated by Kaplan-Meier survival analysis where log-rank test established the significance.

## Qualitative Study (Study III)

### Audit Trail

For the purpose of this Indo-Swedish collaboration, I travelled to Udaipur in 2012 with the aim of setting up the RCT together with our Indian collaborators. I also planned to do some explorative work and my first intention was to interview adolescent girls in the rural context. However, after a few weeks in Udaipur, I perceived it to be unfeasible to have an in-depth conversation with a woman, especially about sexuality and reproduction, and I wondered whether they would even want to talk to me about such topics. Why would they want to share their stories with a stranger? I perceived the women as quiet, they covered their faces with their saris, in *purdah*, and seemed to have little intention of taking charge of their lives. I remember how I wrote in my diary that “women here just sit there, and accept everything” and I remember comparing it to my previous experience in the Sub-Saharan African context where women are “seen and heard” in a different way. It made me disappointed and a bit frustrated to see this, and I must admit that I took it personally, because of my Indian roots and because of being a woman. This made me the “ambiguous outsider/insider”.

Instead, I started to sketch out different study designs, and research questions that I thought would be more feasible. My first idea was to explore drug stores’ and traditional doctors’ roles in the provision of medical abortion. After a few informal conversations with stakeholders and potential participants, I realized that unofficial provision of medical abortion pills was difficult to talk about in general, and with the pharmacy workers in particular. Had it been one year earlier, it probably would have been easier, however, during 2012, the Drug Controller of India shut down many drug stores, withdrew doctors’ licenses and made informal visits to potential providers of illegal medical abortion. This raid was justified under the PC & PNDT Act, in a desperate attempt by the government to stall gender-biased sex selection and subsequently decrease the sex ratio imbalance. Hence, the potential medical abortion pill retailers were terrified.

During the adaptation of the RCT, I spent most of my time in the field talking to women, trying to understand the customs and learn about the cul-

ture and so I got another idea for a qualitative study; I wanted to interview VHWs and their role in abortion and contraception, and again I carried out a few pilot interviews with the VHWs working for the NGO in the area. However, I soon realized that these VHWs were not comparable with the governmentally-employed VHWs, referred to as ASHAs, because of the NGO's more extensive training and supervision as well as the focus on reversible contraception in the NGO in contrast to the Government's focus on sterilization. The study would have mainly evaluated the NGO's VHW activities rather than exploring the VHW role in rural settings and, due to my 'belonging' to the NGO, the risk of bias was too great and such evaluation could have been controversial because of this collaboration. I decided instead to use the information gained from these interviews for my own understanding and interpretation of future work.

At last, I ended up where I started, because the RCT had brought to my attention that women seeking abortion services from the study sites were rarely younger than 24 years, and commonly had at least one child. So I wondered; where are the young women? How do the young women manage their reproductive choices and why were they rarely seen in the clinics, when there must be a need for the means to plan the family?

I decided to make an attempt to explore unmarried women's sexual and reproductive health. However, due to the cultural context and the taboo topic I wanted to explore, I did not receive ethical permission to do so, and after consultations with my Indian colleagues we decided to explore recently-married women's sexual and reproductive health choices and probe about their pre-marriage experiences as well. Eight months after I arrived in Udaipur I could finally begin data collection for my study, and I was terrified of asking the wrong questions and for pushing the boundaries too far to make the participants and the interpreter uncomfortable. During this process I was inspired by Lincoln and Guba's strategies for conducting qualitative research in human settings based on the paradigm that there is not one single objective reality. Rather, there are multiple subjective realities that together form conclusions and realities guiding and explaining people's behaviour. Lincoln and Guba suggest that this can be explored through naturalistic inquiry [152], where the researchers constantly construct, re-construct and confirm constructed realities. The researcher thereby constructs realities through constant comparisons between and within interviews allowing for recognition of patterns and behaviours. The repeated expressions in interviews contribute to the validation of these constructs and, due to the constant reconstruction of realities, these constructs are continuously shared with and tested on those under study. Fruitful communication can only occur when the researcher and study participant share the same constructions of the context.

This approach allowed me to develop in my role as the explorer together with my participants; it also facilitated my transition from my first-hand

experience where I perceived the women as incapacitated, and instead I could create a reality that was more compatible with the women's, and hence closer to the reality in which they exist.

## Study Rationale

The median age of women seeking abortions at our RCT study sites was 26–27 years. I could not help but wonder where the recently-married or unmarried women seek abortion services. This study set out to explore recently-married women's reproductive desires and choices and how they plan their families and seek sexual and reproductive health services; and attempts to identify young women's reproductive health care needs, in low-resource, and rural setting.

## Study Participants

In order to explore the reproductive decision-making of young married women and men, we interviewed married youth in the age range of 18–27, with a preference given to those who were recently married or recently cohabiting. We define recently married as being married within the last two years, however, due to some of the marriages occurring very early in this setting, women and men who were married early but had only been cohabiting for 2–3 years were also considered eligible. No participants were less than 18 years old, however, because participants were not always sure of their exact age, we estimated age using years of schooling, years of menstruation for the women or years of marriage as proxies. Female participants were generally younger, ranging between 18–24 years, and male participants ranged between 18–28 years.

## Study Procedure

We applied an inductive approach, inspired by naturalistic inquiry [152], using qualitative in-depth interviews (IDI) to collect data. Interviews were carried out in stages over a one-year period (April 2013 – April 2014) and the nature of the data collection allowed the interviews to develop throughout. To facilitate this, we carried out continuous comparison of transcripts and analysis of data to identify themes. These themes could subsequently guide further data collection. This inductive approach allowed the interviews to develop in stages: the initial interviews had a broad approach, attempting to gather general information as well as understand how to discuss the taboo study topic. During the course of data collection, we tightened and narrowed down the topic guide. Additionally, we developed vignettes to discuss sensitive topics in an impersonal way. The vignettes consisted of hypothetical cases based on stories from the first set of interviews with women (Appendix

1). The topic guide used to collect data included: expectations of marriage and life before and after marriage, the spousal relationship, reproductive choices and family planning, social expectations of reproduction, and general reproductive knowledge. In addition, interviews commonly included conversation on autonomy, freedom and restrictions within and before marriage as well as the power dynamics between husband and wife, and wife and mother-in-law. Questions about the participants' socio-demographic background were incorporated throughout the interview and an interview would commonly start with us letting the participant tell us about her/himself. In addition to the interviews, I carried out field visits, kept field diaries, informal conversations and observations throughout my time in the field. This contributed to my understanding and contextualisation of the findings.

In total, 44 IDIs were conducted; 19 with women, of whom five were followed-up within one year of the first interview, and 20 interviews were conducted with men. The five women who were followed-up belonged to the women who were interviewed at the very start, and hence we felt a need to further explore and clarify concepts that had emerged during the data collection process. Additionally, we wanted to create a more in-depth character of the interviews with regard to sexuality and contraception and anticipated the women to be more open during the second interview. With the follow-up interviews, we quickly reached saturation where the participants brought up similar arguments and confirmed the themes identified in the preceding data collection. The interviews were carried out in different villages and participants were identified through snowballing or with the help of the gatekeepers known to the NGO in the area. The gatekeepers generally consisted of field staff from the NGO, associated VHWs or Aanganwadis, the local health volunteer in the village. A local female interpreter facilitated the interviews with the women and a local male interpreter facilitated the interviews with men. The interpreters interviewed the women using a mix of Hindi, Mewari or the local dialect of Mewari. I guided all interviews, however, I allowed the interpreter to play an active role in the interviewing and tried to avoid verbatim translation at the time of the interview but rather had the interpreter summarize the main topics that were discussed [153]. With time and my own increasing Hindi skills, the need for the interpreter to translate from Hindi to English decreased. However, the interpreter still posted questions in Hindi based on my questions in English. Each interview took 25–50 minutes, depending on the availability of the participant as well as the possibility to maintain confidentiality given the family and housing setting. After the interview we commonly spent time with the participant. We were often invited to stay and drink tea with them in their house. This too added value to the contextualisation of the findings.

## Data Analysis

The interviews were transcribed verbatim, and translated into English. The transcripts included the question posed by me in English, the same question translated into Hindi posed by the interpreter and the participant's reply, verbatim, as well as the interpreter's summary in English. Interviews were analysed in-depth by reading through the transcripts several times. If any ambiguities arose during this process they were clarified with both translator and the interpreter by re-listening to the tape recordings and confirming the content with the translated transcript. Context-specific expressions or words used to describe certain concepts, such as "cleaning", which referred to abortion, and "to talk", which could sometimes refer to having sex, were validated with the translator to not forego the meaning of the words, some of which are presented in the findings section. While reading and re-reading the transcripts, we identified codes and structured them under themes inspired by thematic analysis [154]. Thematic analysis was found to be an appropriate method of analysis due to the explorative nature of the study, the emergent design of the data collection, and the aim of the study [155]. Codes and themes were constantly compared between and within cases to maintain the context within the themes. The themes identified were then synthesized into one overarching more abstract theme mirroring the nature of the findings and putting the themes into context. Data were analysed manually by using the 'scissor and paste' method and structuring data in tables and mind-maps [155].

## Conceptual Framework – A Summary: Agency

In this study we explore women's agency in reproductive decision-making by applying a conceptual framework informed by Foucault's idiom of microphysics of power [156] structured under Bandura's 'agentic' perspective [157]. Foucault argues that power is strategic and tactical rather than acquired, preserved and possessed. This makes it a suitable concept to adopt when describing power-dynamics at the micro-level, referring to the community and family setting in this study.

Agency is a form of power and can be seen as either a resource that is shared between people (collective), or a capacity of the self (individual) [158], and a key feature of personal or individual agency is the power to originate actions for given purposes [157]. To better understand agency – how it plays out and what the underlying components are – we use Bandura's 'agentic' perspective. Bandura stratifies agency into four components: forethought, intentionality, reactivity, and self-reflection (Table 6) [157]. These components are helpful in settings where agency may appear to be limited based on the lack of actions, because they break down agency into components that reflect how forethought results in intentionality that may or

may not lead to reactiveness and finally lands in self-reflection that evaluates the action, or non action.

Table 6. *An overview of the agency components based on Bandura's 'agentic' perspective [157].*

<b>Agency component</b>	<b>Description</b>
Forethought	Reflection to consider what is known, the believed consequences of action/non-action. Forethought provides direction and coherence.
Intentionality	Choosing to act in order to achieve a certain outcome. The chosen act may be a result of acting in an accommodative way, primarily fulfilling expectations of others, or in a self-influential way fulfilling the desire of one self.
Reactiveness	Shaping the appropriate course of action and regulating execution.
Self-reflection	Judging the correctness of the action by comparing the outcome with the intention and the reaction from others as a response to the outcome/action.

# Ethical Considerations

There are several ethical considerations in this thesis due to the nature of the study focus of abortion, a topic that is often considered sensitive and controversial. Ethical approval was obtained from the local Institutional Ethics Committees at Action Research and Training for Health (ARTH) in Udaipur for all studies. In addition, the Health Ministry's Steering Committee of the Government of India approved the conduct of the studies.

Simplified follow-up after medical abortion is an established method and has been employed in high-resource settings in the UK since 2012 [71]. To ensure the safety of the intervention in the study context we made great efforts in the adaptation and implementation of the intervention before rolling out the study as described previously. This was to be sure of the feasibility of rolling out the study as well as to do it in the best and safest way possible to not jeopardize women's health and reputation.

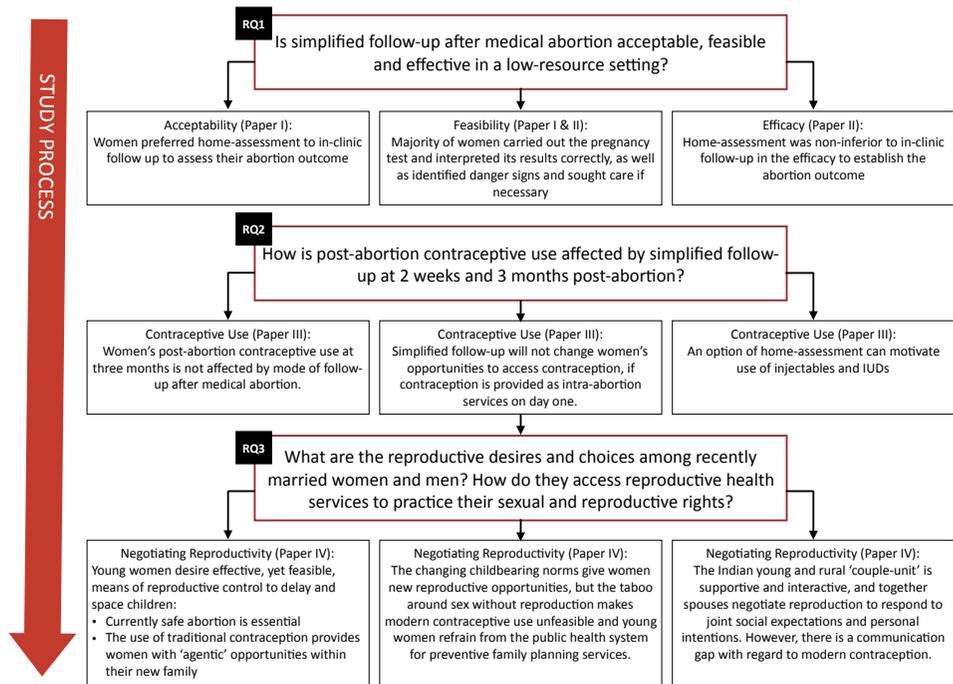
To respect women's privacy and confidentiality in all studies we took extensive efforts, several of which have been described under the methodology section. For the purpose of the RCT, all women who approached the study sites for solutions to an unintended pregnancy were provided with appropriate abortion care regardless of study participation. Informed consent was taken from all women, and because the abortion procedure had already been initiated at the time of taking their consent, the women did not feel that they would not obtain the abortion if they did not agree to participate. All clinical and study procedures were carried out in private settings where no other patients or relatives could overhear the conversations. Women were informed that they could opt out of the study at any time and still receive the appropriate abortion care. For women who were followed-up at home, additional precautions were taken. At the time of follow-up, two different households were visited in addition to the study participant to carry out 'camouflage' interviews with young women. This strategy was adopted to maintain the confidentiality of the women and reduce suspicion from their neighbours. If, at any time during follow-up, another person interrupted the interview, the topic was changed immediately to not reveal the purpose of the visit. If complete privacy could not be achieved, the research assistant came back at another time or met the woman elsewhere at her convenience. If the woman preferred to discontinue the study due to privacy issues, this was respected and the follow-up interview was dropped, however, the pregnancy outcome was always confirmed through a home-visit during one of the research assis-

tant's routine field visits, by phone if applicable, or by reviewing clinical records of interim visits. These efforts were explained to the woman at the time of enrolment and at the start of a follow-up visit to avoid confusion in the event of being interrupted and having to change topic or during 'camouflage' interviewing.

Some of the 'camouflage' interviews resulted in the in-depth interviews for the qualitative study; this was to optimize resources and time and fit well with the purpose. We would then combine data collection for the qualitative study with the follow-up visits of women in the home-assessment group in the RCT. The in-depth interviews followed a similar procedure where topics were switched in case of another person interrupting the interview. The location of the interview could also be changed according to the woman's preference. If the IDIs were not conducted as a 'camouflage visit' in itself in association with the RCT follow-up visits, the camouflage technique was employed during qualitative data collection as well and if one woman was interviewed, several other households in the same area were visited. However, we frequently carried out at least two IDIs in the same village on the same day. Informed consent was obtained from all participants and an additional consent to use the tape-recorder was obtained before initiation of the interviews. If the participants did not feel comfortable with any question they could avoid answering it or terminate the interview; none of the participants terminated the interview for these reasons, however, sometimes the interviews had to be concluded before they were finalised due to the presence of an in-law or senior family member. We chose to interview individual men and women, and not couples to protect the privacy and confidentiality of the participants, and this was appreciated by several of the female participants.

# Results

The Results are summarized in *Figure 7*, structured under each research question to lay out the rationale for the thesis. The first research question investigated the acceptability and effect of simplified follow-up after medical abortion, the second research question asks what effects the intervention has on post-abortion contraceptive use, and finally, we asked ourselves where the young women seek reproductive health care services and how young women and men relate to and use contraception and abortion services.



*Figure 7.* The logic behind the research questions and the key findings of the thesis

# Is simplified follow-up after early medical abortion acceptable, feasible and effective in a low-resource primary health care setting? (Study I)

## Acceptability of home-assessment post medical abortion and medical abortion in a low resource setting in Rajasthan, India (Paper I)

In total, 731 women were enrolled and randomized to the clinic follow-up group ( $n=353$ ) or home-assessment group ( $n=378$ ). Of these, 623 (85%) women had a successful scheduled follow-up at two weeks. Women's background characteristics are summarized in Table 7.

Table 7. Characteristics of women: included, excluded and stratified by study group.

	Clinic Follow-up $n=274$	Home-assessment $n=349$	All Women included $n=623$	All Women excluded $n=108$
<b>Median age, years</b>	26 (18-48)	26 (18-46)	26 (18-48)	26 (18-40)
<b>Residency</b>				
Urban	92 (33.6)	92 (26.4)	184 (29.5)	15 (13.9)
Rural	182 (66.4)	257 (73.6)	439 (70.5)	93 (86.1)
<b>Belong to ST group</b>	141 (51.5)	199 (57.0)	340 (54.6)	70 (64.8)
<b>Level of Education</b>				
No formal	124 (45.3)	199 (57.0)	323 (51.8)	82 (75.9)
Primary (1-3 years)	51 (18.6)	49 (14.0)	100 (16.1)	13 (12.0)
Secondary (4-10 years)	61 (22.3)	57 (16.3)	118 (18.9)	9 (8.3)
Higher (>10 years)	38 (13.9)	44 (12.6)	82 (13.2)	4 (3.7)
<b>Ownership of phone</b>				
Woman herself	130 (47.4)	152 (43.6)	282 (45.3)	42 (38.9)
Husband	100 (36.5)	133 (38.1)	233 (37.4)	36 (33.3)
None/others	44 (16.1)	64 (18.3)	108 (17.3)	30 (27.8)
<b>Person accompanying to clinic day 1</b>				
Nobody	94 (34.3)	107 (30.7)	201 (32.3)	42 (38.9)
Husband	98 (35.8)	117 (33.5)	215 (34.5)	24 (22.2)
Health worker	28 (10.2)	51 (14.6)	79 (12.7)	11 (10.2)
Natal family member	18 (6.6)	30 (8.6)	48 (7.7)	17 (15.7)
In-law family member	31 (11.3)	33 (9.5)	64 (10.3)	9 (8.3)
Neighbour/friend/other	5 (1.8)	12 (3.4)	17 (2.7)	3 (2.8)
<b>Primi-gravida</b>	10 (3.6)	18 (5.2)	28 (4.5)	8 (7.4)
<b>Median gestation, weeks</b>	6 (5-9)	6 (5-9)	6 (5-9)	7 (5-9)
<b>Gestation, weeks</b>				
< 6 weeks	51 (18.6)	58 (16.6)	109 (17.5)	19 (17.6)
6-7	150 (54.7)	196 (56.2)	346 (55.5)	61 (56.5)
> 7 weeks	73 (26.6)	95 (27.2)	168 (27.0)	28 (25.9)
<b>Prior elective abortion</b>	106 (38.7)	104 (29.8)	210 (33.7)	27 (25.0)
Medical <sup>a</sup>	79 (28.8)	84 (24.1)	163 (26.2)	19 (17.4)
Surgical <sup>a</sup>	30 (10.9)	25 (7.2)	55 (8.8)	9 (8.3)
<b>Home use of misoprostol</b>	134 (48.9)	156 (44.7)	290 (46.5)	37 (34.3)
<b>Used contraception</b>	111 (40.5)	106 (30.4)	217 (34.8)	25 (23.1)

Data are presented as median (range) or  $n$  (%). There were no socio-demographic background differences between women included in analysis and women lost to follow-up (data not shown). <sup>a</sup>Percentages are calculated for women with prior elective abortions ( $n=210$ ); some reported several types of abortion.

### *Acceptability of Home-assessment*

The majority, 355 (57%) women, preferred home-assessment in the event of a future abortion. Significantly more women (82% ± 4.0%) in the home-assessment group preferred home-assessment as mode of outcome assessment compared with 70% ± 5.4% of women in the clinic follow-up group, who preferred clinic follow-up in the event of a future abortion.

### *Acceptability and Feasibility in the Home-assessment Group (n=349)*

Residency (urban 89% ± 6.5% and rural 79% ± 5.0%) or education (formal 87% ± 5.4% and none 77% ± 5.9%) did not influence future preference of home-assessment. However, women residing in rural areas were significantly more likely to answer “doctors’ advice” in terms of future preference (5.9% ± 2.9%) compared with women residing in urban areas, where no one answered “doctor’ s advice”.

The majority (78% ± 4.7%) of women did the LSPT by themselves before follow-up contact and 93% ± 3.0% interpreted the test correctly. Table 8 gives an overview of the women who carried out the test and their test-result. Moreover, it illustrates the LSPT tests that were carried out during the follow-up visit for the women who had not carried out the test or in the case of uncertainties, or if the woman had carried out the test too early. The remaining women (n=76) did the test during the follow-up visit or after a reminder over the phone. These women were more likely to reside in a rural area (87%), belong to the SC/ST social group (71%), and lack formal education (68%).

Table 8. *Women’s assessment of the LSPT result compared with the final LSPT result as recorded by the research assistant at follow-up (n=349).*

<b>Women’s results assessment of the LSPT before follow-up<sup>b</sup></b>	<b>Women’s and research assistants’ results assessment of the LSPT at follow-up contact<sup>a</sup></b>		
	Positive, n (%)	Negative, n (%)	Not sure, n (%)
Positive	9 (69.2)	4 (30.8)	0 (0)
Negative	1 (0.4)	245 (99.6)	0 (0)
Not sure	0 (0)	11 (78.6)	3 (21.4)
Did the test at follow-up	5 (6.6)	70 (92.1)	1 (1.3)
<b>Total</b>	<b>15 (4.3)</b>	<b>330 (94.6)</b>	<b>4 (1.1)</b>

<sup>a</sup>21 women carried out a new test at home follow-up due to insecurity of test result or because the test had been done too early (including the false positive). Remaining women did the test by themselves after a reminder of the research assistant.

<sup>b</sup>As reported by the woman at the time of follow-up. Not all positive test results were repeated, only those that were done too early. Remaining women who reported a positive test result or were unsure of their result were referred to return to the clinic.

A significantly larger proportion of women (41%) did not prefer home-assessment in the event of a future abortion if they had a positive LSPT result or were unsure of their test result (n=27) at the time of follow-up, com-

pared with 14% of women with a negative LSPT result ( $n=245$ ). Additionally, having carried out the LSPT before contact with the research assistant was associated with satisfaction and this influenced whether women thought their abortion was complete or not. A larger proportion (80%) of the women who carried out the LSPT before follow-up contact thought their abortion was complete and they were less likely to report abortion-related symptoms at follow-up. Believing the abortion was complete at the time of follow-up was significantly associated with overall satisfaction ( $p = 0.007$ ) while being advised to return to the clinic by the research assistant had a negative impact on satisfaction ( $p < 0.001$ ).

#### *Acceptability of medical abortion*

Among all women ( $n=623$ ),  $81\% \pm 3.1\%$  preferred medical abortion as the abortion method in the event of a future abortion with no difference between study groups. Women were generally satisfied with their abortion and 96% (95% CI [93.9–97.2]) reported overall satisfaction. Additionally,  $95\% \pm 1.7\%$  of women found that the abortion procedure corresponded to, or was better than their expectations, with no difference between study groups. Educational attainment, urban/rural residency, number of previous births, gestational age and previous elective abortions had no influence on the results for overall satisfaction.

