MIDWIFE-LED CARE

IN LOW- AND MIDDLE-INCOME COUNTRIES WITH A FOCUS ON IMPLEMENTATION IN BANGLADESH

Michaela Michel-Schuldt

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Centre for Midwifery, Child and Family Health

Faculty of Health, University of Technology Sydney, Australia

and

School of Health Sciences, University of Dundee, Scotland

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Michaela Michel-Schuldt declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Health at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree at any other academic institution except as fully acknowledged within the text. This research is supported by the Australian Government Research Training Program. This thesis is the result of a Collaborative Doctoral Research Degree program with the School of Health Sciences at the University of Dundee

Signature: Production Note:
Signature removed prior to publication.

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ABBREVIATIONS

ADP	Annual Development Programme
AMTSL	Active management of third stage of labour
AMU	Alongside midwifery unit
ANC	Antenatal care
BDHS	Bangladesh Demographic Health Survey
BEmONC	Basic Emergency Obstetric and Newborn Care
BMI	Body Mass Index
BMS	Bangladesh Midwifery Society
BNMC	Bangladesh Nursing and Midwifery Council
BRAC	Bangladesh Rehabilitation Assistance Committee, then Bangladesh Rural Advancement Committee, and later Building Resources Across Communities
CAS	Complex adaptive systems
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHE	Current Health Expenditure
CSBA	Community Skilled Birth Attendant
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DHS	Demographic & Health Survey
DGNM	Directorate General Nursing and Midwifery
EmONC	Emergency Obstetric and Newborn Care
EWEC	Every Woman Every Child
FWV	Family Welfare Visitor
GDI	Gender Development Index
GDP	Gross Domestic Product
GO	Government order
HDI	Human Development Index
HNPSDP	Health Population and Nutrition Sector Development Programme
HP	Health professional

ICM	International Confederation of Midwives
ILO	International Labour Organization
IMPAC	Integrated Management of Pregnancy and Childbirth
ISCO	International Standard Classification of Occupations
LDC	Least developed countries
LMICs	Low- and middle-income countries
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Surveys
MLC	Midwife-led care
MMR	Maternal Mortality Rate
MoHFW	Ministry of Health and Family Welfare
MR	Menstrual regulation
MSS	Midwives Service Scheme
NGO	Non-governmental organisation
NMR	Newborn Mortality Ratio
NVD	Normal vaginal delivery
ODA	Official Development Assistance
OOP	Out-of-pocket
OT	Operation theatre
PHC	Primary Healthcare
PNC	Postnatal care
PPP	Purchasing power parity
QMNC	Quality Maternal and Newborn Care
PRISMA-P	Preferred Reporting Items for Systematic review and Meta-Analysis Protocols
RCT	Randomised Controlled Trial
RMNCAH	Reproductive, maternal, newborn, child and adolescent health
SBA	Skilled Birth Attendant
SDG	Sustainable Development Goal
SPDs	Standard Delivery Posts
TBA	Traditional Birth Attendant

UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UP	Union Parishads
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization

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ABSTRACT

Background: Rigorous research on midwife-led models of care in high-income countries show that they are effective and should be offered to most women, as they provide benefits for childbearing women and their newborns. There are few studies on midwife-led models of care in low- and middle-income countries (LMIC). A better understanding of midwife-led care (MLC) in LMICs is needed.

Aim: The overall aim was to explore how MLC is being implemented in LMICs. The three objectives were to systematically review the current evidence on midwife-led care in low- and middle-income countries, to assess the policies and health system efforts related to midwife-led care in a LMIC (Phase 1) and then to explore how midwife-led care was implemented in this country (Phase 2).

Method: First, two reviews were conducted. In Phase 1, a policy and health systems analysis in Bangladesh, was undertaken. Finally, Phase 2 was a case study in Bangladesh using an explanatory mixed methods design. In this primary study, a multistage purposeful sampling technique was used and face to face interviews and focus groups were conducted. Data analysis used a framework approach. A synthesis of all phases identified the essential elements of MLC in these contexts.

Findings: The reviews showed that midwife-led care may be cost-effective, is likely to improve maternal mortality and morbidity, reduce interventions and improves quality of care, although more research is needed. MLC is provided in a variety of settings: urban and rural; in primary, secondary or tertiary facilities; in the private and public sector; in free-standing or alongside midwife-led units; and midwives work alone or in teams. Workforce shortages exist and negatively impact on the provision of MLC. Standards of education, regulation and training influence the quality of care and supportive environments are important. The policy and health systems analysis highlighted the need for leadership and resource mobilisation. The case study identified four themes in relation to the implementation of MLC in Bangladesh. These were addressing the heart and soul

of MLC, empowering midwives to become leaders, structuring midwife-led care and providing care across the continuum.

Conclusion: Midwife-led care in low- and middle-income countries has potential to improve outcomes in maternal and newborn health and might be cost-effective. The implementation of midwife-led care varies and supportive systems and workforce planning are key to its success. The essential elements of MLC that were identified could be applied to similar contexts.

CHAPTER 1. INTRODUCTION

Implementation of evidence-based midwifery care in low and middle-income countries (LMIC) has the potential to provide sustainable solutions to meet the need for quality of care in maternal and neonatal health. Rigorous research on this model of care in high income countries shows that midwife-led continuity of care is effective and that it should be offered to most women as it provides multiple benefits for childbearing women and their newborns (Sandall et al. 2016). These will be described in detail later in this thesis. A limited number of studies on midwife-led models of care have been conducted in low- and middle-income countries and these show promising results. There is a need for research in the area of midwife-led care in LMICs and this study was undertaken to further add to the body of evidence.

The first chapter of this thesis provides the research question to contextualise the focus of the work for the reader. The research is then placed in a wider global context within the area of maternal and newborn health. This is followed by a description of the concept of midwife-led care. I then provide my personal experience and explain what led me to undertake this PhD project. Finally, the structure of the thesis and the remaining chapters is provided.