Twenty-five women reported dissatisfaction and 29 women found the abortion procedure to be worse than expected. No socio-demographic pattern was found among those women who were dissatisfied, however, half of these women reported unsuccessful abortion needing an additional intervention. Moreover, women were less likely to report satisfaction if they experienced side effects at misoprostol administration, had contacted the clinic due to side effects or danger signs before follow-up, or reported continuing abortion-related symptoms at follow-up.

#### **Self-assessment of the outcome of early medical abortion versus clinic follow-up in India: a randomised, controlled, non-inferiority trial (Paper II)**

The main outcome of the RCT was to establish the non-inferiority of home-assessment compared with in-clinic assessment. From the total of 731 women recruited in the study, we successfully obtained information about the abortion outcome for 700 women, referred to as the evaluable subject (ES) population and used for the purpose of analysis (336 clinic follow-up, 364 home-assessment). Complete abortion was defined as abortion without continuing pregnancy, surgical intervention, or additional mifepristone and/or misoprostol. In the clinic follow-up group, 313 (93%) women reported a complete abortion and in the home-assessment group, 347 (95%) women reported complete abortion. This created a difference of -2.2% and indicates a lower risk of incomplete abortion in the home-assessment group (Table 9).

This finding establishes the non-inferiority of the intervention well beyond the set delta margin (5%).

Table 9. *Outcome of medical abortion for intention-to-treat population and evaluable population*

	<b>Clinic follow-up, n (%)</b>	<b>Home-assessment, n (%)</b>	<b>Difference in out- come rates (95% CI)</b>
<b>Intention-to-treat analysis*</b>	<b>366</b>	<b>365</b>	
Complete abortion	340 (93)	347 (95)	- 2.2% (-5.9 to 1.5%)
Unsuccessful abortion	26 (7)	18 (5)	
Continuing †	7 (2)	3 (1)	
Continued the pregnancy	3	1	
Surgical evacuation	3	2	
Repeat medical abortion	1	0	
Incomplete ‡	19 (5)	15 (4)	
Surgical evacuation	15	12	
Repeat Misoprostol	4	3	
<b>Evaluable population analysis§</b>	<b>336</b>	<b>364</b>	
Complete abortion	313 (93)	347 (95)	- 2.2% (-5.9 to 1.6%)
Unsuccessful abortion	23 (7)	17 (5)	
Continuing	5 (1)	2 (1)	
Continued the pregnancy	1	0	
Surgical evacuation	3	2	
Repeat medical abortion	1	0	
Incomplete‡	18 (5)	15 (4)	
Surgical evacuation	14	12	
Repeat Misoprostol	4	3	
Lost to follow-up	11	7	
Violation of protocol	6	7	

Data are presented as number of women or n (%), unless otherwise stated. \*For the intention-to-treat (ITT) analysis, the groups were analysed as per the randomisation list and with imputed success where outcome was unknown. †The three additional continuing pregnancies in the ITT analysis were in women who did not use misoprostol, these were considered protocol violations. ‡Incomplete abortions were defined as diagnosis of retained products of conception with need for surgical intervention or additional misoprostol. §For the evaluable population analysis, the groups were analysed as per actual allocation.

One case of haemorrhage occurred in each group (rate of adverse events 0.3% in each group); no other adverse events were noted. Among the women in the ES population, the outcome was established during follow-up in 520 (74%) women (69% of clinic follow-up group and 79% of home-assessment group). In total, 128 women (18%) made an interim visit where clinical outcomes were established for 110 (16%) women (14% clinic follow-up group and 17% home-assessment group). The remaining women ( $n=70$ ) were followed-up through later contacts for the purpose of obtaining the outcome information (17% clinic follow-up group and 4% home-assessment group). The timing of outcome determination is summarized in Table 10 and in the ES population, four on-going pregnancies were detected by interim visits by day six or later, whereas three were detected by scheduled visits. Half of the women who made an interim visit did so due to self-identified abortion-

related complications or side effects. Fifteen women presented with a positive LSPT, none of whom had a **continuing** pregnancy and 11 of whom returned to the clinic. An additional 10 women returned to the clinic due to other abortion-related concerns after follow-up. All women with a positive LSPT who did not return to the clinic were contacted to confirm their abortion outcome and ensure health.

Table 10. *Timing of outcome determination*

	<b>Clinic follow-up group (n= 336)</b>	<b>Home-assessment group (n=364)</b>	<b>Total (n=700)</b>
Continuing pregnancy, n (%)	5 (1)	2 (1)	7 (1)
Interim visit	3 (1)	1 (<1)	4 (1)
Scheduled visit to clinic	2 (1)	1 (<1)	3 (<1)
Incomplete abortion, n (%)	18 (5)	15 (4)	33 (5)
Interim visit	10 (3)	11 (3)	21 (3)
Scheduled visit to clinic	8 (2)	4 (1)	12 (2)
All unsuccessful abortions, n (%)	23 (7)	17 (5)	40 (6)
Interim visit	13 (4)	12 (3)	25 (4)
Scheduled visit to clinic	10 (3)	5 (1)	15 (2)

All data are presented as n (%)

Within the 515 women from both groups who were successfully contacted, whose abortion outcome was not determined by interim visits, and whose pregnancy tests were done, two continuing pregnancies and no false negative tests were identified.

The analysis was adjusted for several socio-demographic variables such as caste, residence, education, and employment, however, this did not affect the complete abortion rates in the two study groups. In fact, women belonging to the ST social group and who resided in a rural area were more likely to have a successful abortion outcome compared with women not belonging to this group (data not shown).

## How does simplified follow-up post-medical abortion influence contraceptive use? (Study II)

### **Does mode of follow-up influence contraceptive use after medical abortion in a low-resource setting? Secondary Outcome Analysis of a Non-inferiority Randomized Controlled Trial (Paper III)**

In total, 626 women had a scheduled follow-up at two weeks and were included in the evaluable subject (ES) analysis, and 114 women were successfully contacted by telephone at three months, all of whom were included in the ES population, but one woman was lost to scheduled follow-up at two weeks. The last follow-up was conducted in August 2014.

*Contraceptive use at 2 weeks and 3 months compared between study groups (n=114).*

Most women (83 ± 6.9%) had adopted and were still using (76 ± 7.8%) a contraceptive method at three months post-medical abortion regardless of study group allocation. Among the same sub-set of women (n=114), but at the two-week follow-up, there was no significant difference in contraceptive use between study groups, however, there was a clear trend of increased use in the clinic follow-up group. While women in the clinic follow-up group (n=62) were most likely to initiate contraception at follow-up (62 ± 12%), women in the home-assessment group (n=52) were most likely to initiate contraception after next menstruation (60 ± 13%) as reported at the three-month follow-up.

Table 11. *Women’s contraceptive use and intention at 2 weeks (n=626)*

	Clinic FU	Home-assessment	Total	p-value <sup>§</sup>
<b>Preferred method for initiation chosen (n=626)</b>				
Yes	250 (92 ± 3.2)	306 (87 ± 3.5)	556 (89 ± 2.44)	0.059
No	22 (8 ± 3.2)	45 (13 ± 3.5)	67 (11 ± 2.44)	
<b>Method initiated at 2 weeks (n=556)</b>				
Yes	133 (53 ± 6.2)	75 (25 ± 4.8)	208 (37 ± 4.0)	< 0.001
No	117 (47 ± 6.2)	231 (76 ± 4.8)	348 (63 ± 4.0)	
<b>Actual plan to initiate method at 2 weeks (n=348)</b>				
Yes	104 (89 ± 5.7)	192 (83 ± 4.8)	296 (85 ± 3.7)	0.154
No	13 (11 ± 5.7)	39 (17 ± 4.8)	52 (15 ± 3.7)	

Data are presented as n (% ± 95% CI) if not indicated differently. <sup>§</sup>Significant differences are indicated by  $p < 0.050$ . Missing values were excluded from analysis. Percentages are presented as column percentages. Actual plan to initiate was defined as: ‘after next menstruation’, ‘within one week’, ‘when recovered from abortion’.

*Contraceptive use at two weeks compared between study groups (n=626)*

To validate our findings from the sub-set of women in the three-month follow-up group, we analysed contraceptive use at two weeks post-medical abortion in the ES population of the RCT (n=626). Among all women, 33% had initiated a contraceptive method at two weeks. However, this question was only posted to women who had chosen a method of preference at follow-up (n=556), and among these 37% had initiated a method, with a significant difference between study groups (clinic follow-up group 53 ± 6.2% and home-assessment group 25 ± 4.8%) (Table 11). To compensate for the greater number of women lost to follow-up in the clinic follow-up group, we ran an ITT analysis with all recruited women (n=731) and where ‘no contraceptive initiation’ was imputed for women who were lost to scheduled follow-up or where no information was available with regard to contraceptive provision on day three. The ITT analysis resulted in a smaller, however still significant, difference between the study groups in terms of contraceptive initia-

tion at two weeks ( $38 \pm 3.5\%$  clinic follow-up group and  $20 \pm 2.9\%$  home-assessment group).

Most women (89%) intended to use a contraceptive method and had chosen a specific contraceptive method of preference, with no difference between study groups. However, more women in the home-assessment group (52%) preferred the three-month injection compared with the in-clinic follow-up group (44%) ( $p = 0.090$ ), and significantly more women preferred to use condoms in the in-clinic follow-up group (23%) compared with the home-assessment group (16%) ( $p = 0.025$ ). Only a small proportion of women (4%) desired sterilization. Among all women who had initiated a method ( $n=207$ ), 52% had initiated the injectable ( $n=95$ ) or the copper-IUD ( $n=11$ ), with no difference between study groups. However, in actual numbers, fewer women in the home-assessment group had initiated the injectable or the copper-IUD compared with the clinic follow-up group, due to the lesser number of women in the home-assessment group who reported any contraception use at two-weeks. Among the women who had chosen a method of preference but who had not yet initiated at scheduled follow-up ( $n=348$ ), most (85%) stated that they had an 'actual plan' to initiate, with no difference between study groups (Table 11).

For women who did not wish to use any method ( $n=67$ ), reasons such as fear of side effects (27%), not cohabiting with their partner (20%), not being aware of suitable methods (20%) or lack of family support (14%) were given (data not shown).

#### *Women's background characteristics and contraceptive use pattern*

Social group (caste), educational attainment, and residence did not influence contraceptive initiation at two weeks or three months (data not shown). When adjusting for number of children (non-significant), women were more likely (AOR 1.8, 95% CI 1.0–3.0) to adopt contraception at two weeks if they had a son in comparison with women who did not yet have a son. Women with the intention to limit number of children were more likely (OR 1.8 95% CI 1.1–3.0) to have chosen a method compared with women wanting to space between children. Previous use of contraception ( $n=218$ ) positively influenced contraception initiation at two weeks (OR 1.4 95% CI 1.0–2.0) (data not shown).

#### *Influential factors on contraceptive use*

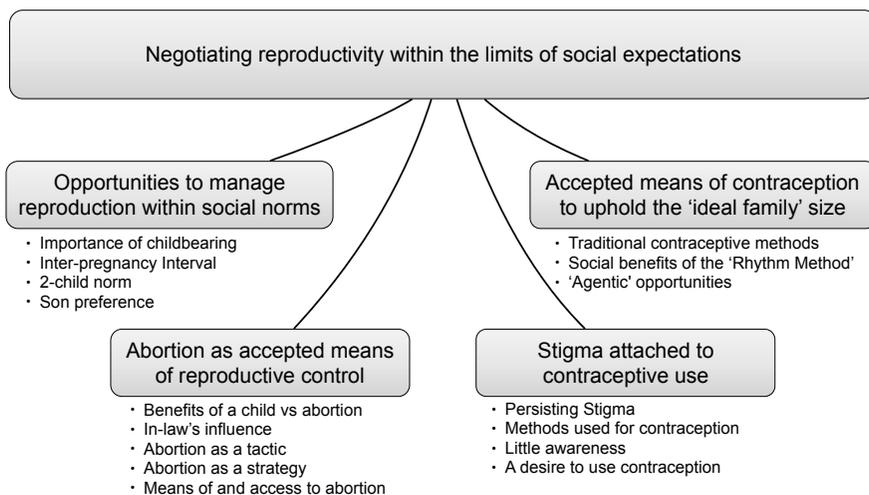
Most women ( $86 \pm 2.7\%$ ) reported having received contraceptive counselling during their abortion, with no significant difference between study groups ( $90 \pm 3.6\%$  in the clinic follow-up group and  $83 \pm 3.9\%$  in the home-assessment group). To report received contraceptive counselling was associated with three times the odds ratio (AOR 3.4 95% CI 1.5–7.8) to have initiated a method at two weeks when adjusting for contraceptive provision on day three. Women who were provided a contraceptive method on day three

of the abortion, were four times (AOR 3.7 95% CI 2.0–6.9) more likely to have initiated contraception at two weeks when adjusting for reported contraceptive counselling. Being satisfied with the abortion positively influenced whether women chose a method at two weeks or not (OR 3.5 95% CI 1.4–8.7) and having chosen a method and reporting an ‘actual plan’ to initiate at two weeks was associated with six times the increased odds of contraception initiation at three months (OR 5.9 95% CI 1.2–28.4).

## What are the reproductive desires and choices among recently married women and men? How do they access reproductive health services to practice their sexual and reproductive rights in rural India? (Study III)

### “Negotiating collective and individual agency – a qualitative study of young women’s reproductive health in rural India” (Paper IV)

The data were structured under one overarching theme: ‘Negotiating reproductivity within the limits of social expectations’, and the four sub-themes illustrated in *Figure 8*. The overarching theme reflects the interplay between society and young women’s reproduction and suggests both opportunities and barriers for women to practice agency in negotiation within social norms while catering to in-laws and husbands.



*Figure 8.* Thematic map illustrating the overarching theme and the four sub-themes, as well as selected codes leading up to the sub-themes.

### *Opportunities to manage reproduction within social norms*

This sub-theme sets out the preconditions of what is expected of young, recently married women and how they situate themselves in relation to social norms. It sheds light on the social importance of fertility, however, more importantly, it lays out the changing childbearing norms and community expectations. Our study suggests the internalization of the two-child norm and the acceptance towards increasing the inter-pregnancy interval (spacing) among young women residing in the rural areas of Rajasthan.

“When she [my daughter] will become 5 years old, (...), then it would be fine [to have another child].” (19 years, uniparous at follow-up interview, ST)

We identified that these norms give young women opportunities to manage reproduction in terms of delaying, spacing and limiting childbirth. The social acceptance of these childbearing norms in rural Rajasthan enables a collective approach toward reproduction that is directly beneficial to women’s health, allowing women more reproductive autonomy, while staying within the limits of social expectations. Hence, the women’s and their husbands’ expressed personal reproductive intentions to space and limit the number of children accommodates the accepted social norms while catering to their own reproductive desires. This may enhance the scope of fertility control among recently-married women. Moreover, the first sub-theme sheds light on the persisting, yet fading son-preference, the absence of abortions for the purpose of sex-selection, and the importance of having at least one daughter. The ideal family according to the women consisted of one boy and one girl.

“Husband has said that there is no problem if one boy and one girl is not there, two girls will also do.” (19 years, uniparous, ST)

### *Abortion as accepted means of reproductive control*

The young women in the study explained how it was common to resort to abortions to resolve unintended pregnancies, however, only after carefully weighing the social benefits of continuing the pregnancy versus the benefits of terminating the pregnancy. Women were more likely to resort to abortions upon experiencing unwanted pregnancies if the mother-in-law was unaware of the pregnancy. The decision to abort was commonly a joint decision between husband and wife, and the husband was regarded as a key person in the procurement of the abortion – whether in clinic or by obtaining an abortion pill from a pharmacy. However, the abortion could also be a decision made by the woman herself, if her intentions deviated from that of her husband.

“I told him [my husband] that this has happened to me, I’m three months pregnant. And if someone will see and will ask, how this happened... I don’t

want it now, so he agreed with me. I went there [to the clinic] (...) Then I took the pills and had a cleaning, and my work [abortion] was done with it.” (19 years, pregnant at first interview, ST)

Although the practice of abortion – referred to as cleaning of the uterus – is a generally accepted procedure in this setting, abortions were not necessarily accepted under all circumstances, especially upon a young woman’s first pregnancy and the society expected her to conceive. Consequently, if the mother-in-law would be aware of the pregnancy, the pregnancy would likely be carried to term, unless the mother-in-law herself had a different agenda or found the pregnancy inappropriate, for example, if it occurred before or ‘too soon’ after cohabitation (gauna) began. Instead, if the couple kept the unwanted pregnancy a secret, they were more likely to have an abortion.

Our findings contrast with the recent medial and political focus that suggests abortions to primarily be for the purpose of selecting sex and instead we show how abortion is a common and necessary practice for the women in this setting to control their reproduction. Having the means to obtain the abortion varied, and most women explained that they preferred the private clinics in the city. However, a few had resorted to the NGO-run clinics in the area, used abortion pills procured by their husband or resorted to traditional methods such as heated sugar from dates, *‘jaggeri’*.

“[With] tablet [I] mean [the tablet you take] when the period days have crossed [delayed]. Then I took the tablets once (...) my husband has said, he bought the tablets from the shop or from the hospital, that I don’t know, I took them at home.” (24 years, uniparous, Rajput)

None of the women preferred the public hospital. Only one woman had had her abortion in a public facility. Her abortion was carried out against her will upon the request of her in-laws due to complications in the second trimester, and employed sharp curettage with no anaesthesia to terminate the pregnancy.

#### *Accepted means of contraception to uphold the ‘ideal family’ size*

The women needed a means to uphold the family size to cater to childbearing norms as well as to their own reproductive intentions. Even though they have a desire to use an effective method, their primary concern was to use an accepted method that would neither jeopardize their social status nor future childbearing capacity. The ‘rhythm method’, entailing abstaining from sex during fertile days, was a commonly used method among the young women. The women explained that fertility occurs during menstruation and a few days after, when the uterus is open, clean and receptive to sperm. Unintended pregnancies were common and rather than a shortcoming of the ‘rhythm method’ the women explained that it was because of their, or their hus-

band's, carelessness. Subsequently, unwanted pregnancies were resolved through abortions.

This study also throws light on how the rhythm method gives women 'agentic' opportunities. The 'fertile days' were an opportunity for women to travel to their natal home, where they commonly had less restrictions and less housework. However, it was also a means of discussing family planning with their husbands, and negotiating abstinence was a way for the women to regain power in their spousal relationship. The period of abstinence could vary from four to ten days depending on the woman's preference.

#### *Stigma attached to reversible contraceptive use*

The fourth sub-theme throws light on women's perceived unfeasibility of using modern contraception, although they have a desire to use effective means of fertility control. Sterilization was rarely desired, however, one woman mentioned it as a solution because her family would never agree to her using reversible contraception. Another woman described the difficulty of using contraception like this:

"Yes, I've heard [about contraception], but I've never thought of taking any tablet (...) He [my husband] said, but I refused, there is no fear, but I didn't take (...). My in-laws got to know (...) whatever contraceptive I take, they get to know; and then they can tell anyone, so I didn't take. Even my [natal] family members have told me [not to take]." (20 years, uniparous, ST)

Moreover, the women's lack of awareness with regard to different contraceptive methods, combined with the common misconceptions around infertility, contributed to their reluctance to use contraception. Although the women said that they did not believe in the rumours around contraceptive methods resulting in infertility or cancer, they also said that they prefer to be on 'the right side of fertility', and hence would be reluctant to use contraception before they had conceived at least once. Their reasoning for this was because they perceived that if they did use contraception and subsequently failed to conceive according to expectations, they would jeopardize their status in the family and the community and run the risk of divorce. Due to the intimate living situation, it was difficult to keep secrets from in-laws, especially to hide oral pills or condoms. Our findings suggest an implicit reluctance to the use of contraception attributed to the persisting taboo around having sex without the intention to reproduce and using contraception indicated a desire to have sex for pleasure, in the house of the in-laws. One woman explained how she would sleep on the floor if she and her husband took a nap during the daytime so as not to disrespect her in-laws who were awake in the house.

**“If she would ask, he would allow – the dynamics between young spouses in rural India – an explorative study”**

**(Summary of unpublished work)**

This paper includes both men and women’s voices with regard to reproductive decision-making between recently-married couples in rural areas of India. Our findings from this study highlight the Indian young and rural ‘couple-unit’ as supportive and interactive, who together negotiate reproduction to respond to social expectations. However, there is a notable communication gap with regard to modern contraception and young couples do not have the tools to initiate such discussions, nor do they know whom to turn to for advice without jeopardizing their reputation. Moreover, both young women and men express sexual urges and desires, and young women in our study reclaimed their sexuality by expressing their urges as well as their right to initiate intimacy and sex with their husbands. These findings are in sharp contrast to the commonly painted picture of the young Indian women as chaste and submissive. The male participants supported this statement and expressed how their wives also ‘got hungry’ for sex just as men do. However, the fear of unintended pregnancies was forthcoming, especially among the women, and acted as a limiting factor in their sexual expression, hampering young couples from fully enjoying sex.

# Discussion

The aim of this thesis is to identify means to simplify and increase access to reproductive health in low-resource settings, focusing on medical abortion and contraception, in a context where abortion is legal. This thesis has its foundation in human rights and advocates that effective contraception and safe abortion care are prerequisites for reproductive health. Enabling access to such services can decrease maternal mortality and promote women's social status further resulting in a more equal society. Based on the studies in this thesis and previous research, I argue that simplifying and demedicalizing reproductive health services allows for an increased access to essential health care services. Further, the simplification of services would result in women's decreased dependency on health infrastructure and service providers and their increased autonomy in obtaining reproductive health care. This thesis uses India as a springboard, however, I argue that these findings can be applied in other low-resource settings where abortion is legal, provided that the interventions are contextually adapted. I will therefore use the definition of access, in terms of accessibility and ability, and the conceptual framework of access where access is situated in a micro- and macro- environment, and that was presented in the beginning of the thesis to discuss our findings. I argue that conceptualizing our findings and discussing them in light of existing research and practice can contribute with a theoretically sound momentum and can be used beyond rural Rajasthan in the pursuit of the SDGs by 2030.

Important to keep in mind throughout the discussion applying the concept of access to health care services to our findings is that the women in our studies are not sick, however, they are in need of health care services to fulfil their sexual and reproductive health and rights, as healthy women of reproductive age.

## Addressing the Research Gaps

### Simplified Medical Abortion for All

The results from our RCT add a dimension to the existing literature on medical abortion by showing the acceptability, efficacy, and feasibility of allow-

ing women in a low-resource and rural setting to assess their abortion outcome using an LSPT and a pictorial instruction sheet at home. Importantly, we showed that women with no or little educational attainment, no phone and limited autonomy are fully capable of assessing their abortion outcome and seek additional care if they experience adverse side effects, identify warning signs or have a positive pregnancy test. To follow up after an abortion can serve several purposes, for example, address side effects and treat incomplete abortions, however, such symptoms rarely coincide with the scheduled follow-up and, as was seen in our study as well as in previous studies [72, 159], women facing these problems are likely to seek care sooner. Consequently, the main reason for follow-up is to exclude the rare, however crucial event of on-going pregnancies [40, 159]. Yet, in-clinic routine follow-up poses unnecessary direct and indirect costs for both women and health systems, and may be especially burdensome for women with low autonomy and limited financial resources and women commonly drop out before completing follow-up. In the updated global strategy for women's, children's and adolescents' health there is an identified need for innovation to address women's health [160]. Our study suggests the efficacy, feasibility and acceptability of a scalable and simple innovation that with small means can increase access to safe abortion care in low-resource settings. Nevertheless, the context and prerequisites are important to consider in the implementation and roll-out of simplified medical abortion, and in our study we saw a tendency for not having carried out the LSPT before the follow-up visit among women with less formal education and who resided in the rural areas. Hence, it is important to ensure extensive explanation and counselling at the time of mifepristone administration [150] as well as the provision of adequate information materials such as the pictorial instruction sheet that was found to be helpful and was associated with positive outcomes in our study. In line with this finding, a study from Nepal emphasizes the importance of extensive explanations to improve women's performance and acceptance of home administration of misoprostol [161]. Moreover, self-assessment after early medical abortion using an LSPT and a checklist was previously shown to be effective in a high-resource Nordic context [79] and feasible over time in the United Kingdom, in both hospital and primary health care settings [162]. However, both studies were carried out in very different settings compared with the low-resource, primary health care setting where our study was conducted. In a similar manner, research has suggested feasibility and effectiveness of telephonic follow-up combined with a semi-quantitative pregnancy test used at home in different contexts [80, 81, 163], although none of the studies were conducted in a low-resource and rural setting and all required the ownership of a phone.