1.1. RESEARCH QUESTION

The main research question is:

- How has midwife-led care been implemented in low- and middle-income countries?

The objectives are:

- to systematically review the current evidence on midwife-led care in low- and middle-income countries
- to assess the policies and health system efforts related to midwife-led care in a low-and middle-income country
- to explore how midwife-led care has been implemented in a low- and middle-income country

1.2. BACKGROUND

1.2.1. THE GLOBAL PERSPECTIVE ON MATERNAL AND NEWBORN MORTALITY

All around the world, women and children still die around the time of childbirth or in the first few days after birth due to preventable causes. It is estimated that each year, 300,000 women and 2.4 million newborns died at around these times (UN 2020; World Health Organization 2019). There have been improvements in the past 20 years. Data from 185 countries show a decline in the maternal mortality ratio (MMR) of 38% globally between 2000 (342 maternal deaths per 100,000 live births) and 2017 (211 maternal death per 100,000 live births) (World Health Organization 2019). The global maternal mortality estimates however, reveal an unequal situation: The MMR in low- and middle-income countries is still high, estimated to be 415 maternal deaths per 100,000 live births, which is more than 40 times higher than the MMR in Europe and in countries like Australia and New Zealand. In West and Central Africa, the MMR is highest with 717 maternal deaths per 100,000 live births, followed by East and Southern Africa with an MMR of 391 and Arab States with an MMR of 151 compared to a MMR of 12 in high-income countries where the United Nations Population Fund (UNFPA) has no country offices. The majority, 94%, of all maternal deaths globally occurred in low- and lower-middle-income countries (World Health Organization 2019).

According to recent estimates, about 6700 children died in the neonatal period every day in 2019, and neonates make up 33% of all child deaths annually (UN 2020). In 2019, the global neonatal mortality rate was estimated to be 17 deaths per 1,000 live births. The age distribution of mortality among children and youth shows that the risk of mortality is highest during the first 28 days of life, the neonatal period, before decreasing for older children and young adolescents (ages 5–14). Compared to the year 2000, in 2015 the under-5 mortality numbers decreased globally by about 4 million.

In the neonatal period (0-27 days), major threats to health are preterm complications (7.556 per 1000 live births), pneumonia (6.594 per 10,000

livebirths) and intrapartum-related events (4.934 per 1000 live births). The ten countries with the highest under-5 mortality rates in 2015 were all in sub-Saharan Africa (Liu et al. 2016). Nearly half (49%) of all under-five deaths in 2019 occurred in just five countries: Nigeria, India, Pakistan, the Democratic Republic of the Congo and Ethiopia. Nigeria and India alone account for almost a third of neonatal deaths (UN 2020).

Stillbirths have reduced more slowly than maternal or child mortality. According to recent figures, almost 2 million babies are stillborn every year (UN-IGME 2020). In the past, reliable data on stillbirths were not available from regions where most stillbirths were estimated to take place (Cousens et al. 2011). In the study by Cousens et al. (2011) only 33 countries met the inclusion criteria for data reliability. In the estimates of 2015 and trends from 2000, data from 157 countries was included (Blencowe et al. 2016; Lawn et al. 2016). Data revealed that about 2.7 million stillbirths occurred in 2015. Compared to data from 2000, this was a 19% reduction. The burden of stillbirths falls disproportionately on women and families from low- and- middle income countries, where an estimated 98% of all stillbirths worldwide occurred (Blencowe et al. 2016; Lawn et al. 2016).

The Millennium Development Goals (MDGs) ended in 2015, however the reduction of maternal and newborn mortality and morbidity remains an unfinished agenda. This is reflected in the Sustainable Development Goals (SDGs) (UN 2015) and in the revised UN Secretary General's Global Strategy for Women's, Children's and Adolescents' Health (EWEC 2015). According to a recent study by Nove et al. (2020, p. 24) solutions to improve maternal and newborn health and to reduce stillbirths exist: investments into interventions delivered by midwives that reach universal coverage would "avert 67% of maternal deaths, 64% of neonatal deaths, and 65% of stillbirths, allowing 4.3 million lives to be saved annually by 2035".

At the time this dissertation was finalised, the negative impact of COVID-19 on maternal and newborn health was becoming visible. It seems likely that the indirect effects of the pandemic will minimise the gains made in recent years. According to estimates, COVID-19 related lockdowns and other measures

resulted in disruptions in supplies and services for sexual and reproductive health (Roberton et al. 2020). Even with a modest decline of 10% in coverage of pregnancy-related and newborn health care, an additional 1.7 million women who give birth and 2.6 million newborns would experience major complications but would not receive the care they need. This would result in an additional 28,000 maternal deaths and 168,000 newborn deaths (Riley et al. 2020). Recent data on the effects of the COVID-19 response on intrapartum care, stillbirth and neonatal mortality outcomes in Nepal show that “institutional childbirth reduced by more than half during lockdown, with increases in institutional stillbirth rate and neonatal mortality, and decreases in quality of care” (Ashish et al. 2020). These significant issues highlight the need to address maternal and newborn health services even more than before and focus on the best way to provide services, especially in LMICs.

In general, there are significant inequalities in maternal, newborn, and child deaths that depend on the income level of the country. The World Bank classifies countries into four categories according to their gross national income, that is, low- ($US1,025 USD or less), lower middle- ($1,026-4,035), upper middle- ($4,036-12,475) and high-income ($12,476 or more) (The World Bank 2016). Currently, there are 138 low- and middle-income countries (Annex 1). Of these 138 countries, 75 collectively account for more than 95% of the world’s maternal, newborn, and child deaths. However, these countries constitute only a minor share in the global reproductive, maternal, newborn, child and adolescent workforce including midwives (UNFPA 2014; UNICEF & World Health Organization 2015). As mentioned earlier, services delivered by midwives, however, are able to avert maternal and newborn deaths and stillbirths, highlighting the need to urgently tackle this workforce gap, especially in low- and middle-income countries (Nove et al. 2020).