Due to the nature of our RCT, and the low-resource setting where it was conducted, I argue that our findings are generalizable to different settings with similar low-resource contexts and where abortion is legal. Considering

the level of vulnerability of the women in our study setting in terms of poverty, educational attainment, bodily autonomy and social expectations of being a woman, it is likely that women in many settings can assess their abortion outcome successfully, provided that they are given with adequate and appropriate information and tools to do so, and that there is a system in place for handling interim or unscheduled visits if need be. However, to further establish the safety of simplified follow-up after medical abortion, a larger study including different contexts may be needed, as medical abortion has a high success rate, adverse events and severe complications are very rare, and our study may not have caught such events. Moreover, the pictorial instruction sheet and the counselling need to be tailor-made to the context where the intervention is to be rolled out. In support of the suggestion that simplified medical abortion is generalizable, the WHO recently released their recommendations on health worker roles in the provision of abortion care and post-abortion contraception, where they recommend women's self-assessment after early medical abortion [67, 164]. Their statement on its feasibility and efficacy in a low-resource setting where the majority of women have no or little formal educational attainment is largely derived from our research and reads as:

Self-assessing completeness of the abortion process using pregnancy tests and checklists is recommended where both mifepristone and misoprostol are being used and where women have a source of accurate information and access to a health-care provider should they need or want it at any stage of the process. There is evidence that the option is safe and effective including in low-literacy, low-resource settings [67].

In addition to conducting self-assessment post-medical abortion, it is widely known that women can administer misoprostol and expel the pregnancy at home [53, 69, 70, 75, 161], however, the research mainly includes women with educational attainment and where emergency care is readily available. Our research adds on to the evidence-base by showing that women with no or little educational attainment, residing in areas where access to emergency care is limited and who opted for home-use of misoprostol did not affect the abortion outcome, nor did it effect the efficacy or acceptability of the home-assessment.

Research is currently investigating the feasibility of allowing women to administer mifepristone at home as well. Although the studies are carried out in different contexts (USA, Brazil and Nepal), the existing evidence caters to high-resource or urban settings and suggests safety, feasibility and effectiveness in allowing women to administer the mifepristone at home [165–168]. Importantly, this has resulted in a decreased need for sick-leave from work as a consequence of the abortion and an increased acceptability of the medical abortion method because the women can conduct the abortion at their

own convenience, commonly during a weekend [166]. The recent evidence is important and paves the way for increased access to medical abortion, however, future research must include low-resource, primary health care settings where women have low or no educational attainment and their autonomy is limited. Finally, in line with previous studies [49, 50, 55, 161, 169–171], our research suggests the efficacy, safety, acceptability and feasibility of medical abortion at the primary health care level in a low-resource setting and that the major reason for dissatisfaction was incomplete or failed abortion.

In summary, our findings speak to the de-medicalization of abortion also in a low-resource setting, and suggest that leaving some or most of the sub-tasks of medical abortion in the hands of women, can increase access from both a health systems and a community perspective.

### Intra-abortion Contraception & Family Planning

Contraceptive services are included in comprehensive abortion care and are commonly referred to as post-abortion contraception. It is important to initiate contraception soon after an abortion due to the rapid return of fertility, sometimes within 10 days post-abortion, however, more often before the following menstruation [59]. A concern, raised by policy-makers and providers, with regard to simplified medical abortion is the potential loss of opportunity to provide contraceptives. It has been shown that the abortion provides a window of opportunity to motivate women to initiate contraception [89, 172, 173] although at the same time it poses challenges on the care provider in terms of counselling skills and responsive health services [174]. However, when considering decision-makers' and care providers' concerns about lost opportunities for contraceptive provision in the case of simplified follow-up in India, it is important to take a look at the current post-abortion contraceptive use in India, which is very low. A population-level study investigating contraceptive use and continuation post-abortion in India show that only one third of women initiated a method post-abortion; 24% used condoms 21% used oral pill 8% used copper-IUD, 28% used a traditional method and 19% obtained a sterilization [175]. In comparison, our study on post-abortion contraceptive use indicates a nuanced picture and an overall use of modern contraceptive methods of 33%, where only 4% of women preferred sterilization. Interestingly, 89% of the women had the intention to use contraception and the majority of women preferred to use injectables. This is similar to what was seen in a Vietnamese study of post-abortion contraceptives where 87% of women had the intention to initiate contraception, however in contrast to our study only one third of women intended to adopt a user-independent method such as the injectable, IUD or sterilization [176]. It is also important to consider that women often drop out before completing follow-up. This was also seen in our study reflected by the greater loss-to-

follow-up in the in-clinic follow-up group in spite of provision of travel reimbursement upon in-clinic follow-up. Importantly, in our study there was no difference in contraceptive use and continuation post-abortion over time in women with home-assessment compared with women with in-clinic follow-up. Nevertheless, women in the home-assessment group initiated their contraceptive method later, most commonly after their first period post-abortion. This can be discussed with regard to the study design and service provision because women in the home-assessment group were discouraged from returning to the clinic before their home-based outcome assessment, unless they suffered any adverse side effects. Interestingly, the women in the home-assessment group were more motivated to initiate a reversible contraceptive method, particularly the injectable and the copper-IUD, indicating that providing women with freedom, autonomy, and timely and correct information with regard to contraception may motivate contraceptive use. This suggests a different approach than the coercive and top-down approach that the Indian government has typically taken to family planning and counseling [137]. An intervention study in Bangladesh showed remarkable increase in the use of LARCs post-treatment of incomplete abortion, indicating the scope of quality in-service training and the availability of LARCs (IUDs and implants) [177]. The WHO guidelines with regard to post-abortion contraception advise that most contraceptive methods can be provided as early as on day one of a medical abortion [40]. Several studies show that providing LARCs at the time of the abortion or as soon as the pregnancy is expelled is feasible and safe [178], and, in addition, the use of LARCs decreases the risk of future unintended pregnancies and removes the responsibility of the woman to adhere to taking a pill every day or negotiating condom use [61, 88, 96].

A literature review of the reasons associated with contraceptive failure suggests that ambivalence in the motivation to avoid pregnancy is a major reason for women's poor compliance to contraception, followed by lack of awareness or misconceptions resulting in imperfect use [179]. Interestingly, our results indicate that women are highly motivated to use contraception in terms of both choosing a method of preference and having an actual plan of when to initiate the method and is in line with previous research that suggests that abortion is an opportunity to motivate women to use contraception [176, 177, 180]. This goes hand-in-hand with our qualitative findings and indicates women's reproductive intentions and self-identified need for effective contraception. However, women may not have sufficient agency to enact their intentions and fulfil their needs, given their lack of awareness with regard to contraception enforced by social norms and the stigma on contraceptive use. Similarly, a study among Zanzibari women suggested that partner approval of contraceptive use was one of the major determinants of women's contraceptive intentions post-abortion [181]. Nevertheless, we also identified ambivalence in the motivation to avoid pregnancy due to the im-

portance of fertility and that women preferred to be on ‘the right side of fertility’, meaning that they would rather conceive and abort if necessary, than to not conceive at all.

Our research makes a strong case for early provision of contraception integrated with the abortion provision, not only for women opting for simplified follow-up or home-use of misoprostol, but for all women. Hence, I suggest, underpinned by research from different contexts, that providing women with adequate information and a choice of a range of methods as early as on day one of their medical abortion can facilitate women’s initiation of contraception in response to the women’s self-identified need and motivation.

The importance of contraceptive counselling must be valued and the means of counselling must be revisited. Our results show the positive impact of contraceptive counselling on women’s use of reversible contraceptive methods. However, we also demonstrate that young women did not use contraception because they could not fit it into their everyday life. This suggests the importance of context-appropriate counselling entailing a counselling programme that considers the woman’s perspectives and opportunities to use contraception, especially with regard to young women. Due to young women’s increased vulnerability, health care providers must be trained to reach out to young women as well as how to provide adolescent-, and youth-friendly services [28]. Moreover, the widespread use of traditional methods such as the rhythm method observed in our study must be recognized and addressed in the healthcare encounter. The young women in our study found the rhythm method to be the only socially beneficial and feasible method for contraception. However, none of the women knew how to use it correctly, nor did they know that even with correct use, this method is not considered effective to avoid pregnancy [92]. The often-used ‘one method fits all’ approach in the Indian context must be altered and respect the women as individuals with different needs and preferences. Previous research highlights the importance of proper communication between care providers and women, and suggests that the miscommunication contributes to unplanned pregnancies [182]. In addition to miscommunication, several provider-based barriers have been identified with regard to contraceptive provision, especially to young women and adolescents. Such barriers include the denial of a contraceptive method on the basis of age, parity, marital status, or lack of spousal or parental authorization [183] and must be addressed in policy and strategic documents as well as processes of implementation [28]. Because we carried out our studies in four NGO-run clinics, the providers had received additional in-service training and did not receive incentives for the provision of sterilization, a custom observed in the public health system. The two private clinics were oriented with regard to contraceptive counselling before study initiation, however, the quality of the contraceptive counselling was questionable and was often bridged by additional counselling by the research assistant or a referral to the NGO-run urban site, which also provid-

ed contraception for free in contrast to the private clinics. This again shows the importance of responsive counselling. In India, social acceptance of reversible contraceptive methods was always limited [184]. Additionally, the public health facilities have a poor reputation in terms of reproductive service provision, and are known to ignore women's privacy [132]. Moreover, our studies witness the persisting misconceptions and lack of awareness among women, especially with regard to LARCs. It is known that when young women are provided proper information about the different methods available, they are more likely to opt for and continue with LARCs [62, 96, 98, 185].

In terms of methods of preference, many women in our study preferred the injectable, a contraceptive method that is not included under the NRHM. This method seems to have gained popularity among women, and is frequently requested in other parts of India as well [186]. The reasons for women's preference of the injectable may be explained by women's limited agency to use a modern contraceptive method at home. Modern contraception is not socially accepted and hence its use difficult to justify, especially for young nulliparous women. The use of contraception may jeopardize the women's status as well as their marriage. Given that the injectable can be kept a secret from in-laws, while still giving women the feeling of control and opportunity to discontinue on short notice, this method may be perceived as a more feasible choice for the women. Unfortunately, studies from another part of India indicate high rates of discontinuation of the injection over time due to experienced side effects [186]. This may be attributed to the limited counselling of potential side effects making the women unprepared and less accepting towards side effects once they occur. Research suggests that informing women about potential side effects may enhance their level of acceptance of a method [94]. The women in our study were reluctant to use copper-IUD. This reluctance may be due to persisting fear and misconceptions about the copper-IUD, or due to the lack of knowledge about the method [62, 96, 185]. However, judging from our qualitative study, it may well be the women's perceived lack of control and the dependence on a health care provider to remove the device, rather than to stop using it at their own discretion. Hence, contraceptive counselling must address the common misconceptions and fears and it has been suggested that doing so before obtaining the abortion can motivate initiation of IUD [96, 185]. Moreover, the providers must inform the women of their rights to discontinue at any time, as well as their right to switch method to one that suits better. Interestingly, in a study of post-abortion contraception in India, the small proportion of women who initiated copper-IUD had better continuation rates compared with any other contraceptive method [175]. Nevertheless, it is important to consider the risk of increased menstrual bleeding in copper-IUD users, and the potential effects that may have in contexts like India where anaemia is one of the top causes of ill-health [95]. The introduction of the highly effec-

tive LNG-IUS or implant, commonly resulting in decreased or no menstrual bleeding and shorter bleeding period post-medical abortion [88, 92] could have great potential in the Indian context. However, to reach out to all women, they must be subsidized and provided under the NRHM.

## Roadmap to Increased Access to Abortion – The Promise of Simplified Medical Abortion

This thesis suggests that successful implementation of simplified medical abortion and ‘intra-abortion’, person-responsive contraceptive services are crucial components to increase access to safe abortion care in low-resource settings where abortion is legal. Moreover, providing context-appropriate services in accordance with women’s opportunities to make reproductive decisions could increase women’s access to and use of modern contraceptive methods.

There is a political momentum in India to scale-up effective abortion services with a focus on medical abortion. The recently released guidance document on ensuring access to safe abortion clarifies under what circumstances abortion can be provided; the governmentally-endorsed Reproductive Maternal Newborn Child and Adolescent Health strategic approach that stipulates that medical abortion (mifepristone and misoprostol) must be available in public health facilities [110]; and the recently released proposal for the MTP Amendment Act (2014) that suggests an increased provider base for the provision of early abortion, especially relevant to medical abortion [115]; all create an enabling environment for increased access to safe abortion in India.

I will now argue why simplified medical abortion can enable increased access to reproductive health care. I will do this by structuring our findings in the context of existing research under the definition of access that was presented earlier in the thesis, and that considers both the health services and the women’s perspectives by including the five demand-side dimensions (ability of) and the five supply-side dimensions (accessibility) of access.

### **Accessibility**

An important step towards increased accessibility to safe abortion services in India is to readily implement medical abortion and support providers in their decision to offer medical abortion. To facilitate this, misoprostol and mifepristone were recently added to the list of essential medicines that should be available in the public health facilities in Rajasthan, an initiative driven by our partner organisation together with the state government. The provision of medical abortion services is feasible in a primary health care setting and by a range of health care workers, if they are properly trained [40, 67, 187, 188].

Allowing medical abortion provision can ensure *availability* and *accommodation* of abortion services, in remote areas as well as urban. In a comprehensive study of access to abortion services in the public health system in Rajasthan, several barriers to abortion services were identified: few health facilities employed an MTP certified provider, and only 15% had the essential equipment for MVA; and 7% of primary health care facilities had access to electricity, at least four beds, piped water and regular transport [119]. Given the nature of medical abortion and with the acceptance of the new MTP Amendment Act (2014), medical abortion can be provided in facilities that lack these amenities, however, the facilities must ensure the availability of skilled providers [40, 67].

Our studies confirm the *acceptability* and feasibility of medical abortion in a low-resource setting; in fact, we show that women prefer medical abortion over surgical abortion in the event of a future abortion. Moreover, we show women's preference of fewer visits and more autonomy in the abortion process in terms of home-use of misoprostol and home-assessment of the abortion outcome. Additionally, allowing various types of providers to provide medical abortion services can enhance acceptability among women [65, 66, 189]. However, to ensure accessibility it is also important to consider the health care providers' perspectives. If providers do not find the services acceptable they are less likely to offer them. In line with this observation, certified abortion providers in India are reluctant to provide medical abortion explained by their limited awareness and misconceptions with regard to medical abortion [190]. Similarly, in a workshop with certified abortion providers that was held as a part of our PDC between Sweden and India, doctors voiced concerns with "leaving the women bleeding" and feeling uncomfortable with sending the woman home without knowing that her abortion was complete. Moreover, several participants communicated that "why use medical abortion when they would have to evacuate the pregnancy anyway, it is better to do it all at once". These barriers, lack of knowledge and misconceptions, as well as considering stigma-free and non-judgemental abortion care provision especially to young people must be addressed at a health systems level in terms of both in-service training and to add abortion to the curricula for educating medical students [190, 191].

Our studies did not include the provider perspective of home-assessment, however, during the adaptation phase we ensured proper training and explanation of the intervention at several occasions to avoid doctors', nurses' and research assistants' misbelief in the efficacy or the safety of the intervention. However, more research exploring providers' attitudes is needed to understand the barriers to simplified medical abortion. With regard to expanding the provider base, a survey study was recently conducted to explore health care providers' attitudes towards task sharing. Interestingly, task sharing is poorly endorsed among the certified abortion providers, while nurses and alternate health care providers support task sharing and believe that they can

provide medical abortions if adequately trained [66, 192]. This is also reflected in the discourse around the MTP amendment proposal, where the proposition to allow nurses and Ayurveda doctors to provide early abortion was deemed controversial and was officially opposed by the Indian Medical Association. This resulted in a political and medial discussion where the medical society voiced unsubstantiated arguments referring to how task sharing would jeopardise women's health [115], while I argue that the underlying reason for the strong opposition are of an economic nature and professional conflict. This was also seen in a systematic review of task shifting of midwifery services, where doctors were both reluctant and supportive, depending on the means of implementation and doctors' involvement in the task shifting process [193]. Finally, to ensure acceptable services, health care providers must have adequate support and supervision, and values clarification must be included in their training to avoid discrimination and stigma, to allow all women access to acceptable abortion services, regardless of marital status or number of previous children [194, 195].

Enabling access to medical abortion in primary health care settings, especially in rural areas, can increase *approachability*. If abortion services are readily available in rural clinics, something that is more likely to occur with the acceptance of an increased provider-base of abortion services and the implementation of medical abortion, women's distance to the clinic will decrease and their opportunity to reach the clinic increases. However, to motivate women to seek abortion care at the public health facilities, the public health system must improve its reputation with regard to reproductive health services. It was clear in our study among young women that none sought abortions in the public health system. Similar tendencies were seen in a recent survey carried out in another Indian state [196].

In terms of *affordability*, in our study the medical abortion was offered at a cost of 400 INR, equivalent to approximately 4 USD, and covered the expenses of the service provision. The private clinics in the city were more expensive and offered medical abortion starting from 1000 INR. Considering the available drugs and the minimal need for advanced equipment, facilities, and complex medical interventions, medical abortion enables affordable service provision and could be provided at a very low cost, or even free of charge in the public health facilities. Additionally, if medical abortion provision is simplified in terms of decreased number of visits, and increased provider base for consultation and provision, the health system costs are likely to decrease. Decreased number of visits also increases affordability for women in terms of indirect costs such as transport and loss of income. Transport costs in particular were a major barrier to returning to the clinic for follow-up, communicated by the women in our pilot study of the RCT [150]. Providing women with travel reimbursements increased the number of follow-up visits, however, dropout was still more present in the in-clinic follow-up group as compared to the home-assessment group. Decreasing the

costs of medical abortion can make it more attractive to younger women and may result in women's decreased reliance on their husbands or in-laws to obtain safe abortion services.

Important to consider for the purpose of simplified follow-up using the LSPT are the costs of the test. However, considering the saved costs of a decreased number of consultations and medical examinations, one can speculate that simplified follow-up is less costly over time. To establish the cost-effectiveness, further research should be conducted. Establishing cost-effectiveness of LSPT use may motivate policy-makers and hospital managers to implement simplified follow-up after early medical abortion. Moreover, at the time of the study there were no LSPT tests available on the market, and hence we used the DUO-test ([www.vedalab.org](http://www.vedalab.org)) with an LSPT component, however, today there is at least one commercial company in Europe that produces LSPT tests. With the increased attention to the use of LSPT tests for abortion follow-up, enforced by the WHO recommendations, it may motivate the production of LSPT tests and, considering the current production of pregnancy tests in India, I argue that proper advocacy can result in a locally-produced, affordable, LSPT test.

Finally, in terms of *appropriateness* of services, medical abortion fulfils the criteria for efficacy. With regard to quality of care, the more autonomy the women have in their abortion, the less dependent they are on their abortion providers and the more protected they are against stigma, discrimination and poor quality services such as conditional sterilization or unnecessary surgical interventions. Hence, the de-medicalization of abortion is likely to enhance appropriateness of the service. Moreover, the recently published clarification of the MTP Act and the PC & PNDT Act must be readily distributed and included in any abortion training to avoid incorrect interpretations [110]. In a survey from Rajasthan, health care providers thought abortions were only allowed if a woman was married, if the husband accompanied the woman, or the woman was more than 18 years old [119] indicating the persisting lack of knowledge among health care providers in Rajasthan. Moreover, the one woman in our study who had obtained her abortion, against her will, in the public health facility shows the persisting lack of privacy and provision of information to the woman as well as the continuation of coercive treatment, similar to what was seen 15 years ago [132]. Women's right to privacy and to be fully informed about the procedure are important aspects to consider when ensuring appropriateness [119].

### **Ability**

In this context, women are well aware of abortions, however our study of young women's reproductive choices indicate that women are not necessarily aware of what a safe abortion is, and how and where to obtain it. Abortion is different from other health care needs because being pregnant is not a disease as such and hence the *ability to perceive* the need for care may not be

as applicable. Although, it has been shown that younger, and more vulnerable, women are more likely to seek abortions late. One of the explanations are the lack of awareness of pregnancy symptoms, and hence delayed discovery of pregnancy, however, research indicates that stigma and discrimination plays a major role in women's delayed abortion seeking [197]. In our RCT, women sought abortions early (median gestational age 6.6 weeks) indicating awareness and the ability to perceive the need to seek abortion, keeping in mind that all women were married, with a median age of 26 years and most women already had at least one child.

Health systems must educate women of their rights to seek abortion as well as what their sexual and reproductive rights entail and how they can be attained in this context. In particular, young, recently-married women have little access to and awareness of the reproductive rights they are entitled to from a human rights perspective because such rights are not always enforced in the context in which they exist. Moreover, women are not aware of how to effectively avoid unintended pregnancies, and hence resort to methods they believe are effective, such as the 'rhythm method', and complement these methods with abortion when needed. This does not mean that the women in this context use abortion as a contraceptive, an argument often used against increased access to abortion: the women use abortion as an answer to failure of traditional contraception. The lack of an effective means of family planning was obvious in our study, and is similarly argued in other studies from India [196, 198, 199]. However, the married women's straightforward relationship with abortions and their frequent resorting to abortion services, whether safe or unsafe, is witness to women's agency to address unintended pregnancies once they occur. Providing women with the knowledge of their rights, and where to obtain safe abortion services through existing structures such as in school, through VHWs or ASHAs, through community outreach programmes, for example, will give women the *ability to seek* safe abortion services. Equally important is to enable contraceptive services in general and as part of the abortion services [40, 200, 180]. Increasing awareness of available methods and addressing the social stigma attached to contraception and abortion will allow women to take charge of their bodies and give them the ability to seek services according to their needs.

In the context of seeking health care it is also of great relevance to address women's autonomy and capacity to seek services and the structural barriers that may influence health care seeking [6]. This issue is complex in the Indian setting, especially among rural young women. Women are subjected to patriarchal structures and have limited autonomy, especially young women [201–204]. Research often portrays women as passivized victims, incapable of making decisions. In contrast, our studies emphasize women's capacities, using their capacity to self-assess their abortion outcome as an example. Moreover, I argue that the women in our studies do have more agency than women in this setting are normally portrayed to have; nevertheless, their

agency is limited under the norms and social expectations present in their context. Due to their restricted autonomy and agency, they prefer strategies that are socially accepted, and, if they must violate the social norm, they do so in the most harmless way possible, in this case, traditional contraception and abortion rather than modern contraception. An effect of their restricted autonomy was obvious in their means of seeking and obtaining abortions and their reliance on their husbands to obtain the abortion. This is similar to what has been observed among women seeking abortion in Burkina Faso, where women in situations of dependence choose clandestine abortions to keep their abortion secret to avoid the risk of social rejection [205]. Increasing access to acceptable abortion services, and improving the reputation of the public health system, can therefore increase women's options to seek safe abortion services independently.