Equity in access to maternal and newborn health services is an essential part in the post Millennium Development Goal agenda and is an issue, not only between countries with different economic resources, but also within countries. There is a significant difference between wealth quintiles of populations within countries with

regard to coverage with essential services. Based on data from Demographic Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), Barros et al. (2012) compared health indicators in the 54 countries with the highest burden of maternal and newborn mortality and morbidity. These 54 countries were mainly low- and middle-income countries with a few exceptions. Skilled attendance at birth, which is one of the major indicators globally in maternal health, was found to be the most inequitable. There was a range from 32.3% coverage in the 20% poorest quintile to 84.4% coverage in the 20% richest wealth quintile (a difference of 52.2% points). Skilled attendance at birth was followed by antenatal care visit coverage (four or more visits) in terms of inequities. This indicator ranged from 49.5% in the poorest quintile to 70.5% in the richest quintile (a difference of 34.6% points). The substantial inequities within countries can also be seen in terms of geography. Children from both the highest and lowest wealth quintiles living in urban areas have higher rates of survival compared to their rural counterparts (Dye 2008). Another example is from the 73 country assessments within the State of the World's Midwifery report (UNFPA 2014), where geographical access to skilled attendance at birth was higher in urban compared to rural areas.

Inequities between, and within, countries exist among all country categories, from low-and middle-income to high-income countries. One of the areas of inequity is in access to interventions – either not enough or too much. The phenomenon of "too-little-too-late", as articulated in The Lancet's Maternal Health Series (2016), is seen mostly in low-and middle-income countries, which carry the highest burden in maternal and newborn mortality and morbidity. But the same effect is also found in vulnerable groups within high-income countries. This phenomenon means that necessary interventions, such as referrals for management of prolonged labour to save the lives of women and newborns are not carried out (too little) and/or are not applied in a timely manner (too late) (Miller et al. 2016). One of the recommendations from The Lancet's Maternal Health Series suggests that a promising intervention in this regard are midwife-led units located close to a health facility, which will be described in detail later (Campbell et al. 2016a).

In contrast, the concept of “too-much-too-soon” is also prevalent. Historically, this phenomenon affected high-income countries, but is now also steadily rising elsewhere, mainly in middle-income, but also in low-income countries. This is often because of an increase in facility-based births which can be associated with unnecessary or harmful practices. One of these “too-much-too-soon” interventions are unnecessary caesarean sections (Miller et al. 2016). While caesarean section rates are still too low in low-income countries, in middle-income countries they have increased rapidly in recent decades and are currently higher in some middle-income countries compared to high-income countries (Boerma, Ronsmans, et al. 2018). Unnecessary caesarean sections can lead to short and long- term problems for the mother and baby and excess costs to the health system. The prevalence of maternal mortality and maternal morbidity is higher after caesarean section than after vaginal birth. An increased risk of uterine rupture, abnormal placentation, ectopic pregnancy, stillbirth and preterm birth is associated with caesarean section (Sandall et al. 2018). Approaches to reduce unnecessary caesarean sections such as labour companionship and midwife-led care have been associated with higher proportions of physiological births, safer outcomes and lower health-care costs relative to control groups without these interventions, and with positive maternal experiences (Betrán et al. 2018). Evidence for these interventions is, however, derived from high-income countries and midwife-led care is often not implemented widely in LMICs.

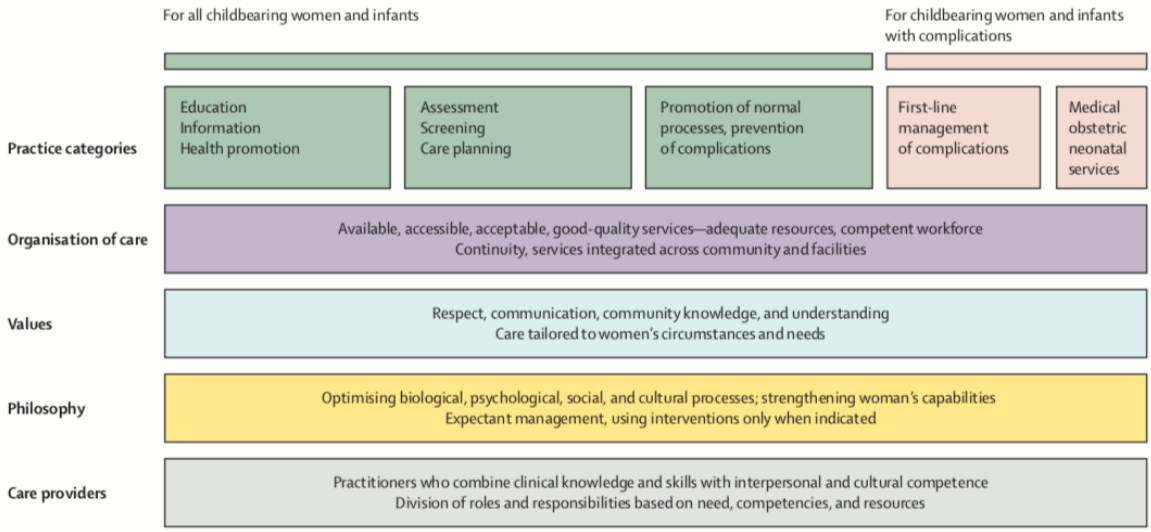
There is an urgent need for a global approach that supports effective and sustained implementation of respectful, evidence-based care across the continuum to address maternal and newborn mortality and morbidity (Miller et al. 2016). One of these strategies is the midwifery model of care, providing the motivation for this thesis.

1.2.2. CHANGING THE PERSPECTIVE - WHAT DO WOMEN AND NEWBORNS NEED?

Improved care during labour and birth is essential to prevent intrapartum stillbirths, end preventable maternal and neonatal deaths and improve child development (Lawn et al. 2016). Two interventions that receive considerable

attention to reduce global maternal and newborn mortality and morbidity are increasing facility-based and skilled attendance at birth. These are both focused on the provider side, without any considerations for the demand side (Briggs & Garner 2016). Demand-side means considering the perspective of the recipient or user of health care services, which can be an individual, a household or community (Ensor & Cooper 2004). Often, there is a focus on what the health system can provide or supply rather than what women and newborns need. In response to this deficit, The Lancet Series on Midwifery (Renfrew et al. 2014) placed the needs of women and newborns at the centre. The researchers carried out a series of three reviews including 13 meta-syntheses of women's views and experiences, 461 Cochrane reviews of practices and seven high-quality systematic reviews on the maternity workforce. The review showed that 56 outcomes were improved by provision of midwifery care. As a result, a framework for quality maternal and newborn care was developed (Renfrew et al. 2014) (Figure 1) and is now widely used, including in this thesis, as will be explained later.

Figure 1: The framework for Quality Maternal and Newborn Care (QMNC): Maternal and newborn health components of a health system needed by childbearing women and newborn infants (Renfrew et al. 2014)



The framework for quality maternal and newborn care has the care needed by women and newborns as its basis, rather than the care that health systems

provide. It also describes the philosophy, values, organisation of care and three different practice categories which together address quality care for all women and infants. Two practice categories, i.e. first-line management of complications and medical obstetric and neonatal services, meet the additional needs of women and infants who have or develop complications. The scope of midwifery (Figure 2) covers all but the last practice category. The Lancet Series on Midwifery showed that “midwifery is a vital solution to the challenges of providing high-quality maternal and newborn care for all women and newborn infants, in all countries” (Renfrew et al. 2014, p. 1).

The Lancet Series on Midwifery (2014) and subsequent analyses have shown that human resources, in particular, well-supported midwives who are educated to international standards, are key to ending preventable maternal and newborn deaths and to improving quality of care (Homer et al. 2014; Nove et al. 2020; Renfrew et al. 2014; UNFPA 2014; World Health Organization 2014b). It has been recognised that midwives can provide 87% of the essential services recommended by the World Health Organization (UNFPA 2014), with a minority of women and newborns requiring additional medical, obstetric and neonatal services (Renfrew et al. 2014). Finding ways to ensure women have access to midwife-led care in all countries is therefore important.

1.2.3. MIDWIFE-LED CARE

'Midwife-led care' is defined as care in which midwives are, "in partnership with the woman, the lead professional with responsibility for assessment of her needs, planning her care, referral to other professionals as appropriate, and for ensuring provision of maternity services" (Sandall et al. 2016). The International Confederation of Midwives (ICM) underlines the importance of midwives as the primary provider for midwifery care: “The midwife is the most appropriate care provider for pregnant and birthing women, mothers and their newborns and should therefore be their first contact with healthcare. The evidence-based benefit and absence of harm with midwife-led care supports the rationale that it is the most appropriate model of care for childbearing women” (ICM 2011, p. 2).

Figure 2: Scope of midwifery practice (ICM 2017, p. 1)

> The scope of practice of the midwife is described by the International Confederation of Midwives in the international definition of the midwife: "The midwife is recognised as a responsible and accountable professional who works in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant. This care includes preventative measures, the promotion of normal birth, the detection of complications in mother and child, the accessing of medical care or other appropriate assistance and the carrying out of emergency measures. The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. This work should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health and child care. A midwife may practise in any setting including the home, community, hospitals, clinics or health units"

Within midwife-led care, midwife-led continuity of care is a specific model of care which is defined as care in which the same midwife or a small number of midwives are the lead professionals for supporting women in the planning, organisation and delivery of care given to a woman from initial booking to the postnatal period (Sandall et al. 2016). In this model of care, midwives form a partnership with women and usually provide care for women who are healthy and have uncomplicated or 'low risk' pregnancies, births and post-partum periods and healthy newborns. In instances where complications occur or risk factors arise, midwives provide the first-line management of care and work together in partnership with other professionals providing medical, obstetric or neonatal services (Sandall et al. 2016). This relates to the scope of practice of midwives by the International Confederation of Midwives, which highlights midwives' ability to take care of women and newborns along the continuum, including the initiation of referral and emergency care. Midwives, according to the ICM definition, are

not confined to working in facilities and can provide care where women live (Figure 3)

The Cochrane Library review on midwife-led continuity of care was originally led by Hatem and found only 11 trials in high-income countries (Hatem et al. 2008). This initial review showed that midwife-led models of care led to fewer antenatal hospitalisations and instrumental vaginal births, decreased use of analgesia during labour, more spontaneous vaginal births, but had little or no effect on numbers of foetal and neonatal deaths, augmentation or induction of labour, caesarean sections, postpartum haemorrhage and foetal loss before 24 weeks of gestation. This review was updated by Sandall et al. three times (Sandall et al. 2013, 2015, 2016). Findings from the latest update (2016), which still only included studies from high income countries, showed that midwife-led continuity of care is an effective intervention for childbearing women. This model of care was associated with substantial benefits for mothers and their newborn infants, with no adverse effects identified compared with shared or medically led care in high-income countries. The latest update included 15 trials from high-income countries involving 17,674 women. The review concluded: “Midwife-led continuity of care confers important benefits and shows no adverse outcomes. However, due to the exclusion of women with significant maternal disease and substance abuse from some trials of women at mixed risk, caution should be exercised in applying the findings of this review to women with substantial medical or obstetric complications” (Sandall et al. 2016, p. 26). One of the areas for future research identified by the researchers of the Cochrane Review, however, is the lack of trials in resource-constrained countries, or LMICs, suggesting that additional trials and other studies should be undertaken in such settings.