In line with this finding, women's *ability to reach* and *ability to pay* are affected by their status and role within the family. Women in our studies did not have a personal means of transport, however, they used the bus, or their husband dropped them off. Moreover, the women rarely had phones of their own, and they were not economically independent. Clearly, this affects their ability to reach a clinic, especially if the clinic is in the city, far away from where the women reside. In addition, most women have domestic chores or farming that requires their presence throughout the day and they cannot leave to seek abortion services without asking for permission from the mother-in-law or sometimes the husband. Most of the time abortions were kept a secret from the mother-in-law and hence women had to come up with other reasons justifying their absence. Such excuses, such as bringing the child to the doctor or accompanying someone else's child if the woman did not have one herself, could only be used a limited number of times. This made it difficult to justify several visits, and women would therefore drop out of what they perceived as unnecessary visits.

Finally, the *ability to engage* is clearly shown in our studies. Women, regardless of educational attainment, social status, residency and age, are capable of assessing their own abortion outcome using an LSPT and a pictorial instruction sheet, given that they are provided adequate and appropriate information and instructions with regard to side effects and danger signs. Decision-makers and stakeholders, such as doctors or hospital managers, justify unnecessarily complicated, time-consuming and provider-dependent abortion and contraceptive services, with women's safety. They argue, often insubstantially, that women are not capable of conducting components of a medical abortion by themselves, and that health care providers, other than doctors, cannot provide abortions. An example of this is the recent discourse in India around the MTP amendment, justifying its rejection with women's safety [115]. Allowing women to carry out most sub-tasks of the abortion at their own convenience may decrease their fear of confinement by the health care system. Similarly, providing women with complete information regard-

ing contraceptive methods, including potential side effects, as well as explaining and respecting their rights to discontinue at their convenience, can increase women's feelings of having control of their fertility and hence motivate the use of LARCs. Regardless of evidence clearly showing the benefits of allowing women *to engage* in abortion and contraceptive services, we see little action. Hence, the ability to engage with regard to abortion is already present. Now we must create responsive health systems where women are allowed to engage in their own reproductive choices and subsequently take charge over their own bodies.

In summary, several abilities discussed above would be addressed by allowing simplified medical abortion, presuming that the women were given the medical abortion pills, thorough instructions on how to use them, a pregnancy test kit and the option to initiate a contraceptive method on day one. This would lead to decreased travel costs, time-loss, need to justify leaving the house to the in-laws, dependency on their husbands to obtain SRH services, opportunities to be treated badly by a health care provider, and risks of unnecessary or involuntary interventions. At the same time, the feeling of autonomy and being in charge of their own body will increase and enable women's self-efficacy in their reproductive decision-making.

## A Matrix of Access

To understand how access to SRH services plays out in the society it is important to consider the influential factors at micro- to macro- level as laid out under conceptual frameworks. To do this, I have created a matrix of access adapted from Obrist and colleagues' access framework [136] combined with the definition of access as defined by Levesque et al [134]. This matrix of access illustrates the prerequisites of access to health care, including the health system's provision of quality care services and the people's ability to utilize services. By defining access, in terms of ability and accessibility, and including a gender component, I go beyond the traditional supply-side of access and acknowledge the influence of gendered structures on the accessibility as well ability dimension of access. Further, by situating these dimensions of access in its micro- to macro- environments, I acknowledge the structures and contexts that lay out the prerequisites for access to health care, as well as the importance of gendered structures on both micro- and macro- levels.

I define the vulnerability context as macro-level because it lays out the prerequisites of the individual and community's living conditions. The vulnerability context reflects the setting in which people exist in terms of available resources such as water and electricity, whether rural or urban, and the infrastructure in place that enable education, transport, and health care as well as cultural practices and social networks. In the context of this thesis, the vulnerability context was highly influenced by gendered structures in

general, and patriarchal structures in particular putting women in particularly vulnerable position. On the meso-/micro-level I have identified dimensions of ‘living conditions and resources’ of particular relevance to access to SRH services in a low-resource setting. These dimensions are influenced by the vulnerability context and entail socio-cultural norms primarily referring to the childbearing norms, marriage customs, and the patriarchal structures within the family restricting women’s autonomy and agency; moreover, the socio-economic status in terms of educational attainment and financial autonomy; the marital status and the number (and sex) of children.

The prerequisites of access to health that are created and governed at the governance- and vulnerability- level (macro), and enforced, sustained and implemented at a health systems-, community- and individual- level (meso to micro) result in the access, or non-access, to health care services, which ultimately result in the corresponding accessibility or ability to attained health, satisfaction and equity. Equity in the case of abortion and contraceptive services can be interpreted in two ways; equitable access to health care, and a step towards enabling gender equity or equality in social processes, which is a result of women’s access to reproductive health.

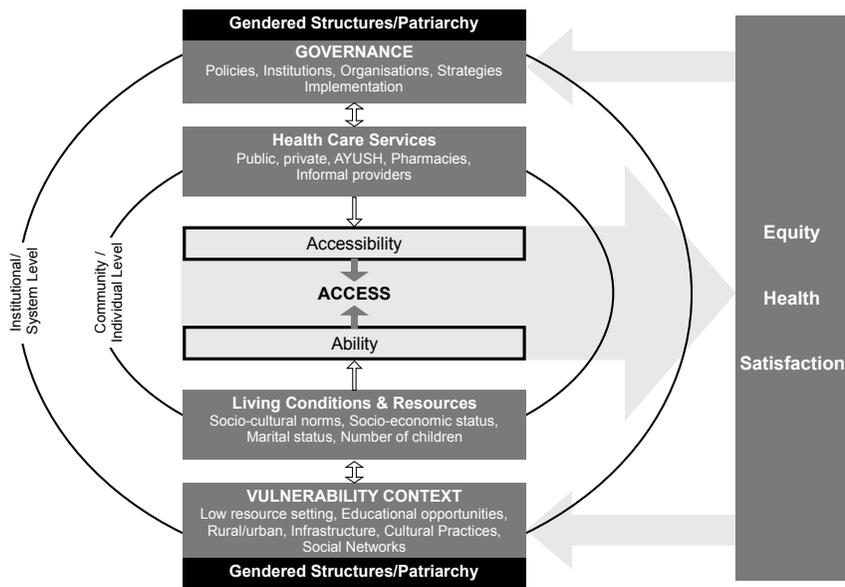
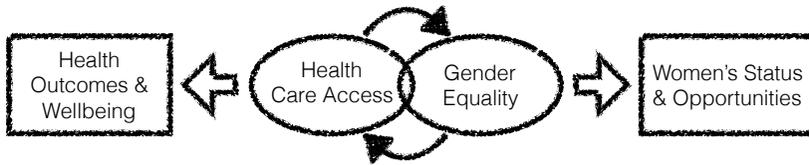


Figure 9. A Matrix of access by Paul, adapted from the access framework of Obrist et al [136] combined with the definition of access by Levesque et al [134] to fit the context of the study and explicitly highlight the factors identified in this thesis that influence access to sexual and reproductive health services, and the explicit influence of gendered structures.

In the SDGs, health for all and gender equality are stipulated as two separate goals; however, the two goals are closely intertwined where the status of

gender equality influences access to health care, and access to health care, influences attaining gender equality (*Figure 10*).



*Figure 10.* The interplay between access to health care and gender equality.

This argument is underpinned by the findings from our qualitative studies that clearly exemplified women's limited opportunities to access effective means of contraception and abortion because of their social status, the social norms and the cultural expectations of them as women. Yet, there are evidence-based, cost-effective, methods and known strategies for family planning available in India. Some of these are covered under the NRHM, however, these are not necessarily the methods that women consider feasible to use. For example, the women in our studies preferred the injectable and would potentially also prefer the hormonal implant or LNG-IUS if made available, while the NRHM provide the methods that are convenient and inexpensive for the health system to provide, such as the oral pill, the copper-IUD and sterilization. These methods may be cheaper to provide, however, they are not cost-effective in comparison with hormonal LARCs [99], moreover, women's non-use of available contraceptive methods results in their resort to abortions. This poses an avoidable burden on the health system and more importantly it may jeopardize women's health. Given India's focus on decreasing the TFR, and their recent shift from the sterilization target approach to a more option-based approach, it is important to point out that the public health system still fails to provide methods that are requested by and feasible for the women. This observation illustrates an example of policies with potentially good intentions, to move from a coercive sterilization approach to giving the women a choice of various methods of contraception. However, the health system's failure to roll out person-responsive services and methods that are feasible for their target group, in this case the women, result in missed opportunities to cater to the women's reproductive needs as well as the countries target to limit the TFR. This is an example where a more gender-responsive approach could improve women's opportunities to access effective contraception. To be gender-responsive, we must understand how gendered structures come into existence and how they interact with practices and structures in the society [10]. The gendered structures that emerged in our studies and that have been identified in other studies from India include; the patriarchy, women's social status, the importance of fertility, the top-down approach in the health care encounter where women's voices are diminished, the in-built dependency of husbands through the re-

quirement of being married, or the husband's consent to obtain services, to name a few [119, 206]. These gendered structures and practices limit women's SRH choices, nonetheless, they are rarely directly addressed in policies, interventions and service guidelines with the aim to improve women's SRH.

Importantly, young women and in particular adolescents are especially vulnerable to the lack of access to SRH services. This has been acknowledged by the recently adopted adolescent health strategy in India, where early pregnancy was addressed as a major contributor to ill-health among adolescent girls [207]. However, because of the gendered structures enforced at the community and the health systems level young girls' opportunities to access contraception and safe abortion services remains strongly reduced due to their low social status and their limited reproductive agency, as we show in our studies. This means that young women and adolescents need particular focus with regard to enabling access to SRH services.

In India, and to a certain extent in many countries, the persisting patriarchal structures, patrilineal kinship and the ideal of men as the breadwinners as well as being in-charge of the family economy, contributes to unequal opportunities to access health care and the right to bodily integrity. This is particularly clear when looking at how women-specific health services are provided, such as abortion and contraception. While it is of great importance to acknowledge India's long withstanding and liberal abortion law, one cannot help but wonder why abortions still contribute to such a great proportion of maternal mortality and why sterilization still represents the most common method of contraception, even though our results clearly indicate that this is not what the women desire. Moreover, research commonly focuses on the oppression and subordination of women, especially in the Indian context, rather than women's capacities and opportunities to attain health in the context where they exist, especially with regard to SRHR. Our studies show women's capacity to assess their abortion outcome, and their active role in managing reproduction within social norms. Identifying such opportunities can contribute to the recognition of the social changes that are needed to address the existing gender imbalances [12].

An excellent example of gendered structures is the discourse and events related to gender-biased sex selection in India, where women, and families, are accused of conducting abortions if they believe the foetus is female. To respond to this, the government illegalized pre-natal diagnostics unless there were any clinical indications for such diagnostics. However, the effect and interpretation of the act resulted in reduced access to abortion services in general [110], abortion providers were impeached and restrictions on availability of medical abortion pills in pharmacies and health facilities were introduced [125]. Regrettably, the women's voices were not taken into account when addressing 'their practice' of gender-biased sex selection. Instead, the consequent reduced access to safe abortion services resulted in forcing women to conduct unsafe abortions, because the demand for abortions did

not decrease [125]. In fact, only a very limited proportion (9%) of abortions in India today are estimated to be sex-selective [110]. Moreover, this discourse has increased the stigma around women seeking abortion [208]. Our studies show the persisting acknowledgement of the social benefits of having a son, however, we could see a change in attitudes with regard to gender-biased sex selection, especially among younger women. This could be an effect of the government's recent efforts to promote education for girls [207] in combination with the governmentally-endorsed two-child norm. Moreover, it may be a result of the declining sex ratio, similar to what is seen in China, where women are suddenly 'valuable goods' [209]. Importantly, the women in our studies had no desire to carry out gender-biased sex selection themselves. This supports the argument that women may not be the primary drivers of gender-biased sex selection, but that it is an effect of women's lack of bodily integrity [125, 210, 211], and instead, they are subjected to the gendered structures in their society [210]. What is often forgotten in the discussion of gender-biased sex selection is women's use or non-use of contraception and the influence of son preference. Women in our studies, both RCT and qualitative, were more likely, or open, to use reversible contraceptive methods if they already had at least one son. In line with this finding, it has been suggested that women with one or more sons are more likely to get sterilized [128]. This is a major contributor to the declining sex ratio, however, it is rarely talked about and sterilization is continuously promoted and awarded [128]. Among the younger women in our study, having at least one child, regardless of sex, was encouraging enough for them to want to initiate contraception, indicating the persisting importance of fertility, while at the same time the decreasing obligation to have a son. Ultimately, gender-biased sex selection can only be addressed by increasing women's status in society, not by restricting women's access to essential health services. Increasing women's status may also motivate earlier initiation of contraception due to their increased bodily integrity, however, also due to the enabling of unprejudiced use of contraception, regardless of reproductive history.

While it is important to understand and respond to women's subordination in society, it is also important to recognise other gendered structures such as masculinity and its effect on men and men's involvement in women's SRH. Allowing men to support women and to include them in services that concern their reproduction as well, are equally important in the struggle towards gender equality. In our qualitative interviews with men, it was clear that men felt excluded and outside of their comfort zone when talking about contraception and family planning with their wives. Although the family plan was often a joint venture between husband and wife, the means of achieving the plan was rarely discussed, especially not in a preventive manner. We could identify a clear communication gap between husband and wife with regard to contraception. However, to conduct an abortion was often a joint decision and the men played an important role in obtaining the

abortion. However, the men's lack of awareness with regard to safety and suitable methods could jeopardize women's health in the attempt to fulfil the joint reproductive intentions. By including men in the family planning dialogue and empowering them to close the communication gap with regard to contraception, women can gain access to contraception and abortion services. Additionally, this dialogue would allow spouses to create a reproductive agency together, and can further facilitate their reaching of joint family planning goals.

Currently, the policy climate is enabling, and yet another global initiative, the SDGs, have set out to focus on women's equal rights, the empowerment of girls and to decrease maternal mortality and morbidity. However, these statements must trickle down to institutions, organisations, and processes and must be endorsed by stakeholders and decision-makers. Only then will we see an impact in the provision of health services. Health strategies must emphasize the importance of gender equality and equitable health care, and be designed to include women and men in reproductive health services, bearing in mind that these health services are not disease-oriented, but health- and rights-oriented. Additionally, ensuring access to the means and routes of service provision and the existing health infrastructure is crucial. Luckily, early medical abortion and contraception does not require a complex health infrastructure [40]. In the two most recent WHO guidelines with regard to abortion care, it is clearly stated that abortion care can be provided at different health system levels, by a range of different providers. Additionally, the guidelines suggest how the sub-tasks of medical abortion can be further task shared between health workers and even women themselves [40, 67], a recommendation also clearly shown in our study, removing the need for a complex health infrastructure and providing opportunities for increased access.

The matrix of access presented above is a tool to identify the crucial factors related to access to health care services considering both the demand-side and the supply-side of access within a macro- to micro-context. Ensuring access to equitable health care is a step towards gender equality, and addressing the gendered structures at the macro- and micro- levels can facilitate access to SRHR for all. For the purpose of India, the remarkable and rapid decrease of MMR is largely attributed to the decreased TFR seen over the past decades in India. However, the increased need for effective means to delay, space, and limit children is yet to be responded to. Additionally, the persisting high proportion of maternal deaths attributed to abortion must be, and can be eliminated. The Indian context must recognize the importance of SRHR entailing women's right to take charge of their bodies, in this case simplified medical abortion and the choice of a range of contraceptive methods. This thesis shows that women have resources for improving their SRH if they were to be given the opportunity to do so, resulting in direct benefits for the country and a step in the right direction in the post-2015 agenda.

# Methodological Considerations

This thesis is methodologically strong given its mix of quantitative and qualitative data. In addition, it deals with the defined problem of unintended pregnancies and that issue is currently on the political agenda and must be addressed in order to achieve the SDGs. The RCT provides a comprehensive investigation of the efficacy and acceptability of an intervention transferred from a high-resource to a low-resource setting, complemented by the cross-sectional follow-up study measuring contraceptive use. The explorative work allows a deeper understanding of the context and the circumstances of unintended pregnancies and highlights the voices of the young women, and men, residing in the same rural area where the RCT was carried out. In addition, because the intervention of the RCT was adapted to fit the study context, there were lessons learnt from the implementation of the study [150] that, in combination with our findings, can facilitate the implementation of the intervention in similar settings.

## Quantitative Studies

### Methodological Strengths

The RCT and cross-sectional study had several strengths. Primarily, to successfully carry out an RCT in a low-resource, primary health care setting is a strength in itself and was much facilitated by ARTH, our Indian collaborators. Moreover, the LSPT that we used was previously validated and tested for the purpose of simplified follow-up however, in a high-resource setting [77]. This was helpful in avoiding additional harms or risks and also guided us in how to design the intervention. However, given the completely different study setting, major adaptations were made, both to the study protocol and to the intervention. Another strength of the study was the long implementation adaptation phase that allowed us to really test on a small scale and adjust accordingly. Once the RCT started, the intervention was already routine at the study sites and both clinical and research staff were comfortable with all procedures. This decreased bias and errors in the data collection. The adaptation and implementation was a learning process and helped us to understand and interpret the findings of the RCT. Additionally, the monthly quality checks and the frequent research team meetings ensured that the

quality of data collection was maintained, and upon the event of any issues or difficult cases, these were discussed during the meetings. Because we could not carry out a blinded study, we ensured that the recruitment of women was blinded and that the women were primarily assessed for obtaining an abortion and provided the first pill and subsequently, after the doctor's encounter, that they were assessed for study eligibility and asked to enrol in the study.

## Methodological Limitations

The ability to carry out an efficacy trial in this study setting may be questioned, and a pragmatic randomized control trial investigating effectiveness would potentially have been more applicable. However, given the successful outcome of the study, we feel confident in the results and suggest that future studies should focus more on implementation and in-service data to evaluate the intervention under more 'normal' conditions and in different types of clinics, such as public facilities. A major limitation in this study was the basing of the sample size calculation on incomplete abortion, rather than on ongoing pregnancies. Ongoing pregnancies are very rare and would have made the sample size very big and hence made the study unfeasible. However, doing so would have allowed us to draw stronger conclusions and eliminate the risk of having studied too few women to discover ongoing pregnancies. Yet, there were a few women who experienced ongoing pregnancies, all of whom managed to successfully assess their abortion outcome. Additionally, the sample size was calculated using a two-sided 95% confidence interval, given the non-inferiority design of the study, the sample size calculation should have taken this into account and been calculated to the non-inferiority with a 97.5% confidence interval. This would have resulted in a larger number of women, however, given our high follow-up rate we surpassed our sample size and likely also the sample size if it would have been calculated according to the non-inferiority standard. For the purpose of assessing a self-assessment intervention, it is important to allow the women to carry out the self-assessment without any influence from a service provider or the research staff. All other studies that have assessed a similar intervention have used telephone follow-up or e-mail contact. However, given the low-resource setting and the lack of phone ownership, this was not possible in most cases and we had to carry out home-visits. To circumvent that the follow-up visit would bias the women's outcome assessment or acceptability, we explained the importance of carrying out the test in advance of the scheduled follow-up visit and distinguished between how many women had carried out the test before being contacted by the research assistant and how many needed a reminder to carry out the test. The research assistants were instructed not to help the women carry out or interpret the test, however, if they did so this was noted down in the questionnaire. In the clinic follow-up

group we faced problems with women not returning to the clinic for follow-up and in the analysed cases we can see a skewed distribution of more women in the home-assessment group as compared to women in the clinic follow-up group, however, the retention of women was sufficient to maintain power in the analysis. To motivate women to return we provided a small travel reimbursement; this was only provided to women who returned to the clinic for their in-clinic follow-up appointment. This may have increased acceptability among the clinic follow-up women, however, women in the home-assessment group often received a visit at home, which was also considered a luxury and could also have increased acceptability. Another limitation in terms of service provision was with regard to contraceptive provision and the dilemma of advising women in the home assessment group to not return to the clinic for follow-up when the clinical standard routine for copper-IUD and injectable provision was at follow-up. Regardless of our attempts to convince the nurse-midwives that injectables can be provided as early as on day three, according to WHO guidelines [40], most were not comfortable with doing so and they expressed having experienced an increase in incomplete abortion or profuse bleeding if they provided injectables early. Because we did not consider this from the start we chose to keep to standard clinical procedure. This was, however, a bit different in the various study sites, especially the two private clinics in the city, whose procedures differed from those of the NGO-run clinics. One of the urban clinics provided only condoms for free and did not provide much counselling. Instead, our research assistant who was responsible for the urban area commonly advised the women to go to the urban NGO-run clinic if they wished to initiate a contraceptive method. Optimally, we would have implemented a contraceptive provision strategy together with the intervention, however, by not doing so we could assess the actual outcome of contraceptive use given that no changes to clinical procedures were made. This may, however, have biased the use in the home-assessment group as they were told not to return to the clinic before their home-visit or self-assessment for purposes different than side effects or warning signs of the abortion. With regard to the three-month follow-up, we could only include women from the urban sample who had a phone of their own and agreed to follow-up primarily due to ethical reasons. This limited the sample size and more research is needed to establish the long-term use of contraception.

Finally, there was a mistake in the study group allocation at one of the study sites; women that were randomized to in-clinic follow-up were allocated to home-assessment and vice versa, however more women were wrongly allocated to the home-assessment group. The women that were erroneously allocated had no particular profile and when evaluating why this had happened, we could not find any particular reason or argument for the erroneous allocation. This has been bridged in ITT analysis of efficacy where women were analysed according to randomization, not allocation.

## Qualitative Studies

Qualitative methods have gained more attention within the field of medical research over the past decades, and should be appreciated as complementary to quantitative research, going beyond the numbers [212]. To broaden the understanding of qualitative research validity and quality it can be helpful to apply the broad concepts of validity often used for quantitative research, however, to respect and consider the goals of qualitative research they must be applied differently [213] and we often refer to trustworthiness. Several actions throughout the study procedure can ensure trustworthiness of the study, for example, triangulation – collecting data through two or more different means. Additionally, credibility or respondent validity, referring to the ‘truth’ of the findings, and a thorough description of methods and closely-kept records of data collection and process of analysis [213]. In terms of generalizability, in qualitative research it is more common to refer to transferability of the findings. Grounding empirical data in theory and evolving existing theory by applying empirical data can achieve this. A theory can be applied to different settings and context as long as the prerequisites of the theory are known and relevant [212]. Finally, the aspects of reflexivity – or the knower’s mirror – are important to consider, as is understanding the effect of the researcher in the study process. The effect of the researcher must be assessed during all steps of the research and reflected upon in the dissemination of findings. This does not eliminate subjectivity, however, it accounts for it and makes it transparent [212].

## Methodological Strengths

The qualitative interviews were carried out in the same study setting as the RCT, however, with different study participants. Allowing us to explore outside of the RCT, to interview women who had not necessarily sought abortion and who were of a younger age than the median age of women in the RCT, gave us a different perspective and allowed us to further understand the context. Additionally, to carry out interviews with both women and men to explore the full picture was a major strength. The women and men who were interviewed did not have a relationship to each other but represented different families from different villages. This strategy allowed us to explore a greater variation of couple dynamics and decision-making as well as circumvent biased answers, especially from the women, as they would not be comfortable with knowing that their husbands knew what we were talking to them about. Another important strength in this study was the long process that led up to the study design and data collection described in the methods section. This process allowed me to acclimatise to the context and contributing to the trustworthiness of the study [214]. The VHWs who facilitated the recruitment of interviewees were well known in the area and were excel-

lent gatekeepers who could instil trust in the participants. However, the VHWs were not invited to take part in the interview to ensure privacy, and to allow the interviewees to speak freely. That my colleague and I were outsiders in the study setting may be argued as both a strength and a limitation. However, I chose to discuss it under strengths because the fact that we were strangers allowed the participants to speak freely without fearing that we would spread any rumours or share our finding with anyone in their village. Because I was the obvious outsider who did not speak their language, it made them more forgiving if I asked questions on taboo topics.

The emergent design allowed for changes over time, and because the interviews were carried out at different points in time we had time to analyse the interviews before carrying out the next round of interviews. Such a design enables the interviews to explore deeper and focus on more specific topics, as well as confirm previous findings and ensure reflexivity. The fact that we could carry out follow-up interviews with five of the women was a major strength and it was obvious that the women felt more comfortable talking about these issues during the second interview, and some of their statements even changed in the second interview. Whether that was because of a change of preference or practice over time (12 months between interviews) or feeling more secure and confident in speaking to us cannot be distinguished, however, it allowed us to revisit and confirm some of our findings, and dig deeper into other, more sensitive topics that we could not talk about the first time due to feelings of shame or embarrassment.

Finally, analysis and interpretation of the data was carried out in a multi-disciplinary team including researchers from both a medical, social and anthropological background, with different perspectives and experiences from different contexts. This resulted in a thorough analysis of the data, where identified sub-themes were discussed, evaluated, reconsidered and discussed again within the mixed group of authors, further strengthening the validity.

## Methodological Limitations

All of our interviews were facilitated by an interpreter. It is well discussed how interpreter-facilitated interviews may be problematic and can potentially jeopardize the validity of a study. However, research also points to the potential of such a method if the research team and the interpreter are well prepared before conducting the interviews [153]. In our study, the interpreters held at least a BSc and had previous experience of interpretation within the field of SRH in the study area. In addition, the female interpreter was involved in the RCT and we had been working together for eight months by the time of the first interview. Similarly, I had known the male interpreter for almost a year by the time of the first interview; this created a good and comfortable atmosphere. In line with studies on interpreter-facilitated interviews [153], the interviews were well-prepared in advance and the interpreters

were informed of the study aim and the topic guide. We tried different means of interpreter-facilitation, both interpreter-led interviews and researcher-led interviews where the interpreter translated questions and answers. The two methods were used interchangeably depending on the interviewee and the flow of the discussion. However, with time my Hindi improved and by the second round of interviews I could already understand most of the answers, and hence reduced the need to spend time in listening to long interpretations. Additionally, the goal of the interpretations were not exact translations, rather to generate central meanings, and all interviews were tape recorded and transcribed verbatim so as to not lose any meaning in translation. In addition, to help the interpreter remember the key information I would probe for certain questions or topics I would expect from the topic of interview, a method inspired by Williamson and colleagues [153]. To ensure validity, an independent translator transcribed and translated the interviews to English and included the interpreters' translations during the interviews as well as the questions in English. To further ensure validity, we back-translated selected translations and validated meanings when confusion occurred. The translator also preserved all local expressions and wrote them in brackets in the transcripts. We believe that we bridged most of the challenges with using an interpreter; however, there may still have been meanings or concepts that were lost in translation. Nevertheless, judging from the rich data I argue that we maintained validity.

Social desirability bias is a concept referring to the notion that interviewees respond in a way that may be viewed favourably by others and is argued to be of particular relevance in studies of family planning [215]. For the purpose of this study the lack of gender-biased sex selection reported by the interviewees may have been a result of social desirability. However, to circumvent this we tried to create a comfortable interviewing climate and for the purpose of gender-biased sex selection, we did not ask any direct questions but rather let the participants elaborate on social values, number of children and whether girls or boys made a difference to the family in general. Moreover, in the case of social desirability, this too suggests changing social norms and our findings suggest women's preferences rather than trying to provide estimates of the commonness of the practice.

Finally, for the purpose of this thesis, the aspects of religion are not raised. Not because they are not relevant to the topic, rather because the religious perspectives did not emerge from our data. Instead I have chosen to emphasize the role of socio-cultural norms and gendered structures being aware of that they are often influenced by religious beliefs and practices. I therefore argue that the religious influence is implicitly included in this thesis, however, that more research should look into the explicit influence of religion on access to SRHR in this context.

## Conclusion

Access to quality comprehensive abortion care can be universal, given a legally enabling setting. This thesis provides a road map to scaling up and simplifying medical abortion in low-resource, primary health care settings, using India as a case study. Moreover, it provides a matrix of access to health services in low-resource settings. By taking the supply-side and the demand-side perspectives of access into account, this thesis shows that women have the capacity, and must be allowed to engage in their sexual and reproductive health. Currently, there is a gap between the existing health services and women's reproductive needs resulting in unintended pregnancies and the inevitable need for abortions. The lack of access to safe abortion services and the exploitation of women seeking abortions further jeopardize women's health and social wellbeing.

Our studies identified several opportunities to enhance contraceptive use and continuation: primarily, the young women's increasing 'agentic' opportunities to make reproductive decisions, and the supportive spousal unit where family planning is discussed; secondarily, the opportunities to provide contraception within abortion care. We also show the acceptability, efficacy, and feasibility of simplified follow-up post-early medical abortion in a context where infrastructure is poor; women have little autonomy, limited educational attainment, and are financially dependent. Moreover, we show that simplified follow-up will not change women's opportunities to access contraception in a low-resource setting, if contraceptive services are provided as intra-abortion services as early as on day one. Simplifying the medical abortion can result in a "one-stop" treatment allowing women to carry out the abortion at their convenience while being less dependent on the health system as well as on their husbands or in-laws. In addition to enhanced acceptability among women and providers, simplified medical abortion may also motivate women to initiate long-acting reversible contraceptive methods and will contribute to increased access of safe abortion services at a primary health care level.

This thesis recognizes the influence of gendered structures on women's access to healthcare and suggests multisectoral efforts to address inequitable health care through gender-responsive policies and health services. By doing so, the society can benefit a healthier population as well as a population growth under control. Allowing women to participate in decisions regarding their own bodies can also empower women and enhance their overall social

status and opportunities to create a better future for themselves and their families.

This thesis shows that women have the capacity to improve their sexual and reproductive health, however that health systems do not respond to these capacities. Allowing women access to simplified and gender-responsive reproductive health services would result in direct benefits for the health system and the women, and could signify a step in the right direction in the post-2015 agenda. Ensuring access to equitable health care is a step towards gender equality, and addressing the gendered structures at the macro- and micro- levels can facilitate access to sexual and reproductive health and rights for all.

# Health System Implications

Drawn from our research findings, my field observations and experience within the field, I will summarize a set of implications for the health system to ensure access to safe abortion care and to increase the use of contraception in a low-resource setting in India. Enhancing women's opportunities to plan and regulate fertility will result in improved sexual and reproductive health, decreased maternal morbidity and mortality, and is likely to increase women's autonomy and agency beyond reproductive decision-making. These implications go hand-in-hand with the Global Strategy for Women's, Children's and Adolescents' Health [5], and follows the levels of the health system, similar to the matrix of access presented above.

## Institutions/Systems Level

- Implement and scale-up the use of medical abortion in public health facilities.
- Ensure the inclusion of the option of having a simplified early medical abortion according to existing evidence.
- Ensure timely provision of a range of reversible contraceptive methods, with a focus on LARCs and mobilize efforts to provide contraceptive counselling to women seeking abortion and post-partum.
- Act upon the identified misinterpretations and misunderstandings of the PC & PNDT Act and the MTP Act to increase abortion access and decrease stigma and coercive treatment [110].
- Regulate procedures and prices with regard to abortion provision by private providers, especially in terms of unnecessary and pricy interventions, such as multiple ultrasound examinations for early MTP.
- Change the discourse around abortions and move away from the misconception that most abortions are sex-selective through communication via media, health care providers, ASHAs and Aanganwadis.
- Improve the reputation of reproductive services provided by the public health system by ensuring gender-responsive, quality care and through communication campaigns and out-reach activities.
- Introduce hormonal implants, LNG-IUS, and the injectable under the NRHM and encourage health care providers to promote LARCs.

- Cease the incentivized sterilization provision; continuing with this approach will limit women's choice of contraceptive methods, given their limited agency and low status in the Indian context.
- Make inter-disciplinary efforts to realize gender equality and empowered women, especially with regard to young women and girls.
- Implement the sexual and reproductive health components that were identified in the adolescent health strategy (RKSK) [207] and ensure the provision of adolescent responsive health services, especially with regard to sexual and reproductive health including contraception and abortion.
- Hold health facilities accountable for their abortion and contraception service provision, and create an enabling environment where accountability is encouraged, rather than reprimanded.

## Health Service Level

- Readily update and implement abortion service provision according to existing policy and legal documents and ensure that women can choose between safe and evidence-based methods, such as medical abortion.
- Implement simplified medical abortion and monitor and evaluate outcomes to establish a routine practice.
- Provide a range of contraceptive methods as early as on day one of the medical abortion and introduce the concept of intra-abortion contraception to highlight the importance of providing contraception before the completion of abortion.
- Train health care providers in abortion care and contraceptive counselling services and ensure patient-responsive care that considers the women's opportunities to use contraception and caters to their feasible choices of methods.
- Train health care providers in the provision of hormonal implants and LNG-IUS, and emphasize the importance of providing information with regard to side effects and health outcomes for the women to make an informed choice.
- Include information about traditional contraceptive methods in the contraceptive counselling to decrease misconceptions and to give women an opportunity to make an informed choice.
- The health services must go beyond considering women as victims and respond to them as persons with sexual and reproductive needs. In particular, their sexual needs highlighted in this thesis must be embraced and can motivate contraceptive use.
- Invite men to participate in the reproductive services, either separately or with their wives, and inform the couple of their family planning options.

Facilitate their dialogue by giving them tools to communicate contraception and family planning strategies.

- Create an unhostile approach to report abortion data and ensure availability of disaggregated data with regard to abortion services to create a more accurate analysis of where resources must be prioritized.

## Community Level

- Increase community awareness through out-reach activities, group discussions, village health workers and other out-reach infrastructures that already exist and are well-established in the community setting.
- Ensure that village health workers and ASHAs provide accurate information about the whole spectra of contraceptive and abortion services, especially LARCs.
- Involve men in the family planning dialogue and the out-reach activities, both separately and together with their spouses.
- Integrate gender equality exercises in health care communication efforts.
- Make particular efforts to reach out to the recently-married women, and men, who are in great need of effective contraception.
- Communicate women's right to sexual and reproductive health as well as where safe abortion services can be obtained.
- Target adolescents and address the importance of adolescent's sexual and reproductive health among community leaders, elderly and parents.
- Address the bad reputation of the public health system, and evaluate whether the public health system improves and enables access to reproductive health services from a community perspective.

## Summary in Swedish/Sammanfattning på svenska

Inför millennieskiftet enades världssamfundet om åtta utvecklingsmål för låg- och medelinkomstländer som skulle vara uppfyllda år 2015. Många länder har gjort stora framsteg, men alla mål har inte uppnåtts. Ett av de mål som haft minst framgång var mål nummer fem, som hade för avsikt att minska mödradödligheten med 75 %. Trots att man inte uppnådde målet, har mödradödligheten minskat med 44 % sedan 1990. Idag står vi inför en ny global agenda; de hållbara utvecklingsmålen. Dessa mål riktas till hela världen och har för avsikt att lägga grunden för en hållbar framtid, där människor är hälsosamma, kvinnor och män är lika värda, vi lever på förnyelsebara resurser och tillämpar ett holistiskt miljötank.

I Indien har man lyckats få ner mödradödligheten markant sedan 1990, dock inte tillräckligt för att uppfylla millenniemål nummer fem. Indien har sedan länge fokuserat på att begränsa barnafödandet och har använt diverse metoder för att åstadkomma detta. Under 70-talet tvångssteriliserades män. Därefter infördes steriliseringsmål med fokus på kvinnor, där varje delstat fick i uppgift att sterilisera ett visst antal kvinnor, dock på frivillig basis. Under de senaste årtiondena har Indiens regering insett vikten av att bejaka mänskliga rättigheter och det fria valet; steriliseringsmålen är avvecklade och vissa typer av preventivmedel finns tillgängliga gratis på vårdcentraler och hälsoinstanser. Men kanske det viktigaste av allt: regeringen har gått ut hårt för att förändra normen och idealen kring barnafödande. Istället för att värdesätta stora familjer, försöker man uppmuntra tvåbarnsfamiljen. Dessutom har man lagt stor vikt vid att öka tidsintervallen mellan barnafödande. Trots detta är sterilisering fortfarande det vanligast preventivmedlet i Indien. Abort är lagligt och används flitigt, dock inte lika flitigt inom allmänsjukvården. De flesta aborter sker inom privatvården eller den informella sektorn som te. x kvacksalvare, traditionella metoder eller på svarta marknaden. Aborter står för 8-18% av Indiens mödradödlighet ännu idag, om inte mer. Trots att medicinsk abort är tillåtet är kirurgisk abort vanligare och ofta används utdaterade metoder som inte längre rekommenderas för abort, som te. x skrapning. Den medicinska aborten innebär en stegvis behandling där man tar ett piller dag 1, fyra piller dag 3, och följer upp efter 10-14 dagar. I Indien rekommenderas kvinnor att komma till kliniken vid varje tillfälle, alltså tre gånger, medan i många andra länder, inklusive Sveri-

ge, kan kvinnan välja om hon vill ta pillren dag 3 hemma istället för på kliniken.

God sexuell och reproduktiv hälsa är grundläggande för att kunna uppnå de nya utvecklingsmålen för mödradödlighet och jämställdhet. Den här doktorsavhandlingen har för avsikt att identifiera sätt att förenkla och öka tillgången till reproduktiv hälsa i resurssnåla kontexter. För att göra detta har vi valt att fokusera på medicinsk abort och preventivmedel i Rajasthan, en delstat i norra Indien.

I den första studien jämförde vi förenklad uppföljning efter tidig medicinsk abort med återbesök på klinik. Kvinnor som sökte abortvård blev slumpade till att antingen komma till kliniken för återbesök hos en läkare, eller att utvärdera sin abort hemma, med hjälp av ett graviditetstest och ett piktogram, en instruktion i bildformat. Om kvinnorna upplevde några problem under aborten fick de förstås kontakta kliniken oavsett vilken studiegrupp de tillhörde. Kvinnorna fick även möjlighet att välja om de ville ta andra dosen tabletter dag tre hemma eller på kliniken. Något färre än hälften av kvinnorna valde att ta tabletterna hemma. De flesta kvinnor som deltog i studien bodde på landsbygden där infrastruktur och vägar ofta är i dåligt skick. Mer än hälften av kvinnorna hade aldrig gått i skolan, majoriteten hade redan minst ett barn och en tredjedel hade gjort minst en abort tidigare. Studien visade att kvinnor tycker att medicinsk abort är en bra abortmetod och att de skulle välja samma metod igen om de skulle behöva. Om så vore fallet, så skulle även de flesta kvinnor önska att få följa upp aborten hemmavid istället för att komma tillbaka till kliniken för ett återbesök. De här resultaten påverkades inte av kvinnans utbildningsnivå eller om hon bodde i staden eller på landsbygden. Studien visade även att självutvärdering fungerar lika bra som återbesök på kliniken. Detta gäller både i förhållande till effektivitet att upptäcka inkompleta aborter eller pågående graviditeter, säkerhet och genomförbarhet, trots den resurssnåla kontexten. Studien visar därmed att kvinnor är fullt kapabla att utvärdera sin abort hemma.

Den andra studien var en fortsättning på den första studien, men då ville vi undersöka om kvinnors preventivmedelsanvändande påverkades av var uppföljningen efter aborten ägde rum. Två veckor efter aborten frågade vi kvinnorna om de hade börjat använda preventivmedel eller om de planerade att göra det. Dessutom kontaktade vi en mindre grupp kvinnor från studien efter ytterligare tre månader för att fråga samma sak igen. Studien visade att det inte är någon skillnad i preventivmedelsanvändande efter tre månader, men att kvinnor som kom på återbesök till kliniken började använda preventivmedel tidigare än de som utvärderade sin abort hemma. Efter två veckor hade en tredjedel av alla kvinnor i studien påbörjat något preventivmedel (inkl. kondom) och bland dem som inte börjat hade nästan alla för avsikt att börja. Vi kunde även se att de kvinnor som själva fick utvärdera sin abort var mer motiverade att använda preventivmedel och att de då också föredrog

spiral eller p-spruta i jämförelse med de kvinnor som kom på återbesök efter två veckor och som istället föredrog p-piller eller kondom. Det som krävs nu är att komma på ett sätt att tillhandahålla kvinnorna med de preventivmedel de föredrar redan innan de lämnar kliniken och våra fynd pekar på vikten att erbjuda preventivmedel tidigt under den medicinska aborten. Helst redan dag ett.

Den tredje studien var en intervjustudie där vi intervjuade unga kvinnor på landsbygden i samma område som där de första två studierna ägt rum. Vi ville försöka förstå hur unga och nygifta kvinnor ser på sin reproduktiva hälsa, samt vilka möjligheter de har att bestämma över sin egen kropp. Kvinnorna förklarade hur de hade för avsikt att uppfylla de rådande normerna för barnafödande och att de helst inte ville ha mer än två barn och gärna med ett 3-5 års intervall. Problemet var att preventivmedel var tabu och att använda preventivmedel verkade otänkbart, i alla fall innan första graviditeten. Detta trots att de redan direkt efter giftermål själva hävdade att de var i stort behov av ett fungerande preventivmedel. Istället använde de sig av traditionella och socialt accepterade metoder så som att räkna dagar och försöka undvika samlag under de fertila dagarna. Detta resulterade dock i oplanerade graviditeter och ofta också ett behov av abort. Kvinnorna sökte abortvård från privata eller informella källor för att kunna hålla aborten hemlig från övriga familjen, speciellt om kvinnan ännu inte hade några barn. Det var vanligt att endast mannen visste om aborten och ofta var det också han som såg till att kvinnan kunde genomföra aborten. Kvinnorna visste väldigt lite om preventivmedel överlag, men uttryckte ett intresse för att både lära sig mer om och att använda preventivmedel. Förutom de unga kvinnorna så intervjuade vi även unga män. Det var tydligt i intervjuer med både kvinnor och män att familjeplanering var något det gifta paret diskuterade tillsammans. Problemet var att de tyckte att det var svårt att prata om just preventivmedel, framförallt för att mannen inte kände sig bekväm att ta upp ämnet på grund av bristande kunskap och för att kvinnan, trots att hon kanske hade lite mer kunskap än mannen, väntade på att mannen skulle ta initiativ till samtalet. Slutligen var det även tydligt i våra intervjuer att indiska kvinnor, som ofta framställs som kyska och timida, kan uttrycka sin sexlust och efterfråga sex med sina partner, även om sex oftast sker på mannens initiativ. Det är ju förstås positivt, men det fanns ett problem: kvinnorna och männen uttryckte en rädsla för oplanerad graviditet och kunde därför inte njuta av sin sexuella relation till fullo.

Genom att låta kvinnor spela en aktiv roll inom reproduktiv hälsovård kan vi förenkla och öka tillgången till livsnödvändig vård, även i områden med begränsade resurser. Den här doktorsavhandlingen ger ett exempel på hur vi kan stärka kvinnors inflytande över sin reproduktiva hälsa och därigenom sin egenmakt med avstamp i den förenklade medicinska aborten, under förutsättningen att kvinnorna får lämplig och korrekt information. Genom att vi förenklar reproduktiv hälsovård kan vi öka tillgängligheten både ur ett

hälso- och sjukvårdssystem och ett samhällsperspektiv. I Indien bör förenklad medicinsk abort med 1-2 läkarbesök ges som ett alternativ till den nuvarande medicinska aborten som innebär tre läkarbesök. Att erbjuda förenklad abort kan därför spara resurser för både vårdgivaren och vårdmottagaren. Därutöver måste Indien tillämpa en familjeplaneringsstrategi som tar hänsyn till de personer de vill nå ut till, med extra fokus på och resurser för unga personer, framförallt dem på landsbygden. Indien måste skifta fokus från sterilisering till reversibla preventivmedel och inkludera män i familjeplaneringsdiskussionen.

Den här avhandlingen visar att kvinnor har resurser för att förbättra sin sexuella och reproduktiva hälsa om de skulle ges möjlighet att göra det. Detta skulle leda till direkta fördelar för både kvinnorna och nationen och är ett steg i rätt riktning i enlighet med den nya globala agendan mot en hållbar framtid.

## Summary in Hindi/हिंदी में सारांश

नयी सहस्राब्दी में प्रवेश करते समय समस्त वैश्विक समुदाय ने विकास के आठ लक्ष्य तय किये जो सन २०१५ तक पूरे किये जाने थे। उस दिशा में प्रगति तो हुई, परन्तु समस्त लक्ष्यों को हासिल नहीं किया जा सका। शिशु जन्म के समय होने वाली माता की मृत्यु दर में ७५ प्रतिशत तक कमी लाना ऐसा ही एक अधूरा लक्ष्य है। और ऐसा इसलिए नहीं है कि हमें ये नहीं पता कि अधिकांश माताओं की मृत्यु होने को कैसे रोका जा सकता है, बल्कि इसलिए है क्योंकि समाज ने अभी तक महिलाओं के जीवन की रक्षा करने को एक महत्वपूर्ण जिम्मेदारी नहीं माना है। वर्तमान में हम हम एक नयी वैश्विक कार्यसूची (एजेंडा) बनाने के शुरुआती चरण पर हैं। जिन्हे 'सतत विकास लक्ष्य' नाम दिया गया है, और माताओं की मृत्युदर में कमी लाना तथा लिंग-आधारित समानता लाना इस नयी कार्यसूची में भी शामिल है।

सन १९९० के दशक की शुरुआत से भारत में माताओं की मृत्यु दर में बहुत तेजी से गिरावट आई है, परन्तु इसके बावजूद भारत इस लक्ष्य को हासिल नहीं कर सका। भारत में ५० के दशक में विश्व में पहली बार, परिवार नियंत्रण की नीतियाँ लागू करके मानव प्रजननक्षमता को नियंत्रित करने का प्रयास शुरू कर दिया था, और इसके बाद सन १९७० के दशक में भारत ने गर्भपात को कानूनन वैध कर दिया। जनसँख्या नियंत्रण की ओर भारत की यह कोशिश काफी असहिष्णुता भरी थी, परन्तु पिछले कुछ दशकों में भारत ने अपनी नीतियों में मानव अधिकारों को ध्यान में रखते हुए सुधारा है, और सरकार द्वारा- छोटे परिवार को बढ़ावा देना, अधिकतम दो बच्चों के बाद परिवार नियोजन करवाना तथा दो बच्चों के बीच अंतर रखना- इन सभी प्रसव-सम्बन्धी मापदंडों में बदलाव लाने में लगायी गयी कोशिश सबसे महत्वपूर्ण चरण है। पर कई तरह के विकल्प उपलब्ध होने के बावजूद जनता में स्थायी परिवार नियोजन आज भी अस्थायी परिवार नियोजन की तुलना में ज्यादा प्रचलित है। दूसरी तरफ, कई महिलाओं को आज भी अनियोजित गर्भ तथा गर्भपात से जूझना पड़ता है। काफी उदार गर्भपात सम्बन्धी नीति के बावजूद, भारत में होने वाली ८-१८% माताओं की मृत्यु, और मापी ना जा सकने वाली एंड मातृ-स्वास्थ्य सम्बन्धी परेशानियों का कारण असुरक्षित गर्भपात है।

प्रजनन तथा स्त्री-रोग सम्बन्धी स्वास्थ्य सुविधाओं तक पहुँच होना माता की मृत्यु तथा लैंगिक-समानता के नए लक्ष्य को हासिल करने के लिए आवश्यक है। इसके साथ ही उचित परिवार नियोजन और सुरक्षित गर्भपात सुविधाओं को उपलब्ध करवाना भी जरूरी है। इस थीसिस का उद्देश्य ऐसी तरकीबों को पहचानना है जो निम्न या मध्यम

संसाधन- उपलब्धता वाली स्थितियों में प्रजनन-सम्बन्धी सुविधाओं तक पहुँच को बढ़ाती हैं और आसान बनाती हैं. इस थीसिस का केंद्र राजस्थान राज्य, भारत में उपलब्ध परिवार नियोजन और गर्भपात सुविधाएँ हैं.