There are many ways to organise the provision of midwife-led care, including midwife-led continuity of care, but the reports are mainly from high-income countries. Midwife-led care can be provided by small teams or as a caseload model, and takes place within a multidisciplinary network of consultation and referral with other care providers (Homer et al. 2019; ICM 2015). Midwife-led care can be provided at the women’s home, in the community or at any facility level. If

the midwife-led model of care is provided in a clinical location, this place is called a midwife-led unit. According to (Overgaard et al. 2011, p. 2), “in many countries, the introduction of midwifery units has given women more choice of place of birth. A midwifery unit is a clinical location offering care to women with straight-forward pregnancies during labour and birth in which midwives take primary professional responsibility for care.”

Midwife-led units can be based in a separate location from an obstetric-led unit or co-located alongside one. There is a debate on the effectiveness of stand-alone, midwife-led (freestanding) units versus alongside midwife-led units (Birthplace in England Collaborative et al. 2011; Hollowell et al. 2015; McCourt et al. 2014). Freestanding midwifery units provide labour and birth care led by midwives for women who are categorised as at low risk, or without known risk factors or co-morbidities. These services provide a distinct service, on a separate site from obstetric-led maternity units, such that if transfer is required, it would be by car or ambulance (Rowe et al. 2012). Evidence from free-standing midwifery units from Australia, New Zealand and England shows that women with low risk in pregnancy who gave birth in freestanding midwife-led units displayed significantly higher rates of spontaneous births and lower rates of caesarean section (Monk et al. 2014; Grigg, 2015; Walsh et al. 2020) and their newborns were less likely to be admitted for intensive or special nursing care (Monk et al. 2014).

The issue of transfer from freestanding midwife-led units to a secondary or tertiary hospital is often used as an argument against these units (Campbell et al. 2016b). However, studies that focused on maternal or neonatal outcomes of intrapartum transfer from primary to secondary or tertiary level of care showed that intrapartum transfer occurred in around 12.6% of the cases in a study conducted in New Zealand (Grigg et al. 2015), which was comparable to an earlier study conducted in Germany (David et al. 2006). The majority of the women (77.8%) in the New Zealand study were giving birth to their first child and the reason for transfer that was mentioned most often was ‘slow progress’. Most transfers (62.9%) were classified as ‘non-emergency’ (Grigg et al. 2015).

Midwifery units that are located on the same site as community hospitals or clinics without an obstetric unit are categorised as alongside midwifery units and also present occasions when transfer is required. Alongside midwifery units (AMU) provide labour and birth care led by midwives for women categorised as at low risk. They provide a distinct service but are closer to obstetric-led maternity units, most often within the same building (Rowe et al. 2012).

In low- and middle- income countries, alongside midwifery-led units to support normal birth and therefore reduce the use of unnecessary interventions could be a cost effective option (Campbell et al. 2016b). This model of care may also be a good choice for many women, as inter-facility emergency transfer is less time-consuming. This in turn reduces the risk of a delay and the bottleneck around initial access would be reduced (Campbell et al. 2016b). Despite the lack of evidence from LMICs in this area, it is clear that better access to midwives would have positive impacts.

A recent study estimated the impact of midwife-led care in LMICs and showed that a: “greater use of midwives by LMICs could substantially improve maternal and newborn survival because interventions that can be delivered in their entirety by midwives are projected to be able to save more lives than many other interventions” (Nove et al. 2020, p. 25). It was also recognised that there are substantial barriers that prevent midwives from working to their full potential and that the benefits are not always realised (Filby, McConville & Portela 2016; WHO 2016). The study called for greater investments in midwives, especially their education, training, regulation and working environment.

We have evidence that midwife-led care in LMICs could make a difference, however, there are few studies examining whether and how midwife-led care is implemented in low resource settings. This is, therefore, the focus of this thesis. The next section provides insights on my personal experience that influenced the development of this research project.

1.3. MY PERSONAL EXPERIENCE

This section is a reflection on my previous experience which led me to undertake this research project.

As a midwife, I have worked more in LMICs than in my country of birth, Germany. My initiation into midwifery in Germany, however, was based on a midwifery tradition that dates back more than 500 years, in which midwives in Germany became educated (the school of midwifery in my hometown Mainz was founded in 1476) and regulated (the midwifery regulation of Regensburg dates back to 1452) and midwifery started to be a profession. Midwifery in Germany was always separate from nursing but always was influenced, and often suppressed, by the medical profession.

Midwife-led care has existed for centuries in the tradition in which I was educated and trained. Though autonomy of midwifery in Germany is granted by a Midwifery Act and federal laws, midwives who work in hospitals work in maternity units led by obstetricians and gynaecologists and have to call at least an obstetrician-in-training, even for a normal birth. While most of the learning happens in this arrangement, midwifery students in Germany are also exposed to the midwife-led model of care during their education. In Germany, we have independent homebirth midwives who work alone or in teams, and also have over 100 independent birth centres throughout the country which are midwife-led. As few births (1-2%) take place in this model of care and women prefer to give birth in a hospital, there are a growing number of alongside midwife-led units co-located with hospitals. Currently, 20 of these alongside midwife-led units exist in Germany.

While I became a midwife, I was always interested in midwife-led continuity of care and when working as a midwife in Germany, I always worked as an independent, caseload midwife. Therefore, midwife-led continuity of care influenced my education and practice as a midwife. Beyond ‘knowing’ about the benefits based on findings from research, I experienced how both women and midwives were so much more satisfied when they received and provided care within a midwife-led continuity of care model (compared to obstetric-led care).

For most of my professional life, however, I worked in LMICs as an expert in development and within humanitarian settings. During this time, I learned how midwives work, how they are educated and regulated and how they are supported by their governments and societies. I learned that, especially in African countries, midwife-led care is the norm, due to the absence of medical doctors. Although the concept of midwife-led continuity of care exists at least in theory, it is often not supported by quality education, regulation and practice. An enabling environment is often absent. Midwifery and specifically the provision of midwife-led care is severely under-resourced in countries that have limited resources overall. This is something I have witnessed in Liberia, Sierra Leone, Guinea, Malawi, Lesotho, Rwanda, the Comoros, Trinidad and Tobago, Bangladesh, Cambodia, Myanmar and Thailand.