अपने पहले अध्ययन में मैं शुरुवाती गर्भावस्था में किये गए गर्भपात के बाद होने वाले सरलीकृत जांच की तुलना हस्पताल के अंतः-रोगी विभाग में होने वाली जांच से करना चाहती थी. वे महिलायें जिन्होंने गर्भपात करवाया था, उन्हें यादृच्छिक तरीके से या तो जांच के लिए वापस हस्पताल आने का सुझाव, या फिर, उनके घर में एक चित्रों वाली निर्देश पत्रिका के अनुसार स्वयं एक गर्भ-जांच करने का सुझाव दिया गया. इसके अलावा, इस अध्ययन में भाग लेने वाली सभी महिलाओं को ठीक तरीके से समझाया गया कि यदि गर्भपात सम्बन्धी कोई भी स्वास्थ्य- परेशानी वे महसूस करें, तो चाहे वे किसी भी अध्ययन गुट में हों, उन्हें तुरंत हस्पताल आकर जांच करवानी चाहिए. इसके अलावा महिलाओं को यह भी विकल्प दिया गया कि वे गर्भपात दौरान ली जाने वाली दूसरी गोली हस्पताल आकर लेना पसंद करेंगी या घर पर. लगभग आधी भागीदार महिलाओं ने अपने घर पर गोली लेने का विकल्प चुना.

इस अध्ययन में भाग लेने वाली अधिकाँश महिलायें ग्रामीण इलाको से थी, जिनके पास बुनियादी सुविधाओं तथा आने जाने के लिए पक्की सड़को की भी कमी थी. इनमें से आधी से ज्यादा महिलाओं ने कभी विद्यालय नहीं गयीं थी. अधिकाँश भागीदार महिलाओं का, गर्भपात करवाने के समय काम से काम एक जीवित बच्चा था, और करीब तिहाई महिलाओं ने इस से पहले भी कम से कम एक गर्भपात करवाया था. हमने पाया कि लगभग सभी महिलायें गोली-द्वारा होने वाले गर्भपात की सुविधा से संतुष्ट थीं, और भविष्य में भी, जरूरत पड़ने पर फिर गोली-द्वारा गर्भपात करवाना ज्यादा पसंद करेंगी. सबसे महत्वपूर्ण यह था, कि अधिकाँश महिलायें भविष्य में गर्भपात के बाद घर में की जा सकने वाली, ना कि हस्पताल आ कर होने वाली जाँच करवाना पसंद करेंगी। महिलाओं के इस चयन का उनके पढ़े-लिखे होने या ना होने से, या ग्रामीण या शहरी होने से कोई सम्बन्ध नहीं था. इसके अलावा, वे महिलायें जिन्होंने गर्भपात के बाद स्वयं अपने घर में गर्भ-जांच की थी, और गर्भपात के नतीजे का पता लगाया, वे अपनी गर्भपात-सुविधा से ज्यादा संतुष्ट थीं. परन्तु वे महिलायें जिन्हे अधूरे गर्भपात से जूझना पड़ा, वे अपनी गर्भपात सुविधाओं से सबसे कम संतुष्ट थी. इस अध्ययन ने यह भी साबित किया कि यदि प्रभावकारिता और अधूरे गर्भपात का पता लगाने की बात की जाये तो, गर्भपात पश्चात घरों में की जा सकने वाली जांच, हस्पताल में की जाने वाली जांच से किसी भी तरह कम नहीं थी. सुरक्षा और करने की सम्भवता के आधार पर भी, दोनों प्रकार की जांचों में अंतर नहीं पाया गया. हमारी नज़रों में आने वाली एक और महत्वपूर्ण बात यह थी कि कम बुनियादी सुविधाएँ उपलब्ध होने के बावजूद, गर्भ जांच के आधार पर, या फिर किसी स्वास्थ्य सम्बन्धी पेचीदगी के आधार पर सभी महिलायें यह पता लगाने में सक्षम थी कि गर्भपात के बाद उनके लिए हस्पताल जा कर जांच करवाना

जरूरी था या नहीं। अपने दूसरे अध्ययन में हम यह पता लगाना चाहते थे कि क्या वो जगह, जहां गर्भपात के नतीजे का पता लगाया गया, महिलाओं द्वारा उपयोग किये जा रहे परिवार नियोजन के तरीकों पर कोई प्रभाव डालती थी। हमने पहले अध्ययन में भाग लेने वाली सभी महिलाओं से पूछा कि क्या गर्भपात के दो हफ्तों के बाद होने वाली जांच होने तक उन्होंने किसी भी तरीके के परिवार नियोजन का प्रयोग शुरू कर लिया था, और यदि नहीं, तो परिवार-नियोजन का प्रयोग करने के पीछे क्या वजह थी। इसके अलावा, हमने अपने पहले अध्ययन में, शहरों में रहने वाले भागीदारों में से एक छोटे समूह (संख्या: ११४) का चयन करके, तीन महीने बाद फिर उनसे बात की, और पाया कि इन तीन महीने में उनके परिवार-नियोजन के इस्तेमाल बाबत दिए पहले जवाब में कोई अंतर नहीं आया था। परन्तु वे महिलायें जिनकी गर्भपात पश्चात जांच किसी हस्पताल में हुई थी, उनके द्वारा गर्भपात के दो हफ्तों के आस-पास गर्भनिरोध करना शुरू करने की संभावना उनकी, घर में जांच करने वाली संगियों की तुलना में कहीं ज्यादा थी।

समस्त भागीदारों में से लगभग एक तिहाई ने गर्भपात के २ हफ्तों के बाद किसी न किसी गर्भनिरोध का उपयोग शुरू कर लिया था, और बाकी महिलाओं में से अधिकांश जल्द ही उपयोग शुरू करने वाली थी। हमने यह भी पाया कि जिन महिलाओं ने घर पर गर्भपात पश्चात जांच की थी, वे तीन-तीन महीने में लगने वाले इंजेक्शन लेना, या कॉपर-टी लगवाने में ज्यादा इच्छुक थीं। जबकि हस्पताल जा कर जांच करवाने वाली महिलाओं ने कंडोम या खाने वाली गोली का उपयोग ज्यादा पसंद किया। इन नतीजों से यह पता चलता है कि गर्भनिरोध-सम्बन्धी परामर्श और सुविधायें, गोली-द्वारा होने वाले गर्भपात के एक दिन बाद ही या जल्द से जल्द शुरू कर देना हितकर है।

हमारा तीसरा अध्ययन वार्तालाप के माध्यम से काम उन्न की, हाल ही में ब्याहित महिलाओं से उनके स्त्री-स्वास्थ्य, और अपने खुद के शरीर सम्बन्धी निर्णय लेने के अवसरों के बारे में जानकारी लेना था। जिन महिलाओं से हमने वार्तालाप किया, वे सभी सरकार द्वारा दिए गए दो-बच्चों के, और दोनों बच्चों के बीच अंतर रखने के मापदंडों का पालन करना चाहती थीं, परन्तु ऐसा करने का कोई प्रभावशाली तरीका उनके पास नहीं था। वे नवीन गर्भ-निरोधक तरीको का इस्तेमाल करना चाहती थीं, लेकिन, समाज में गर्भ-निरोधकों की कलंकित छवि के कारण, और प्रजनन शक्ति की समाज में महत्ता के चलते नवीन गर्भ-निरोधकों का प्रयोग संभव नहीं था। इसकी बजाय महिलायें आज भी परंपरागत चले आ रहे परिवार नियोजन के तरीके, जैसे कि, दिन गिनना, और उपजाऊ दिनों में सम्भोग नहीं करना, इत्यादि का प्रयोग कर रही थीं। परन्तु ऐसे हाल में कई बार अनियोजित गर्भ ठहर जाता था, जिसके निवारण के लिए उन्हें गर्भपात करवाना पड़ता था। गर्भपात प्रायः निजी संस्थानों में, या अनौपचारिक सुविधा-प्रदाताओं से, और पति के सहयोग से, परिवार से छुपा कर करवाया जाता था। विभिन्न गर्भ-निरोधकों के विषय में महिलाओं को पूरी जानकारी नहीं थी, पर वे इस विषय में और जानकारी पाने की इच्छुक थीं परन्तु स्थायी गर्भ नियोजन के बारे में बहुत कम उत्सुकता देखी गयी।

महिलाओं से बात करने के अलावा, हमने कुछ कम-उम्र पुरुषों से भी इस विषय में बात की। महिलाओं और पुरुषों, दोनों के साथ हुए वार्तालाप में यह साफ था कि दम्पति आपस में परिवार नियोजन के विषय में बात करते थे, परन्तु गर्भ-निरोधकों के विषय में एक दूसरे से बात करना उन्हें कठिन लगता था। पति, इस विषय पर कम जानकारी होने के कारण बात करने से हिचकिचाते थे, वहीं, पत्निया, इस विषय में ज्यादा जानकारी होने के बावजूद पति द्वारा बात शुरू किये जाने के इंतज़ार में रहती थीं। इस अध्ययन में यह भी पता चला कि भारतीय महिलायें भी, जिन्हें पवित्र और विनम्र होने का सामाजिक दर्जा दिया गया है, अपनी शारीरिक ज़रूरतों को प्रकट करते हुए अपने पति से शारीरिक सम्बन्ध की मांग कर सकती थी, हालांकि शुरुवात प्रायः पति द्वारा की जाती है। हालांकि यह एक सकारात्मक नतीजा था, पर इसके साथ एक उलझन भी थी। अनियोजित गर्भ के डर से दम्पति आपस में शारीरिक सम्बन्ध का पूरा आनंद नहीं उठा पाते थे।

महिलाओं को प्रजनन सम्बन्धी सुविधाओं सुविधाओं में एक अग्रिम भूमिका देने से निम्न और मध्यम सुविधाओं की स्थिति में भी प्रजनन सुविधाओं को सरलीकृत किया जा सकता है, और उनतक पहुँच पहुँच बढ़ाई जा सकती है। यह थीसिस गोली द्वारा गर्भपात के माध्यम से इस बात का उदाहरण है कि किस तरह महिलाओं को प्रजनन सुविधाओं के इस्तेमाल में ज्यादा नियंत्रण दिया जा सकता है। यह थीसिस इस बात को भी दर्शाती है कि अगर सही और पूरी जानकारी दी जाए तो भारतीय महिलायें अपने शरीर की जिम्मेदारी लेने में पूर्णतया सक्षम हैं। प्रजनन सुविधाओं का सरलीकरण करने से और गर्भपात और गर्भनिरोधन सुविधाओं को हस्पताल के दायरे से बाहर निकाल कर-स्वास्थ्य व्यवस्था और समुदाय, दोनों के नजरिये से- उनतक पहुँच बढ़ाई जा सकती है। भारत में सरलीकृत गर्भनिरोधन का विकल्प भी दिया जाना चाहिए और इसके साथ निरोध पर परामर्श, और गर्भपात पश्चात पहले दिन से ही गर्भनिरोधन की सुविधा भी देनी चाहिए। इसके अलावा, प्रजनन सुविधाओं को कम-उम्र के नागरिकों के लिए उपयुक्त बनाने के लिए भारत को एक परिस्थिति के अनुकूल दृष्टिकोण लेना होगा ताकि कम -उम्र महिलाओं गर्भनिरोधन सुविधाएं हासिल कर सकें। समय आ गया है कि स्थायी गर्भ निरोधन पर ही केंद्रित रहने की बजाय अब अस्थायी गर्भ निरोधन को बढ़ावा दिया जाए, और गर्भ-निरोध के वार्तालाप में पुरुषों को भी शामिल किया जाये।

यह थीसिस एक जटिल परिस्थिति में एक जटिलता से मिलने वाली पहुँच को प्रभावित करने वाले महत्वपूर्ण कारकों को समझने के लिए एक स्वास्थ्य सुविधाओं तक निम्न बुनियादी सुविधाओं की स्थिति में, एक सूक्ष्म और वृहत स्तर के ढाँचे को ध्यान में रखते हुए एक मैट्रिक्स प्रस्तुत करती है, और उसमें लिंग-सम्बन्धी ढाँचे की महत्वपूर्ण भूमिका को दिखाती है। यह थीसिस इस बात का उदाहरण है कि यदि महिलाओं को अवसर दिया प्रजनन सम्बन्धी स्वास्थ्य का ध्यान स्वयं रख सकती हैं। महिलाओं को इन सुविधाओं का लाभ लेने देने से भारत भी २०१५ के बाद की कार्यसूची को पूरा करने की दिशा में एक सही कदम उठा सकेगा।

## Summary in English

As we entered the new millennium, the global community agreed on eight development goals to be achieved by 2015. Progress has been made, however, some of the goals were not achieved, including that to reduce maternal mortality by 75%. This is not because we do not know how to prevent most of maternal mortalities, rather, it is because societies have yet to agree that women's lives are worth saving. Today we are in the initial phase of a new global agenda, the sustainable development goals, and reducing maternal mortality and increasing gender equality remains on the agenda.

India is one of the success stories where maternal mortality has dropped rapidly since 1990, however, not sufficiently enough to achieve the development goal. India has tried to decrease fertility ever since the '50s when they introduced one of the world's first family planning strategies, followed by legalization of abortion in the '70s. India's initial population control approach was hostile, while in the past decades India has shifted its approach to be more rights-based. Forced sterilization was prohibited and the target-approach to sterilization was abolished. More importantly, the government put major efforts into shifting the childbearing norms by promoting the nuclear family with two children and spacing between childbirth. However, sterilization is still the most used method, and the use of reversible contraception remains low. Subsequently, women experience unintended pregnancies and abortions. In spite of India's liberal abortion law, unsafe abortions account for 8–18% of maternal deaths and innumerable maternal morbidity.

To achieve the new goals on maternal mortality and gender equality, access to sexual and reproductive health care is essential, with the need to emphasize access to abortion and contraception. This thesis aims to identify a means to simplify and increase access to reproductive health in low-resource settings, focusing on abortion and contraception in Rajasthan.

In study I, we wanted to compare simplified follow-up with in-clinic follow-up after early medical abortion. Women who sought abortions were randomly allocated to either return to the clinic for follow-up by a doctor, or to assess their abortion outcome at home using a pregnancy test and a pictorial instruction sheet. All participants were of course allowed to contact the clinic if they experienced any adverse side effects. Women could also choose whether they preferred to take the second dose of pills at home, or in the clinic. Almost half of the women preferred to take it at home. The women in the study primarily resided in rural areas characterized by poor infra-

structure and limited road connections. More than half had no formal education, most of the women had at least one living child at the time of their abortion and around one third of the women had experienced an abortion before. We found that almost all women were satisfied with their medical abortion and would prefer a medical abortion in the future if needed. Importantly, the majority of women would prefer to have a home-assessment in the future instead of returning to the clinic. This was independent of educational attainment or whether the women resided in urban or rural areas. Additionally, the women who carried out the pregnancy test by themselves and subsequently found out about their abortion outcome were most likely to be satisfied with their abortion, while women with incomplete abortions were least likely to be satisfied. The study also showed that home-assessment is non-inferior to in-clinic assessment in terms of efficacy to discover incomplete abortions or ongoing pregnancies, as well as in terms of safety and feasibility of the intervention. Importantly, we can conclude that all women were fully capable of identifying whether they needed to return to the clinic or not, based on the result of the pregnancy test or their experienced side effects, in spite of the low-resource setting of the study.

In study II, we wanted to know whether women's contraceptive use was affected by the location of abortion outcome assessment. We asked the same women as in study I whether they had initiated contraception at the two-week follow-up, and if not, whether they planned to do so. We also followed-up a sub-set of women recruited in the urban study sites, after three months. We found that there was no difference in contraceptive use after three months, however, that women who were assessed in the clinic after two weeks were more likely to have initiated contraception at the two-week follow-up than their home-assessment counterparts. One third of all women initiated some kind of contraception at two weeks and among those who had not yet initiated, most women planned to initiate. We also found that the women who assessed their abortion at home were not only more motivated to initiate contraception; they were also more likely to want to initiate the three-month injection or the copper intrauterine device as compared with the women followed-up in-clinic, who preferred condoms or oral pills. These findings promote early provision of contraceptive counseling and methods, preferably as early as on day one of the medical abortion.

The third study was an interview study with the aim to understand how young, recently-married women relate to their reproductive health and their opportunities to decide over their own bodies. The women we interviewed explained that they wanted to fulfil the new childbearing norms, the two-child norms and the prolonged inter-pregnancy interval, however, that they did not have any effective means to do so. They wished to use modern contraception, but due to the social stigma and the importance of fertility, modern contraception was thought to be unfeasible. Instead, women used traditional methods, such as counting the days and abstaining from sex

during fertile days. However, such methods resulted in unintended pregnancies, some of which were resolved through abortions. Abortions were often procured from private or informal providers with help from husbands, however, in secrecy from the rest of the family. The women had little awareness of different contraceptives, however, they were curious to know more, while women expressed little interest in sterilization. In addition to the women's interviews, we also interviewed young men on the same topics. It was evident in interviews with both men and women that spouses discussed family planning, however, they found it difficult to talk about contraception. Husbands felt uncomfortable bringing up the topic because of their lack of awareness, and wives, although they were slightly more aware than their husbands, waited for the husband to initiate the conversation. Finally, it was clear in our interviews that Indian women, who are often portrayed as chaste and submissive, expressed their sexual desires and could demand sex with their husbands, even though the husband initiated more frequently. This is, of course, a very positive finding, however, there was one problem. Both women and men expressed a fear of unplanned pregnancies and therefore could not fully enjoy their sexual relationship with each other.

Allowing women an active role in reproductive health services can enable simplification of, and access to, reproductive services, in low-resource settings as well as in other settings. This thesis gives an example of how we can allow women more influence over their reproductive health, using the example of simplified medical abortion. Importantly, it shows that women are fully capable of taking charge of their bodies, provided that they are given appropriate and accurate information. Simplifying reproductive health services and de-medicalizing abortion and contraception can increase access from both a health systems and a community perspective. In India, the option of simplified medical abortion should be offered, combined with contraceptive counseling and provision as early as on day one of the abortion. Moreover, to create enabling reproductive health services for young people, India must take a context-appropriate approach towards family planning and increase young women's abilities to seek essential services. It is time to shift focus from sterilization to reversible contraception, and to introduce men into the contraceptive dialogue.

To understand the complexity of access and to identify the crucial factors related to access in a complex setting, this thesis provides a matrix of access to health care in low-resource settings, taking macro- and micro-level structures into account and emphasizing the influence of gendered structures. This thesis shows that women have resources for improving sexual and reproductive health if they were to be given the opportunity to do so. Allowing women access to such services would result in direct benefits for the country and a step in the right direction in the post-2015 agenda.

# Acknowledgements

This project was realized through the funding by the Medical Faculty, Uppsala University; the Swedish International Development Agency (SIDA); the Swedish Research Council; and Familjeplaneringsfonden.

I would like to express my sincere appreciation and thankfulness to all who have supported me throughout the project, in particular to;  
All the women, and men, who participated in the studies and made this project possible, you have fascinated and inspired me - बहुत बहुत धन्यवाद!

My wonderful team of supervisors for believing in me, encouraging me to work harder, and for inspiring me to challenge and explore beyond set boundaries. Your hard work for women's health is truly inspirational and I hope that this is just the beginning of our collaboration. I look forward to many more nights on the dance floor with you.

Marie Klingberg-Allvin, my main supervisor and my solid point of reference. I cannot thank you enough for your support and guidance, both scientifically and personally. However, I would also like to thank you for allowing me to be autonomous, learn from my own mistakes, and for always being open-minded and ready to discuss.

Birgitta Essén, my co-supervisor, for your scientific guidance and personal support, for always coming in and 'stirring things up' for the better, and for your unique helicopter-perspective.

Kristina Gemzell-Danielsson, my co-supervisor, for your scientific guidance and support, for being such an inspirational researcher, and for welcoming me into your wonderful family at Karolinska Institutet and WHO Center.

Kirti Iyengar, co-author, fellow PhD-student at KI, and Program manager at ARTH Udaipur, for collaboration and good discussions, for enabling the study conduct and supervising data collection when I was not there.

Sharad Iyengar, co-author, founder of ARTH Udaipur, for collaboration, valuable input, good discussions and for enabling and supervising the study conduct.

Sunita Soni, co-author and staff at ARTH Udaipur, for good collaboration, your hard work with the RCT, and your invaluable help with interpretation. Most of all, thank you for your friendship, all of our conversations about life, family and work, and for always sharing your delicious lunch with me.

Salla Sariola, co-author, for great collaboration and your instrumental insights, holistic perspectives and for firmly guiding me through the anthropological perspectives on medical research turning me in to the hobby-anthropologist I am today. Thank you for overhearing and interrupting my conversation on the flight bus from Oxford.

Johan Bring, co-author, for guiding me through the statistics and making my results significant.

Pramilla Sharma, Pushpa Rawat, Pushpa Sen, and Rekha, for your hard work to realize data collection, your respectful treatment of the women in the study, and your never-tiring support and helpfulness. Panchal and Priya for your work with data cleaning and management. All the other staff members of ARTH, for welcoming me into your community, for the sweet chai, the shared lunches, the numerous conversations and field trips. Special thank you to the drivers (car and motorbike) who made sure I could safely reach the field for data collection. The doctors, nurses and VHWs at the study sites making sure the women were treated with respect and received the care that they needed.

Jignesh Vyas for your interpreting skills and for making the male interviewees feel comfortable and trust us with their stories and experiences.

Anuradha Rai, for your invaluable work to transcribe and translate all the qualitative interviews.

Jessica Påfs, my partner in crime and roommate, for your friendship, support and our scientific discussions and initiatives. I am eager to continue working with you.

Jill Trenholm and the Qualitative Group for your invaluable input and discussions, I believe many of my 'aha'-moments occurred together with you. Special thanks to Malin Jordal, for supporting me till the very end. Thank you for your input and for your encouraging comments.

To my wonderful colleagues at IMCH and at KI for supporting me through the hard times, celebrating with me through the good times and giving insights and input on my work. Special thank you to the administrative staff at IMCH for helping me with everything from salary to computer software.

To Eva Broberg for welcoming me to WHO Center and to my fellow PhD and post-doc colleagues at KI, especially to Amanda Cleeve, Susanne Sjöström, Cecilia Berger, Elin Larsson and Helena Kopp Kallner for your friendship, support and insights, and for joining me on the dance floor!

Aileen Ireland for your help with the English linguistic revision, Arpita Biswas and Paridhi Jha for your last-minute invaluable help with the Hindi translation, thank you!

Anti Ji and Dewali friends, and Ian Ji, Nargis Ji and Foster Care friends, for hosting me during my time in Udaipur. My wonderful friends in Udaipur for the football games at the field club, the numerous drives to Badi lake, the Sunday excursions to Nimaj Mata, the Bollywood movies in the celebration mall, the beautiful weddings, the delicious food, and all the laughter and conversations, thank you!

My parents, for always supporting me ‘no matter what’, and for encouraging me to explore the world and my own capacity. Swaraj, my father and great inspiration, for always making me work harder and for being proud of me, and Ann-Christin, my mother, for being the best role model and showing me what it means to be a strong woman.

Margit Mechler, my Grandmother and inspiration in life, and my Monika Mechler, my Aunt and number one fan, for giving me perspective on life and for understanding why I have to do what I do.

Amit Paul, my brother and close friend, for being there and for supporting me unconditionally. You are a great inspiration, always have been, and always will be. Unnur Yrr Helgadottir, my sister in-law, for your support and for helping me do the final touches on the cover photo.

Kalle and Ilona, my in-laws, for always showing interest in my work, and supporting me even when I ‘steal away’ your son to the other side of the earth.

To my friends – you know who you are, for always being there for me, even when I am far away.

René Niehus, you are my rock! Thank you for your unreserved belief in my capacity, your invaluable input on my work, your patience when I am far away, for keeping my feet on the ground, and for the butterflies in my stomach.

# References

1. Ki-Moon B: *Global Strategy for Women's and Children's Health*. New York: 2010.
2. WHO, UNICEF, UNFPA, World Bank Group, United Nations Population Division: *Trends in Maternal Mortality: 1990 to 2015*. Geneva: World Bank Publications; 2015.
3. Hogan MC, Foreman KJ, Naghavi M, Ahn SY, Wang M, Makela SM, Lopez AD, Lozano R, Murray CJL, Bill F, Foundation MG: **Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5**. *The Lancet* 2010, **375**(9726):1609–23.
4. United Nations: *The Millennium Development Goals Report*. New York: United Nations Publications; 2015.
5. Temmerman M, Khosla R, Laski L, Mathews Z, Say L: **Women's health priorities and interventions**. *BMJ* 2015, **351**(14):h4147.
6. Temmerman M, Khosla R, Bhutta ZA, Bustreo F: **Towards a new Global Strategy for Women's, Children's and Adolescents' Health**. *BMJ* 2015, **351**(14):h4414.
7. UN, Department of Public Information: *Platform for Action and Beijing Declaration. Fourth World Conference on Women, Beijing, China, 2-15 September 1995*. 1995: para. 94.
8. Cook RJ, Dickens BM, Fathalla FM: *Reproductive Health and Human Rights. Integrating Medicine, Ethics, and Law*. Oxford: Oxford University Press; 2008.
9. High Level Task Force for ICPD: *Smart Investments for Financing the Post-2015 Development Agenda*. New York: 2015.
10. Connell R: **Gender, health and theory: Conceptualizing the issue, in local and world perspective**. *Soc Sci Med* 2012, **74**(11):1675–83.
11. Hammarström A, Johansson K, Annandale E, Ahlgren C, Aléx L, Christianson M, Elwér S, Eriksson C, Fjellman-Wiklund A, Gilenstam K, Gustafsson PE, Harryson L, Lehti A, Stenberg G, Verdonk P: **Central gender theoretical concepts in health research: the state of the art**. *J Epidemiol Community Health* 2014, **68**(2):185–90.
12. Connell RW: *Gender and Power: Society, the Person and Sexual Politics*. 2nd edition. New Jersey: John Wiley & Sons; 2014.
13. Foucault M: *Power/Knowledge: Selected Interviews and Other Writings*. New York: Pantheon Books; 1980.
14. Butler J: *Gender Trouble: Feminsim and the Subversion of Identity*. New York: Routledge; 1990.
15. Hankivsky O: Women's health, men's health, and gender and health: Implications of intersectionality. *Soc Sci Med* 2012, **74**(11):1712–20.
16. Nutbeam D: **What would the Ottawa Charter look like if it were written today?** *Crit Public Health* 2008, **18**(4):435–41.

17. United Nations Entity for Gender Equality and the Empowerment of Women (UN Women): *The World Survey on the Role of Women in Development: Gender equality and sustainable development*. New York: United Nations; 2014.
18. Jeffery P, Jeffery R: *Don't Marry Me to a Plowman!* Colorado: Westview Press Inc.; 1996.
19. Hankivsky O, Reid C, Cormier R, Varcoe C, Clark N, Benoit C, Brotman S: **Exploring the promises of intersectionality for advancing women's health research**. *Int J Equity Health* 2010, **9**(5): 1–15.
20. **International Classification of Diseases (ICD)-10:** [online at <http://apps.who.int/classifications/icd10/browse/2016/en>].
21. Say L, Souza JP, Pattinson RC: Maternal near miss-towards a standard tool for monitoring quality of maternal health care. *Best Pract Res Clin Obstet Gynaecol* 2009, **23**(3):287–96.
22. Alkema L, Chou D, Hogan D, Zhang S, Moller A, Gemmill A, Fat DM, Boerma T: **Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group**. *The Lancet* 2015, **6736**:1–13.
23. **World Health Organization** [<http://www.who.int/mediacentre/factsheets/fs348/en/>].
24. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A-B, Daniels J, Gülmezoglu A M, Temmerman M, Alkema L: **Global causes of maternal death: a WHO systematic analysis**. *The Lancet Glob Health* 2014, **2**(6):e323–e333.
25. Sawyer SM, Afi RA, Bearinger LH, Blakemore S, Dick B, Ezech AC, Patton GC: **Adolescent Health 1: Adolescence : a foundation for future health**. *The Lancet* 2012, **379**(9826):1630–40.
26. World Health Organization: *Strengthening the Health Sector Response to Adolescent Health and Development*. Geneva: World Health Organization; 2009.
27. Viner RM, Ozer EM, Denny S, Marmot M, Resnick M, Fatusi A, Currie C: **Adolescent Health 2: Adolescence and the social determinants of health**. *The Lancet* 2012, **379**(9826):1641–52.
28. Laski L, Expert Consultative Group of Every Woman Every Child on Adolescent Health: **Realising the health and wellbeing of adolescents**. *BMJ* 2015, **351**(Suppl. 1):h4119.
29. The World Bank. *World Development Report 2007: Development and the Next Generation*. Washington, DC: The World Bank; 2006.
30. World Health Organization: *Health for the World's Adolescents: A second chance in the second decade: Summary*. Geneva: World Health Organization; 2014.
31. Catalano RF, Fagan AA, Gavin LE, Greenberg MT, Irwin, CE Jr, Ross DA, Shek DTL: **Adolescent Health 3 Worldwide application of prevention science in adolescent health**. *The Lancet* 2012, **379**(9826):1653–64.
32. Williamson N: *UNFPA State of the World's Population: Motherhood in Childhood*. New York: United Nations Population Fund; 2013.
33. Anthony, D. (editor) *The State of The World's Children: Adolescence – An Age of Opportunity*. New York: United Nations Children's Fund (UNICEF); 2011.
34. Williamson LM, Parkes A, Wight D, Petticrew M, Hart GJ: **Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research**. *Reprod Health* 2009, **6**(3):1–12.

35. International Planned Parenthood Federation: *Over-protected and Under-served: A multi-country study on legal barriers to young people's access to sexual and reproductive health services*. London: International Planned Parenthood Federation; 2014.
36. Santhya KG: **Early marriage and sexual and reproductive health vulnerabilities of young women: a synthesis of recent evidence from developing countries**. *Curr Opin Obstet Gynecol* 2011, **23**(5):334–9.
37. Prakash R, Singh A, Pathak PK, Parasuraman S: **Early marriage, poor reproductive health status of mother and child well-being in India**. *J Fam Plann Reprod Health Care* 2011, **37**:136–145.
38. Santhya AKG, Ram U, Acharya R, Jejeebhoy SJ, Ram F, Santhya BG, Santhya KG, Rajib Acharya UR, Jejeebhoy SJ, Ram F, Singh A, Ram U, Acharya R, Jejeebhoy SJ, Ram F, Singh A: **Associations Between Early Marriage and Young Women's Marital and Reproductive Health Outcomes: Evidence from India**. *Int Perspect Sex Reprod Health* 2010, **36**(3):132–9.
39. Jejeebhoy SJ, Santhya KG, Francis Xavier AJ: **Demand for Contraception to Delay First Pregnancy among Young Married Women in India**. *Stud Fam Plann* 2014, **45**(2):183–201.
40. World Health Organization: *Safe abortion: technical and policy guidance for health systems*. 2nd edition. Geneva: World Health Organization; 2012.
41. World Health Organization: *Unsafe abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2008*. 6th edition. Geneva: World Health Organization; 2011.
42. Ganatra B, Tunçalp O, Johnston HB, Johnson BR, Gülmezoglu AM, Temmerman M: **From concept to measurement: operationalizing WHO's definition of unsafe abortion**. *Bull World Health Organ* 2014, **92**(3):155.
43. Grimes DA, Benson J, Singh S, Romero M, Ganatra B, Okonofua FE, Shah IH: **Unsafe abortion: the preventable pandemic**. *The Lancet* 2006, **368**(9550):1908–19.
44. World Health Organization: *Clinical practice handbook for Safe abortion*. Geneva: World Health Organization; 2014.
45. Kulier R, Kapp N, Gülmezoglu AM, Hofmeyr GJ, Cheng LN, Campana A: **Medical methods for first trimester abortion**. *Cochrane Database Syst Rev* 2011, **11**: Art. No.: CD002855.
46. Gemzell-Danielsson K, Fiala C, Weeks A: **Misoprostol: first-line therapy for incomplete miscarriage in the developing world**. *BJOG* 2007, **114**(11):1337–9.
47. Rodriguez MI, Seuc A, Kapp N, von Hertzen H, Huong NTM, Wojdyla D, Mittal S, Arustamyan K: **Acceptability of misoprostol-only medical termination of pregnancy compared with vacuum aspiration: an international, multicentre trial**. *BJOG* 2012, **119**(7):817–23.
48. Dao B, Blum J, Thieba B, Raghavan S, Ouedraogo M, Lankoande J, Winikoff B: **Is misoprostol a safe, effective and acceptable alternative to manual vacuum aspiration for postabortion care? Results from a randomised trial in Burkina Faso, West Africa**. *BJOG* 2007, **114**(11):1368–75.
49. von Hertzen H, Honkanen H, Piaggio G, Bartfai G, Erdenetungalag R, Gemzell-Danielsson K, Gopalan S, Horga M, Jerve F, Mittal S, Ngoc NTN, Peregoudov A, Prasad RNV, Pretnar-Darovec A, Shah RS, Song S, Tang OS, Wu SC: **WHO multinational study of three misoprostol regimens after mifepristone for early medical abortion. I: Efficacy**. *BJOG* 2003, **110**(9):808–18.

50. Fiala C, Gemzell-Danielsson K: **Review of medical abortion using mifepristone in combination with a prostaglandin analogue.** *Contraception* 2006, **74**(1):66–86.
51. von Hertzen H, Huong NTM, Piaggio G, Bayalag M, Cabezas E, Fang AH: **Misoprostol dose and route after mifepristone for early medical abortion: a randomised controlled noninferiority trial.** *BJOG* 2010, **117**(10):1186–96.
52. Clark WH, Gold M, Grossman D, Winikoff B: **Can mifepristone medical abortion be simplified? A review of the evidence and questions for future research.** *Contraception* 2007, **75**(4):245–50.
53. Kopp H, Fiala C, Gemzell-Danielsson K: **Assessment of significant factors affecting acceptability of home administration of misoprostol for medical abortion.** *Contraception* 2012, **85**(4):394–7.
54. Harwood B, Nansel T: **Quality of life and acceptability of medical versus surgical management of early pregnancy failure.** *BJOG* 2008, **115**(4):501–8.
55. Gemzell-Danielsson K, Lalitkumar S: **Second Trimester Medical Abortion with Mifepristone-Misoprostol and Misoprostol Alone: A Review of Methods and Management.** *Reprod Health Matters* 2008, **16**(31):162–72.
56. Joo Thong K, Baird DT: **Induction of abortion with mifepristone and misoprostol in early pregnancy.** *BJOG* 1992, **99**(12):1004–7.
57. Allen R, O'Brien BM: **Uses of misoprostol in obstetrics and gynecology.** *Rev Obstet Gynecol* 2009, **2**(3):159–68.
58. Gemzell-Danielsson K, Marions L: **Mechanisms of action of mifepristone and levonorgestrel when used for emergency contraception.** *Hum Reprod Update* 2004, **10**(4):341–8.
59. Stoddard A, Eisenberg DL: **Controversies in family planning: timing of ovulation after abortion and the conundrum of postabortion intrauterine device insertion.** *Contraception* 2011, **84**(2):119–21.
60. Barros Pereira I, Carvalho RM, Graça LM: **Intra-abortion contraception with etonogestrel subdermal implant.** *Eur J Obstet Gynecol Reprod Biol* 2015, **185**:33–5.
61. Langston AM, Joslin-Roher SL, Westhoff CL: **Immediate postabortion access to IUDs, implants and DMPA reduces repeat pregnancy within 1 year in a New York City practice.** *Contraception* 2014, **89**(2):103–8.
62. Kakaire O, Nakiggude J, Lule JC, Byamugisha JK: **Post Abortion Women's Perceptions of Utilizing Long Acting Reversible Contraceptive Methods in Uganda. A Qualitative Study.** *Open J Obstet Gynecol* 2014, **4**(16):1087–97.
63. Curtis C, Huber D, Moss-Knight T: **Postabortion family planning: addressing the cycle of repeat unintended pregnancy and abortion.** *Int Perspect Sex Reprod Health* 2010, **36**(1):44–8.
64. Renner R, Brahma D, Kapp N: **Who can provide effective and safe termination of pregnancy care? A systematic review.** *BJOG* 2012, **120**(1):23–31.
65. Kopp Kallner H, Gomperts R, Salomonsson E, Johansson M, Marions L, Gemzell-Danielsson K: **The efficacy, safety and acceptability of medical termination of pregnancy provided by standard care by doctors or by nurse-midwives: a randomised controlled equivalence trial.** *BJOG* 2014, **122**(4):1–8.
66. Jejeebhoy SJ, Kalyanwala S, Mundle S, Tank J, Francis Xavier AJ, Kumar R, Acharya R, Jha N: **Feasibility of expanding the medication abortion provider base in India to include ayurvedic physicians and nurses.** *Int Perspect Sex Reprod Health* 2012, **38**(3):133–42.

67. World Health Organization: *Health worker roles in providing safe abortion care and post-abortion contraception*. Geneva: World Health Organization; 2015.
68. Global Health Workforce Alliance and World Health Organization: *A Universal Truth: No Health Without a Workforce*. Geneva: World Health Organization; 2013.
69. Bracken H: **Home administration of misoprostol for early medical abortion in India**. *Int J Gynaecol Obstet* 2010, **108**(3):228–32.
70. Kopp Kallner H, Fiala C, Stephansson O, Gemzell-Danielsson K: **Home self-administration of vaginal misoprostol for medical abortion at 50–63 days compared with gestation of below 50 days**. *Hum Reprod* 2010, **25**(5):1153–7.
71. Michie L, Cameron ST: **Simplified follow-up after early medical abortion: 12-month experience of a telephone call and self-performed low-sensitivity urine pregnancy test**. *Contraception* 2014, **89**(5):440–5.
72. Grossman D, Grindlay K: **Alternatives to ultrasound for follow-up after medication abortion: a systematic review**. *Contraception* 2011, **83**(6):504–10.
73. Blum J, Shochet T, Lynd K, Lichtenberg ES, Fischer D, Arnesen M, Winikoff B, Blumenthal PD: **Can at-home semi-quantitative pregnancy tests serve as a replacement for clinical follow-up of medical abortion? A US study**. *Contraception* 2012, **86**(6):757–62.
74. Kalyanwala S, Acharya R, Francis Zavier AJ: **Adoption and continuation of contraception following medical or surgical abortion in Bihar and Jharkhand, India**. *Int J Gynaecol Obstet* 2012, **118** (Suppl):S47–51.
75. Fiala C, Winikoff B, Helström L, Hellborg M, Gemzell-Danielsson K: **Acceptability of home-use of misoprostol in medical abortion**. *Contraception* 2004, **70**(5):387–92.
76. Prata N, Mbaruku G, Grossman AA, Holston M: **Community-Based Availability of Misoprostol: Is It Safe?** *Afr J Reprod Health* 2009, **13**(2):117–28.
77. Cameron ST, Glasier A, Dewart H, Johnstone A, Burnside A: **Telephone follow-up and self-performed urine pregnancy testing after early medical abortion: a service evaluation**. *Contraception* 2012, **86**(1):67–73.
78. Perriera LK, Reeves MF, Chen BA, Hohmann HL, Hayes J, Creinin MD: **Feasibility of telephone follow-up after medical abortion**. *Contraception* 2010, **81**(2):143–9.
79. Oppegaard KS, Qvigstad E, Fiala C, Heikinheimo O, Benson L, Gemzell-Danielsson K: **Clinical follow-up compared with self-assessment of outcome after medical abortion: a multicentre, non-inferiority, randomised, controlled trial**. *The Lancet* 2014, **385**(9969):698–704.
80. Ngoc NTN, Bracken H, Blum J, Nga NTB, Minh NH, van Nhang N, Lynd K, Winikoff B, Blumenthal PD: **Acceptability and feasibility of phone follow-up after early medical abortion in Vietnam: a randomized controlled trial**. *Obstet Gynecol* 2014, **123**(1):88–95.
81. Bracken H, Lohr PA., Taylor J, Morroni C, Winikoff B: **RU OK? The acceptability and feasibility of remote technologies for follow-up after early medical abortion**. *Contraception* 2014, **90**(1):29–35.
82. Godfrey EM, Anderson A, Fielding SL, Meyn L, Creinin MD: **Clinical utility of urine pregnancy assays to determine medical abortion outcome is limited**. *Contraception* 2007, **75**(5):378–82.
83. Darroch JE, Singh S: **Trends in contraceptive need and use in developing countries in 2003, 2008, and 2012: an analysis of national surveys**. *The Lancet* 2013, **381**(9879):1756–62.

84. Cleland J, Harbison S, Shah IH: **Unmet need for contraception: issues and challenges.** *Stud Fam Plann* 2014, **45**(2):105–22.
85. Peterson HB, Darmstadt GL, Bongaarts J: **Meeting the unmet need for family planning: now is the time.** *The Lancet* 2013, **381**(9879):1696–9.
86. Sedgh G, Hussain R: **Reasons for Contraceptive Nonuse among Women Having Unmet Need for Contraception in Developing Countries.** *Stud Fam Plann* 2014, **45**(2):151–69.
87. Sedgh G, Hussain R, Bankole A, Singh S: *Women with an Unmet Need for Contraception in Developing Countries and Their Reasons for Not Using a Method.* New York: Guttmacher Institute; 2007.
88. Gemzell-Danielsson K, Kopp Kallner H, Faúndes A: **Contraception following abortion and the treatment of incomplete abortion.** *Int J Gynecol Obstet* 2014, **126**(Suppl. 1):S52–S55.
89. Goldstone P, Mehta YH, McGeechan K, Francis K, Black KI: **Factors predicting uptake of long-acting reversible methods of contraception among women presenting for abortion.** *Med J Aust* 2014, **201**(7):412–16.
90. Culwell KR, Vekemans M, de Silva U, Hurwitz M, Crane BB: **Critical gaps in universal access to reproductive health: contraception and prevention of unsafe abortion.** *Int J Gynaecol Obstet* 2010, **110** (Suppl):S13–6.
91. Berenson AB, Tan A, Hirth JM: **Complications and continuation rates associated with 2 types of long-acting contraception.** *Am J Obstet Gynecol* 2014, **212**(6):1–8.
92. Mansour D, Inki P, Gemzell-Danielsson K: **Efficacy of contraceptive methods: a review of the literature.** *Eur J Contracept Reprod Health Care* 2010, **15**(1):4–16.
93. Kost K, Singh S, Vaughan B, Trussell J, Bankole A: **Estimates of contraceptive failure from the 2002 National Survey of Family Growth.** *Contraception* 2008, **77**(1):10–21.
94. Ali MM, Cleland JG, Shah IH: *Causes and consequences of contraceptive discontinuation: evidence from 60 demographic and health surveys.* Geneva: World Health Organization; 2012.
95. Salvi S, Apte K, Madas S, Barne M, Chhowala S, Sethi T, Aggarwal K, Agrawal A, Gogtay J: **Symptoms and medical conditions in 204 912 patients visiting primary health-care practitioners in India: a 1-day point prevalence study (the POSEIDON study).** *The Lancet Glob. Heal.* 2015, **3**(12):e776–e784.
96. Russo JA, Miller E, Gold MA: **Myths and misconceptions about long-acting reversible contraception (LARC).** *J Adolesc Heal* 2013, **52**(4):S14–S21.
97. White K, Hopkins K, Potter JE, Grossman D: **Knowledge and attitudes about long-acting reversible contraception among Latina women who desire sterilization.** *Women's Heal. Issues* 2013, **23**(4):e257–e263.
98. Rose SB, Cooper AJ, Baker NK, Lawton B: **Attitudes Toward Long-Acting Reversible Contraception Among Young Women Seeking Abortion.** *J Women's Heal* 2011, **20**(11):1729–35.
99. Mavranezouli I: **The cost-effectiveness of long-acting reversible contraceptive methods in the UK: Analysis based on a decision-analytic model developed for a National Institute for Health and Clinical Excellence (NICE) clinical practice guideline.** *Hum Reprod* 2008, **23**(6):1338–45.
100. Sample Registration System (SRS): *Special Bulletin on Maternal Mortality in India 2010–12.* New Delhi: Office of the Registrar General, India; 2013.

101. Sample Registration System (SRS): *Maternal Mortality in India: 1997–2003: Trends, Causes and Risk factors*. New Delhi: Office of the Registrar General, India; 2006.
102. Elul B, Bracken H, Verma S, Ved R, Singhi R, Lockwood K: *Unwanted Pregnancy and Induced Abortion in Rajasthan, India: A Qualitative Exploration*. New Delhi: Population Council; 2004.
103. Sedgh G, Henshaw S, Singh S, Åhman E, Shah IH: **Induced abortion: estimated rates and trends worldwide**. *The Lancet* 2007, **370**(9595):1338–45.
104. Duggal R, Ramachandran V: **The Abortion Assessment Project – India: Key Findings and Recommendations**. *Reprod Health Matters* 2004, **12**(24):122–9.
105. Rossier C: **Estimating Induced Abortion Rates: A Review**. *Studies in Family Planning* 2003, **34**(2):87–102.
106. Singh SK, Kaur R, Gupta M, Kumar R: **Impact of national rural health mission on perinatal mortality in rural India**. *Indian Pediatr.* 2012, **49**(2):136–8.
107. Sharma AK: **National Rural Health Mission: Time to Take Stock**. *Indian J Community Med* 2009, **34**(3):175–82.
108. Taneja DK: **National Rural Health Mission-a critical review**. *Indian J Public Health* 2004, **49**(3):152–5.
109. Dehury R: **Fragile health policy of India: discussion on maternal health**. *Int J Med Sci Public Health* 2015, **4**(3):310–14.
110. Ministry of Health & Family Welfare Government of India: *GUIDANCE: Ensuring Access to safe Abortion and Addressing Gender Biased Sex Selection*. New Delhi: Ministry of Health and Family Welfare, Government of India; 2015.
111. Parliament of the Republic of India: *The Medical Termination of Pregnancy Act, 1971, Act No. 34 of 1971, as amended by Act No. 64 of 2002*. New Delhi: Government of India; 2002.
112. National Rural Health Mission, Ministry of Health and Family Welfare, Government of India: *Comprehensive Abortion Care - Training and Service Delivery Guidelines*. New Delhi: Ministry of Health and Family Welfare, Government of India; 2010.
113. Banerjee SK, Andersen K, Tank J, Parihar M, Shah M, Thanwala U: **Evaluation of a network of medical abortion providers in two districts of Maharashtra, India**. *Glob Public Health an Int J Res Policy Pract.* 2010, **6**(3):283–292.
114. Hirve SS: **Abortion law, policy and services in India: a critical review**. *Reprod Health Matters* 2004, **12**(24):114–21.
115. Paul M, Danielsson KG, Esse B, Allvin MK: **The importance of considering the evidence in the MTP 2014 Amendment debate in India unsubstantiated arguments should not impede improved access to safe abortion**. *Glob Health Action* 2015, **8**:8–11.
116. Johnston HB: *Abortion Practice in India - A review of Literature*. Mumbai: Centre for Enquiry into Health and Allied Themes (CEHAT) Research; 2002.
117. Chaturvedi S, Ali S, Randive B, Sabde Y, Diwan V, De Costa A: **Availability and distribution of safe abortion services in rural areas: a facility assessment study in Madhya Pradesh, India**. *Glob Health Action* 2015, **8**:26346.
118. Duggal R: **The political economy of abortion in India: cost and expenditure patterns**. *Reprod Health Matters* 2004, **12**(24):130–7.