In some regions of the world, midwifery is a new profession and midwives are restricted from practising to their full scope due to the medical domination of the systems they work in. As well as not being able to expand the benefits of midwife-led care in low- and middle-income countries due to a lack of resources or severe barriers to practising autonomously, midwives are often not at the table when decisions are made around policies that concern their professional space. Midwives are often absent when it comes to resource allocation in national budgeting and in the development of guidelines and professional legislation.

Being a woman and midwife myself, global issues around discrimination of women and everything that is marked as “women’s business” in patriarchal societies becomes obvious. Midwifery is feminist work and therefore, I believe that fighting for (gender) equity is our duty. The right for every woman in this world to have access to a highly qualified and well supported midwife is my motivation for focusing on low- and middle-income countries, where the shortage of midwives and midwife-led care is highest but the burden on women and newborns’ health and wellbeing is the greatest.

In many LMICs, there are funding gaps around the implementation of midwife-led care. There is also a lack of funds for research to understand and learn how midwife-led care works in these settings and what barriers and facilitators are prevalent as well. Midwifery researchers from low- and middle-income countries

often lack research capacity. When I worked as an advisor for the United Nations Population Fund (UNFPA) to support governments in low-resource countries to develop their midwifery workforce, all I could see that there is a vast amount of evidence on the benefits of the midwife-led model of care. However, it was mainly based on research findings from high-income countries.

The question “why do you want to do a PhD” was asked by my supervisor Caroline Homer when I came up with my idea and request for supervision a couple of years ago. I answered in a similar way to my explanation above. My motivations for embarking on a journey a PhD mirrors those of many others: a gap in research becomes obvious and there is a strong desire to close it, at least a little bit.

While I tried to obtain funding for my research, I was awarded funds that covered only some of my tuition fees and the expenditure for data collection. I was not successful in gaining a scholarship that could cover my living expenses. I therefore needed to continue to work during the time of my studies. There were also benefits to continuing to work as it seemed easier to get access to the field having working relationships with official structures. This made me choose Bangladesh and Liberia, where I used or continued to work. Although I managed to obtain ethics approval from the Liberian National Research Ethics Board in November 2017, I was not able to return to the country to collect data as planned, as the project I worked on was stopped due to funding constraints and the security situation in the country made travel very difficult. This project therefore focuses only on Bangladesh. The benefit of focussing on one country, however, has helped to explore midwife-led care in one context in depth.

The next section describes the structure of this thesis chapter by chapter.

1.4. THESIS STRUCTURE

This section provides an overview of each chapter in the thesis.

CHAPTER 1: BACKGROUND

This first chapter has provided the introduction, research question and the background including the global perspective on maternal and newborn mortality and the QMNC framework. The end of the chapter has included the outline of my personal experience that provides a description of my personal journey that led me to this research topic.

CHAPTER 2: LITERATURE REVIEW 1: A SCOPING REVIEW

The second chapter presents a scoping review to answer the first sub-question on “what are the outcomes of the midwife-led model of care in low- and middle-income countries?”. There is limited evidence from the literature but there are likely to be benefits of this model of care in low resource settings. Outcomes such as maternal and newborn mortality and morbidity, women’s experiences and cost effectiveness are explored in this chapter.

CHAPTER 3: LITERATURE REVIEW 2: AN INTEGRATIVE REVIEW

Chapter 3 presents the integrative review of how, where and by whom midwife-led care was provided in low- and middle-income countries. The analysis showed that midwife-led care is provided in diverse ways in LMICs and that issues of education and regulation of midwives and having an enabling environment are important for successful implementation. Based on the analysis of this review, implications for further research in these settings are given.

This chapter was published in the journal *Midwifery* in 2020 (Michel-Schuldt et al. 2020). This chapter is provided in the form of a published article in its original form and includes a separate reference list. This reference list is an addition to the reference list at the end of the thesis. The published paper is included in the Appendices and is provided with the permission from the publisher.

CHAPTER 4: RESEARCH DESIGN AND METHODS

Chapter 4 provides a description of the research design applied and the methods used in this thesis. First, the conceptual framework of complex adaptive systems that underpins this research is described. A mixed method explanatory design was used which comprises two phases. For each phase, data collection strategies and data analysis methods are described in detail. As a basis for the first and second phase of this research, a detailed description of the setting in Bangladesh is provided. My position in this research is explained that helps to understand my role as a researcher, as a midwife and as an expert who has worked in low resource settings in the past. The issue of reflexivity is also addressed.

CHAPTER 5: HEALTH POLICY AND SYSTEMS ANALYSIS – MIDWIFERY- AND MIDWIFE-LED CARE IN BANGLADESH

Chapter 5 presents Phase 1 of the study, a health policy and systems analysis in relation to midwife-led care in Bangladesh. This analysis sets the scene for understanding how the midwife-led model of care has been provided in Bangladesh, a lower-middle-income country in South Asia. This analysis provides a description of the context that enables the implementation of the midwife-led model of care but also highlights some of the policy and systems barriers.

CHAPTER 6: CASE STUDY – THE PROVISION OF MIDWIFE-LED CARE IN BANGLADESH

In Chapter 6, findings from the qualitative case study are provided. This is Phase 2 of the study. The findings highlight that midwife-led care in Bangladesh is in a transitional process. This chapter describes the values and philosophy that underpin the model, provides a description of the midwives providing midwife-led care, explains how the model is organised and provides an insight into the provision of continuity of care for women and infants with and without complications. Midwife-led care in Bangladesh has established strong foundations but further support is needed, especially in scaling-up of the workforce but also through further development of competences and skills in order to provide care that is available, accessible, acceptable and of good quality.

CHAPTER 7: ENABLING THE PROVISION OF MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES

In Chapter 7, a summary of the purpose and a synthesis of the findings from the two literature reviews and the two phases of this research is provided. These findings will be discussed with the literature and are an overall result of this thesis.

CHAPTER 8: IMPLICATIONS AND CONCLUSIONS

Chapter 8 discusses the implications from the research around essential issues to successful implementation of midwife-led care in low-resource settings. The limitations of this study will be described and the conclusions, including implications for future research in this area, will be given. The conclusion to the thesis is included in Chapter 8.

1.5. CONCLUSION

Preventable maternal and newborn mortality and morbidity and stillbirths are still major issues globally and are especially challenging in low-and middle-income countries. The framework of quality maternal and newborn care is a lens through which models of care can be developed. One model of care that could address needs for health and wellbeing of all women and newborns and initiate special care for those with complications, is midwifery care. In particular, midwife-led care, whether organised in the form of continuity models of care, or geographically located as freestanding- or alongside units are suggested to be promising concepts for low- and middle-income countries as well, although the evidence is not clear. Therefore, this study will explore what the evidence is around midwife-led care in countries that face the majority of maternal and newborn deaths, including stillbirths. The next chapter presents evidence in the literature of outcomes of midwife-led care in low-and middle-income countries.

CHAPTER 2. LITERATURE REVIEW 1: OUTCOMES OF MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES

INTRODUCTION

Chapter 2 presents a scoping review of the literature which was conducted to inform the development of the study. The aim of this review was to systematically review the current evidence on midwifery care in low- and middle-income countries and to 'map' the evidence on outcomes of midwifery care in low-and middle-income countries. The review was first undertaken in 2016 and was updated in 2020. The method of how this initial scoping review was conducted is initially described. Findings from included studies are then presented. The findings section presents the studies by World Bank classification, starting from low to lower and higher middle-income countries. This leads to discussion of major common themes and finally concludes with implications for further research, which will inform the next steps for approaching the research question and to frame the study.

2.1. METHOD

A focused scoping review of the literature on the outcomes of implementation of midwife-led care in low- and middle-income countries was conducted. The research question of "How has midwife-led care been implemented in low- and middle-income countries?" was approached specifically using the first sub-question on "What are the outcomes of this model of care?".

The scoping review approach was used to 'map' relevant literature, to understand the breadth and depth of the field of study and to clarify working definitions and conceptual boundaries of the area of interest (Arksey & O'Malley 2005). It was undertaken to find gaps in the current existent literature (Arksey & O'Malley 2005; Davis, Drey & Gould 2009; Grant & Booth 2009; Levac, Colquhoun & O'Brien 2010).

2.1.1. SEARCH STRATEGY

Five electronic databases, Pubmed, CINAHL (Ebsco), ProQuest Health and Medicine and Google Scholar, were searched for peer-reviewed output published

between 2000 and 2016 and, in the updated search, from 2000 to July 2020. Two websites, the WHO Reproductive Health Library[1] and UNFPA[2] were searched for additional papers. Studies in the reference lists of relevant papers were followed up to assess whether they could be included.

Keyword searches included, but were not limited to, the following terms: midwife, midwives, midwifery, midwife-led, midwifery-led, AND low-income country, low-resource country, developing country, middle-income country, low-and middle-income country AND outcome.

The updated search using the same keywords was repeated in August 2020 in each database but with the publication range between January 2016 and July 2020. Details of the search strategy is in Appendix 2.

2.1.2. INCLUSION AND EXCLUSION CRITERIA

Publication languages other than English were included if the abstract was also available in English. Studies that examined outcomes of midwifery care provided by midwives in low-and middle-income countries were included, as was care around childbirth by nurse-midwives and auxiliary midwives. In studies where midwives did not provide the care, this was mentioned in the description of the findings. Primary and secondary research and conceptual pieces such as commentaries and editorials from peer-reviewed journals were included. These latter conceptual pieces were included to ensure that a wide net was cast and recognised that not all descriptions of midwife-led care in LMICs would be in the form of primary studies.

Studies from high-income countries were excluded, unless transferability of their findings to low- and middle-income countries was discussed and made explicit. Studies that reported on care led by medical doctors, nurses, community health

[1] https://extranet.who.int/rhl
[2] https://www.unfpa.org

workers and traditional birth attendants were excluded. Magazine and newspaper articles and non-research-based reports were excluded (Table 1).

Table 1: Inclusion and exclusion criteria of the scoping review

	Date of publication	Country	Language of publication	Type of care	Study design
Included	2000 - 2016	LMIC as defined by World Bank	English and other languages, when abstract was available in English	Midwifery care (provided by midwives, also care provided by nurse-midwives and auxiliary midwives based on the ISCO code (ILO 2012))	Primary and secondary research, conceptual pieces such as commentaries and editorials
Excluded	1999 or earlier	High-income countries defined by World Bank	No abstract in English	Care provided by medical doctors, nurses, community health workers as per the ISCO code (ILO 2012), traditional birth attendants	Conceptual pieces such as magazine and newspaper articles and reports

Initially, 717 articles and abstracts were identified through database searches (n=690) (Appendix 2) and reference lists (n=27) (Figure 3). Of these, 606 were excluded as the title did not meet the inclusion criteria of this research (n=602) and, for some, it was not possible to obtain further information in order to make an assessment (n=4). Abstracts of 111 publications were assessed while applying the eligibility criteria. Most (n=53) of the 58 articles excluded in this step did not meet the selection criteria, as they were publications from high-income countries and did not apply a relevant study design (n=5).

In the next step, 53 full text articles were screened, of which 34 were excluded by applying the inclusion and exclusion criteria. Most did not focus on outcomes of midwife-led models of care (n=30) or were duplicates (n=4). In instances where the studies looked only at one narrow aspect of the care provided by midwives, such as respectful care or neonatal resuscitation, the studies were included and described in the findings but discussed separately.