119. Jejeebhoy S, Francis Xavier AJ, Acharya R, Kalyanwala S: *Increasing access to safe abortion in rural Rajasthan: Outcomes of a Comprehensive Abortion Care model*. New Delhi: Population Council; 2011.
120. Kalyanwala S, Francis Xavier AJ, Jejeebhoy S, Kumar R: **Abortion experiences of unmarried young women in India: evidence from a facility-based study in Bihar and Jharkhand**. *Int Perspect Sex Reprod Health* 2010, **36**(2):62–71.
121. Mundle S, Elul B, Anand A, Kalyanwala S, Ughade S: **Increasing access to safe abortion services in rural India: experiences with medical abortion in a primary health center**. *Contraception* 2007, **76**(1):66–70.
122. Boler T, Marston C, Corby N, Gardiner E: *Medical Abortion in India: A Model for the rest of the world?* London: Marie Stopes International; 2009.
123. Creanga AA, Roy P, Tsui AO: **Characteristics of abortion service providers in two northern Indian states**. *Contraception* 2008, **78**(6):500–6.
124. Sample Registration System (SRS): *SRS Statistical Report 2013*. New Delhi: Office of the Registrar General, India; 2013.
125. Ganatra B: **Maintaining Access to Safe Abortion and Reducing Sex Ratio Imbalances in Asia**. *Reprod Health Matters* 2008, **16**(31):90–8.
126. Jha P, Kesler M a., Kumar R, Ram F, Ram U, Aleksandrowicz L, Bassani DG, Chandra S, Banthia JK: **Trends in selective abortions of girls in India: Analysis of nationally representative birth histories from 1990 to 2005 and census data from 1991 to 2011**. *The Lancet* 2011, **377**(9781):1921–8.
127. Nidadavolu V, Bracken H: **Abortion and sex determination: conflicting messages in information materials in a District of Rajasthan, India**. *Reprod Health Matters* 2006, **14**(27):160–71.
128. Perwez S, Jeffery R, Jeffery P: **Declining Child Sex Ratio and Sex-Selection in India. A Demographic Epiphany?** *Econ Polit Wkly* 2012, **47**(33):73–77.
129. Oomman N, Ganatra BR: **Sex selection: The systematic elimination of girls**. *Reprod Health Matters* 2002, **10**(19):184–8.
130. International Institute for Population Sciences: *National Family Health Survey (NFHS-3), 2005-06, India: Key Findings*. Mumbai: Ministry of Health and Family Welfare, Government of India; 2007.
131. Sangwan N, Maru RM: **The Target-Free Approach: An Overview**. *J Heal Manag* 1999, **1**(1):71–96.
132. Shaw A: **Attitudes to Genetic Diagnosis and to the Use of Medical Technologies in Pregnancy: Some British Pakistani Perspectives**. In *Reproductive Agency, Medicine And the State - Cultural Transformations in Childbearing*, edited by Unnithan-Kumar M. Oxford, New York: Berghahn Books; 2004:25–57.
133. *Canadian Oxford Dictionary*. Don Mills, ON: Oxford University Press; 1998.
134. Levesque J-F, Harris MF, Russell G: **Patient-centred access to health care: conceptualising access at the interface of health systems and populations**. *Int J Equity Health* 2013, **12**(1):18.
135. Penchansky R, Thomas JW: **The concept of access: definition and relationship to consumer satisfaction**. *Med Care* 1981, **19**(2):127–40.
136. Obrist B, Iteba N, Lengeler C, Makemba A, Mshana C, Nathan R, Alba S, Dillip A, Hetzel MW, Mayumana I, Schulze A, Mshinda H: **Access to Health Care in Contexts of Livelihood Insecurity : A Framework for Analysis and Action**. *PLOS Med* 2007, **4**(10):1584–8.
137. Jeffery P, Jeffery R, Lyon A: *Contaminating States and Women's Status - Midwifery, Childbearing and the State in Rural North India*. New Delhi: Indian Social Institute; 1985.

138. Jackson AV, Dayananda I, Fortin JM, Fitzmaurice G, Goldberg AB: **Can women accurately assess the outcome of medical abortion based on symptoms alone?** *Contraception* 2012, **85**(2):192–7.
139. Schulz KF, Altman DG, Moher D: **CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials.** *The Lancet* 2010, Published online March 24, 2010 Webappendix.
140. Registrar General and Census Commissioner: *Annual Health Survey 2012-13: Fact Sheet Rajasthan.* New Delhi: Government of India, Ministry of Home Affairs; 2012.
141. Elul B: **Assessments of the importance of provider characteristics for abortion care: data from women in Rajasthan, India.** *Health Care Women Int* 2010, **32**(1):72–95.
142. Iyengar SD, Iyengar K, Gupta V: **Maternal health: a case study of Rajasthan.** *J Health Popul Nutr* 2009, **27**(2):271–92.
143. Unnithan-Kumar M: **The State, Rajput Identity and Women's Agency in 19th and 20th Century Rajasthan.** *Indian J Gen Stud* 2000, **7**(1):49–70.
144. International Institute for Population Sciences (IIPS) and Macro International: *National Family Health Survey (NFHS-3), India, 2005-06: Rajasthan.* Mumbai: Ministry of Health & Family Welfare, Government of India; 2008.
145. National Rural Health Mission: *4th Common Review Mission of the National Rural Health Mission – Report from Rajasthan.* Jaipur: Ministry of Health & Family Welfare, Government of India; 2010.
146. Sample Registration System (SRS): *Maternal & Child Mortality and Total Fertility Rates.* New Delhi: Office of the Registrar General, India; 2011.
147. Iyengar SD, Iyengar K, Suhalka V: *Situation Analysis of Abortion Services in Rajasthan - Executive Summary.* Udaipur: Action Research & Training for Health (ARTH); 2004.
148. Mitra A: **The status of women among the scheduled tribes in India.** *J Socio Econ* 2008, **37**(3):1202–17.
149. Pande M: *Stepping Out – Life and sexuality in rural India.* New Delhi: Penguin Books India; 2003.
150. Paul M, Iyengar K, Iyengar S, Gemzell-Danielsson K, Essén B, Klingberg-Allvin M: **Simplified follow-up after medical abortion using a low-sensitivity urinary pregnancy test and a pictorial instruction sheet in Rajasthan, India - study protocol and intervention adaptation of a randomised control trial.** *BMC Women's Health* 2014, **14**(1):98.
151. Concept Foundation, Ipas, PATH: **Selected Illustrations for Low-literacy Audiences.** 2009:1–5. [online at <http://www.medabon.info/PDF/illustrations.pdf> accessed 18 November 2016]
152. Guba ES, Lincoln Y: *Fourth Generation Evaluation.* 1st edition. London: SAGE Publications Ltd; 1989.
153. Williamson DL, Choi J, Charchuk M, Rempel GR, Pitre N, Breitreuz R, Kushner KE: **Interpreter-facilitated cross-language interviews: a research note.** *Qual Res* 2011, **11**(4):381–394.
154. Braun V, Clarke V: **Using thematic analysis in psychology.** *Qual Res Psychol* 2006, **3**(2):77–101.
155. Green J, Thorogood N: *Qualitative Methods for Health Research.* 2nd edition. London: SAGE Publications Ltd; 2009.
156. Foucault M: *Discipline and Punish: The Birth of the Prison.* Reprint. London: Penguin Books; 1977.
157. Bandura A: **Social Cognitive Theory: An Agentic Perspective.** *Annu Rev Psychol* 2001, **52**(1):1–26.

158. Maxwell C, Aggleton P: **Agency in action – young women and their sexual relationships in a private school.** *Gend Educ* 2010, **22**(3):327–343.
159. Grossman D, Ellertson C, Grimes D a, Walker D: **Routine follow-up visits after first-trimester induced abortion.** *Obstet Gynecol* 2004, **103**(4):738–45.
160. El-Noush H, Silver KL, Pamba AO, Singer PA: **Innovating for women’s, children’s, and adolescents’ health.** *BMJ* 2015, **351**(14):h4151.
161. Karki C, Pokharel H, Kushwaha A, Manandhar D, Bracken H, Winikoff B: **Acceptability and feasibility of medical abortion in Nepal.** *Int J Gynaecol Obstet* 2009, **106**(1):39–42.
162. Cameron ST, Glasier A, Johnstone A, Dewart H, Campbell A: **Can women determine the success of early medical termination of pregnancy themselves?** *Contraception* 2015, **91**(1):6–11.
163. Platais I, Tsereteli T, Comendant R, Kurbanbekova D, Winikoff B: **Acceptability and feasibility of phone follow-up with a semiquantitative urine pregnancy test after medical abortion in Moldova and Uzbekistan.** *Contraception* 2015, **91**(2):178–83.
164. Ganatra B: **Health worker roles in safe abortion care and post-abortion contraception.** *The Lancet Glob Health* 2015, **3**(9):e512–e513.
165. Swica Y, Chong E, Middleton T, Prine L, Gold M, Schreiber CA, Winikoff B: **Acceptability of home use of mifepristone for medical abortion.** *Contraception* 2013, **88**(1):122–7.
166. Chong E, Frye LJ, Castle J, Dean G, Kuehl L, Winikoff B: **A prospective, non-randomized study of home use of mifepristone for medical abortion in the U.S.** *Contraception* 2015, **92**(3):215–9.
167. Gomperts R, van der Vleuten K, Jelinska K, da Costa CV, Gemzell-Danielsson K, Kleiverda G: **Provision of medical abortion using telemedicine in Brazil.** *Contraception* 2014, **89**(2):129–33.
168. Conkling K, Karki C, Tuladhar H, Bracken H, Winikoff B: **A prospective open-label study of home use of mifepristone for medical abortion in Nepal.** *Int J Gynaecol Obstet* 2015, **128**(3):220–3.
169. Fiala C, Safar P, Bygdeman M, Gemzell-Danielsson K: **Verifying the effectiveness of medical abortion; ultrasound versus hCG testing.** *Eur J Obstet Gynecol Reprod Bio* 2003, **109**(2):190–5.
170. Peña M, Dzuba IG, Smith PS, Mendoza LJA, Bousiéguéz M, Martínez MLG, Polanco RR, Villalón AEF, Winikoff B: **Efficacy and acceptability of a mifepristone-misoprostol combined regimen for early induced abortion among women in Mexico City.** *Int J Gynaecol Obstet* 2014, **127**(1):82–5.
171. Winikoff B, Sivin I, Coyaji KJ, Cabezas E, Bilian X, Sujuan G, Ming-kun D, Krishna UR, Eschen A, Ellerston C: **Safety , efficacy , and acceptability of medical abortion in China , Cuba , and India: A comparative trial of mifepristone-misoprostol versus surgical abortion.** *American Journal of Obstetrics and Gynecology* 1997, **176**(2):431–7.
172. Edmeades J, Lee-Rife SM, Malhotra A: **Women and reproductive control: the nexus between abortion and contraceptive use in Madhya Pradesh, India.** *Stud Fam Plann* 2010, **41**(2):75–88.
173. Thapa S, Neupane S: **Risk factors for repeat abortion in Nepal.** *Int. J. Gynecol. Obstet.* 2013, **120**(1):32–6.
174. Purcell C, Cameron S, Lawton J, Glasier A, Harden J: **Contraceptive care at the time of medical abortion: experiences of women and health professionals in a hospital or community sexual and reproductive health context.** *Contraception* 2015, in press.

175. Francis Xavier AJ, Padmadas SS: **Postabortion contraceptive use and method continuation in India.** *Int J Gynecol Obstet* 2012, **118**(1):65–70.
176. Ngo TD, Keogh S, Nguyen TH, Le HT, Pham KHT, Nguyen YBT: **Risk factors for repeat abortion and implications for addressing unintended pregnancy in Vietnam.** *Int J Gynecol Obstet* 2014, **125**(3):241–246.
177. Begum F, Zaidi S, Fatima P, Shamsuddin L, Anowar-Ul-Azim a. KM, Begum RA: **Improving manual vacuum aspiration service delivery, introducing misoprostol for cases of incomplete abortion, and strengthening postabortion contraception in Bangladesh.** *Int J Gynecol Obstet* 2014, **126**(Suppl. 1):S31–5.
178. Cameron S: **Postabortal and postpartum contraception.** *Best Pract Res Clin Obstet Gynaecol* 2014, **28**(6):871–80.
179. Black KI, Gupta S, Rassi A, Kubba A: **Why do women experience untimed pregnancies? A review of contraceptive failure rates.** *Best Pract Res Clin Obstet Gynaecol* 2010, **24**(4):443–55.
180. Ceylan A, Ertem M, Saka G, Akdeniz N: **Post abortion family planning counseling as a tool to increase contraception use.** *BMC Public Health* 2009, **9**:20.
181. Esber A, Foraker RE, Hemed M, Norris A: **Partner approval and intention to use contraception among Zanzibari women presenting for post-abortion care.** *Contraception* 2014, **90**(1):23–8.
182. Isaacs JN, Creinin MD: **Miscommunication between healthcare providers and patients may result in unplanned pregnancies.** *Contraception* 2003, **68**(5):373–6.
183. Brown SS, Burdette L, Rodriguez P: **Looking inward: provider-based barriers to contraception among teens and young adults.** *Contraception* 2008, **78**(5):355–7.
184. Unnithan-Kumar M: **Conception Technologies, Local Healers and Negotiations around Childbearing in Rajasthan.** In *Reproductive Agency, Medicine and the State: – Cultural Transformations in Childbearing*, edited by Unnithan-Kumar M. Oxford, New York: Berghahn Books; 2004:59–81.
185. Michie L, Cameron ST, Glasier A, Wellings K, Loudon J: **Myths and misconceptions about intrauterine contraception among women seeking termination of pregnancy.** *J Fam Plann Reprod Heal. Care* 2014, **40**(1):36–40.
186. Jejeebhoy SJ, Francis Xavier AJ: *Injectable contraceptives: Perspectives and experiences of women and health care providers in India.* New Delhi: Population Council; 2012..
187. Blumenthal PD, Clark S, Coyaji JK, Ellertson C, Fiala C, Mazibuko T, Nhan VQ, Ulmann A, Winikoff B: *Providing medical abortion in low-resource settings: An introductory guidebook.* Second edition. New York: Gynuity Health Projects; 2009.
188. Shah IH, Weinberger MB: **Expanding access to medical abortion: Perspectives of women and providers in developing countries.** *Int J Gynecol Obstet* 2012, **118**(Suppl. 1):S1–S3.
189. Klingberg-Allvin M, Cleeve A, Atuhairwe A, Mbona Tumwesigye N, Faxelid E, Byamugisha J, Gemzell-Danielsson K: **Comparison of treatment of incomplete abortion with misoprostol by physicians and midwives at district level in Uganda: A randomised controlled equivalence trial.** *The Lancet* 2014, **385**(9985):2392–8.

190. Acharya R, Kalyanwala S: **Knowledge, attitudes, and practices of certified providers of medical abortion: evidence from Bihar and Maharashtra, India.** *Int J Gynaecol Obstet* 2012, **118**(Suppl. 1) :S40–6.
191. Sjöström S, Essén B, Sydén F, Gemzell-Danielsson K, Klingberg-Allvin M: **Medical students' attitudes and perceptions on abortion: a cross-sectional survey among medical interns in Maharashtra, India.** *Contraception* 2014, **90**(1):42–6.
192. Acharya R, Kalyanwala S: **Physicians' and non-physicians' views about provision of medical abortion by nurses and AYUSH physicians in Maharashtra and Bihar, India.** *Reprod Health Matters* 2015, **22**(44):36–46.
193. Colvin CJ, de Heer J, Winterton L, Mellenkamp M, Glenton C, Noyes J, Lewin S, Rashidian A: **A systematic review of qualitative evidence on barriers and facilitators to the implementation of task-shifting in midwifery services.** *Midwifery* 2013, **29**(10):1–11.
194. Rehnström Loi U, Gemzell-Danielsson K, Faxelid E, Klingberg-Allvin M: **Health care providers' perceptions of and attitudes towards induced abortions in sub-Saharan Africa and Southeast Asia: a systematic literature review of qualitative and quantitative data.** *BMC Public Health* 2015, **15**(1):139.
195. Paul M, Gemzell-Danielsson K, Kiggundu C, Namugenyi R, Klingberg-Allvin M: **Barriers and facilitators in the provision of post-abortion care at district level in central Uganda - a qualitative study focusing on task sharing between physicians and midwives.** *BMC Health Serv. Res.* 2014, **14**(1):28.
196. Banerjee SK, Andersen KL, Warvadekar J, Aich P, Rawat A, Upadhyay B: **How prepared are young, rural women in India to address their sexual and reproductive health needs? a cross-sectional assessment of youth in Jharkhand.** *Reprod. Health* 2015, **12**:97.
197. Francis Xavier AJ, Jejeebhoy S, Kalyanwala S: **Factors associated with second trimester abortion in rural Maharashtra and Rajasthan, India.** *Glob Public Heal an Int J Res Policy Pract* 2012, **7**(8):897–908.
198. Acharya R, Santhya KG, Jejeebhoy SJ: **Exploring Associations between Mobility and Sexual Experiences among Unmarried Young People: Evidence from India.** *Ann Am Acad Pol Soc Sci* 2013, **648**(1):120–35.
199. Mbizvo MT, Zaidi S: **Addressing critical gaps in achieving universal access to sexual and reproductive health (SRH): the case for improving adolescent SRH, preventing unsafe abortion, and enhancing linkages between SRH and HIV interventions.** *Int J Gynaecol Obstet* 2010, **110** (Suppl) :S3–6.
200. Tripney J, Kwan I, Bird KS: **Postabortion family planning counseling and services for women in low-income countries: a systematic review.** *Contraception* 2013, **87**(1):17–25.
201. Mistry R, Galal O, Lu M: **"Women's autonomy and pregnancy care in rural India: a contextual analysis".** *Soc Sci Med* 2009, **69**(6):926–33.
202. Self S: **Spousal-Differences in Perception of Female Autonomy in Household Decision-Making in Nepal.** *Development Journal of the South,* 2015, **1**(1):65–81.
203. Jejeebhoy SJ: **Convergence and Divergence in Spouses' Perspectives on Women's Autonomy in Rural India.** *Stud Fam Plann* 2002, **33**(4):299–308.
204. Singh L, Rai RK, Singh PK: **Assessing the utilization of maternal and child health care among married adolescent women: evidence from India.** *J Biosoc Sci* 2012, **44**(1):1–26.

205. Ouédraogo R, Sundby J: **Social determinants and access to induced abortion in burkina faso: from two case studies.** *Obstet. Gynecol. Int.* 2014, **2014**:402456.
206. Bellizzi S, Sobel HL, Obara H, Temmerman M: **Underuse of modern methods of contraception: underlying causes and consequent undesired pregnancies in 35 low- and middle-income countries.** *Hum Reprod* 2015, **0**:1–14.
207. Government of India, Ministry of Health & Family Welfare: *Strategy Handbook - Rashtriya Kishor Swasthya Karyakram (RKSK)*. New Delhi: Government of India; 2014:1–168.
208. Banerjee SK, Andersen KL, Buchanan RM, Warvadekar J: **Woman-centered research on access to safe abortion services and implications for behavioral change communication interventions: a cross-sectional study of women in Bihar and Jharkhand, India.** *BMC Public Health* 2012, **12**(1):175.
209. Kaur R: **Mapping the Adverse Consequences of Sex Selection and Gender Imbalance in India and China.** *Econ Polit Wkly* 2013, **48**(25):37–44.
210. Unnithan-Kumar M: **Female selective abortion - beyond “culture”: family making and gender inequality in a globalising India.** *Cult Health Sex* 2010, **12**(2):153–66.
211. Puri S, Adams V, Ivey S, Nachtigall RD: **“There is such a thing as too many daughters, but not too many sons”: A qualitative study of son preference and fetal sex selection among Indian immigrants in the United States.** *Soc Sci Med* 2011, **72**(7):1169–76.
212. Malterud K: **Qualitative research: standards, challenges, and guidelines.** *The Lancet* 2001, **358**(9280):483–8.
213. Mays N, Pope C: **Qualitative research in health care. Assessing quality in qualitative research.** *BMJ* 2000, **320**(7726):50–2.
214. Lincoln YS, Guba EG: *Naturalistic Inquiry*. 1st edition. Newbury Park: SAGE Publications Ltd; 1985.
215. Stuart GS, Grimes DA: **Social desirability bias in family planning studies: a neglected problem.** *Contraception* 2009, **80**(2):108–12.

# Appendix I

## Vignettes Used in the Qualitative Interviews (Study III)

Topic	Vignette
Infertility	Lachhi and Hari have been married for two years however Lachhi is still not pregnant. Hari's mother is starting to wonder when she will have her first grandchild and puts pressure on both of them, especially on Lachhi. She's starting to wonder if there is something wrong or why she can't do what she is supposed to do. Hari doesn't want to have a child just yet as he is about to finish up school and wants to settle down first. He has applied for a job in the city and wants to take his wife there. Now the wife starts asking Hari to when they should have a baby, if the time hasn't come yet and why they haven't successfully conceived yet. She says she's ready for having a baby because her mother in-law wants it so bad. She can't keep living in this house if she doesn't get pregnant soon.
Modern Contraception	Tejki and Kishan have been married for 4 years and have a 3 years old son. Kishan is ready for another child but Tejki doesn't get pregnant. Kishan keeps trying and gets confused and angry because his wife doesn't get pregnant. Everybody in the village is starting to wonder why they haven't tried to have a second child yet, but Tejki doesn't get pregnant. Now, what Kishan doesn't know is that Tejki is using contraception. She's taking an injection every three months to avoid pregnancy because she is not yet ready for another child. In fact, she didn't even want to have the first one, but that was required from her. She is tired of having to take care of the child and carry out all the household work without support from her husband. She's using contraception because the husband doesn't treat the son well, and she is scared that if she'll have another child, he'll treat both her and the child even worse. Kishan is getting more and more angry and starts abusing his wife, verbally and physically, when nothing happens he starts hitting his son. She has to get pregnant, but she really doesn't want to.
Traditional Contraception	Ratni and Noja are just married and live together at Noja's house. Ratni is very shy to speak and stay close to her husband but brings up the fact that she is scared to get pregnant too early. She asks Noja for advice. He says that he has heard about some pills or something you can take to avoid getting pregnant. Noja suggests that they go to the clinic to find out more. However, they have to come up with a plan to explain to his mother why she is not getting pregnant right away. A few days pass and Ratni is asking around a bit about contraception among her friends and old women in the village. She hears that it is really bad for the woman, that she will lose her lust as well as there is a risk that she'll never get pregnant again. She talks to Noja and tells him that it is probably not such a good idea after all. Maybe they should just do it naturally. Her sister in-law had told her about the natural method, where you should make sure there is no contact for a few days after the period. She suggests they try this instead. A few months later Ratni tells Noja that her periods have stopped and that she is pregnant. She gives birth to the child but is now ready to use a contraceptive method regardless so she seeks help in the clinic herself. If she would have known more about contraception she'd never had to have a baby so early.



# Acta Universitatis Upsaliensis

*Digital Comprehensive Summaries of Uppsala Dissertations  
from the Faculty of Medicine 1163*

Editor: The Dean of the Faculty of Medicine

A doctoral dissertation from the Faculty of Medicine, Uppsala University, is usually a summary of a number of papers. A few copies of the complete dissertation are kept at major Swedish research libraries, while the summary alone is distributed internationally through the series Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine. (Prior to January, 2005, the series was published under the title "Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine".)

Distribution: [publications.uu.se](http://publications.uu.se)  
urn:nbn:se:uu:diva-267167



ACTA  
UNIVERSITATIS  
UPSALIENSIS  
UPPSALA  
2015