Ultimately, 19 papers were included. Originally, in the first search conducted in 2016, 10 papers were included. In the search conducted in July and August 2020, nine additional papers were revealed that were included. A table of these papers including name of country, World Bank classification, research methodology, sample or participants, aims and objectives, interventions, findings, and limitations of the study is provided in Appendix 3.

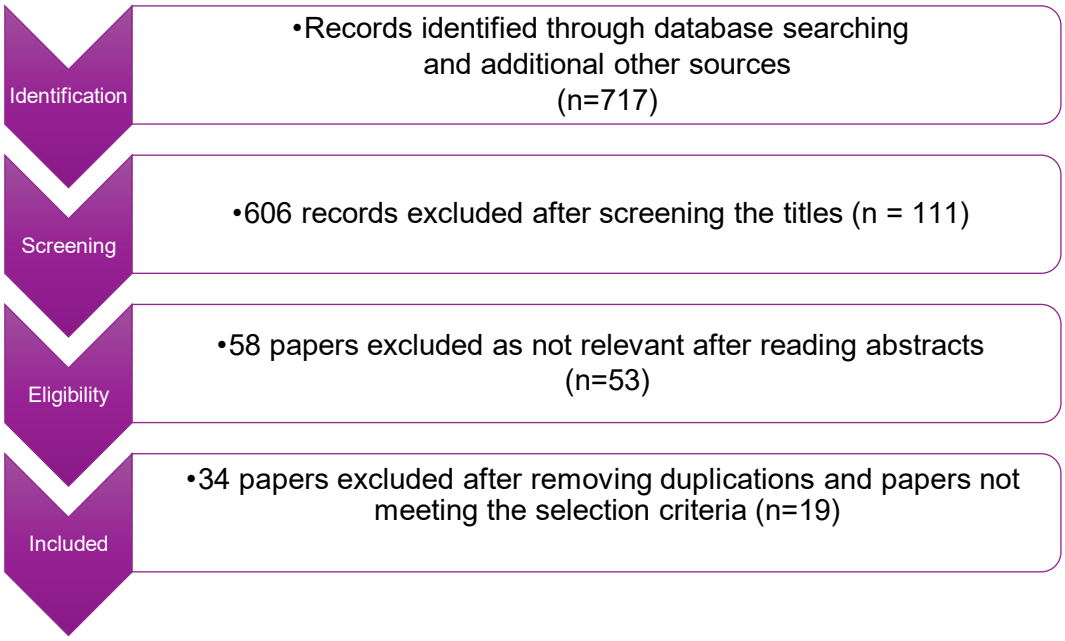
2.1.3. QUALITY ASSESSMENT AND SYNTHESIS OF DATA

In a scoping review, a formal quality assessment is usually not conducted (Grant & Booth 2009). Therefore, only major limitations of the study methods were included in the findings. Key outcomes and main results have been summarised in a narrative form. The reference management software Endnote X7 was used to organise and store the literature.

2.2. FINDINGS

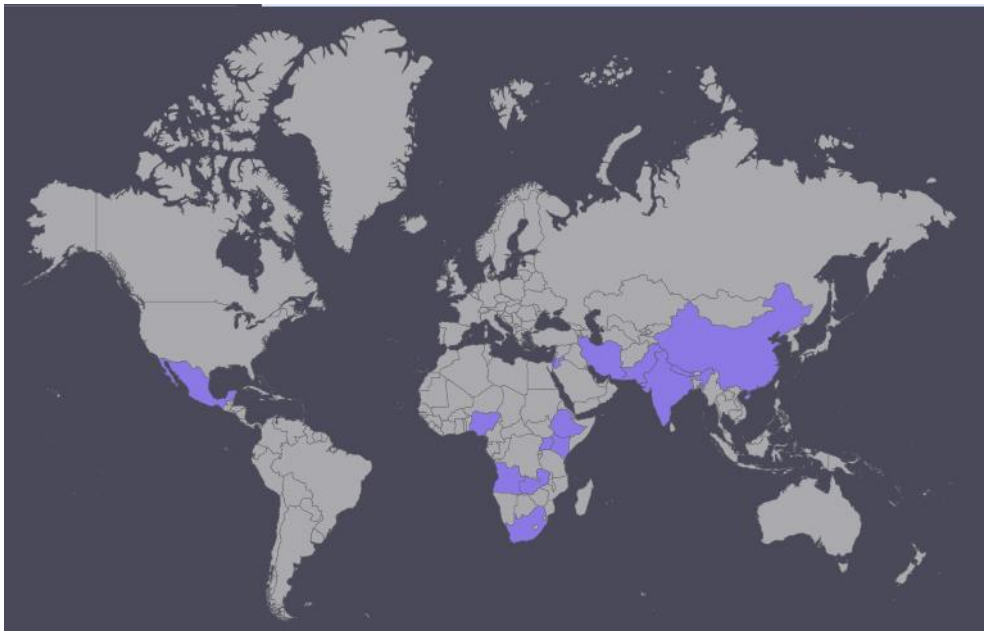
Overall, 19 studies were included in the review. These were from a range of countries. Figure 3 presents the PRISMA flow diagram explaining how the final papers were selected.

Figure 3: PRISMA Flow Diagram for the scoping review on the outcomes of midwife-led care in low- and middle-income countries



Only four of the studies were conducted in low-income countries, i.e. Nepal, Uganda, Angola and Ethiopia. The majority of studies (n=9) were conducted in lower middle-income countries, such as India, Pakistan, Palestine, Zambia, Kenya, Nigeria and Zimbabwe. Six studies were conducted in higher middle-income countries, namely China, Mexico, South Africa and Jordan. There were no studies from Francophone-African countries, while studies from Anglophone-African (n=7), Lusophone-African (n=1), Latin-American (n=1), Arab-States (n=4), Western, Central and South-East Asian countries (n=6) were scarce (Figure 4).

Figure 4: World map highlighting countries from included studies in the scoping review



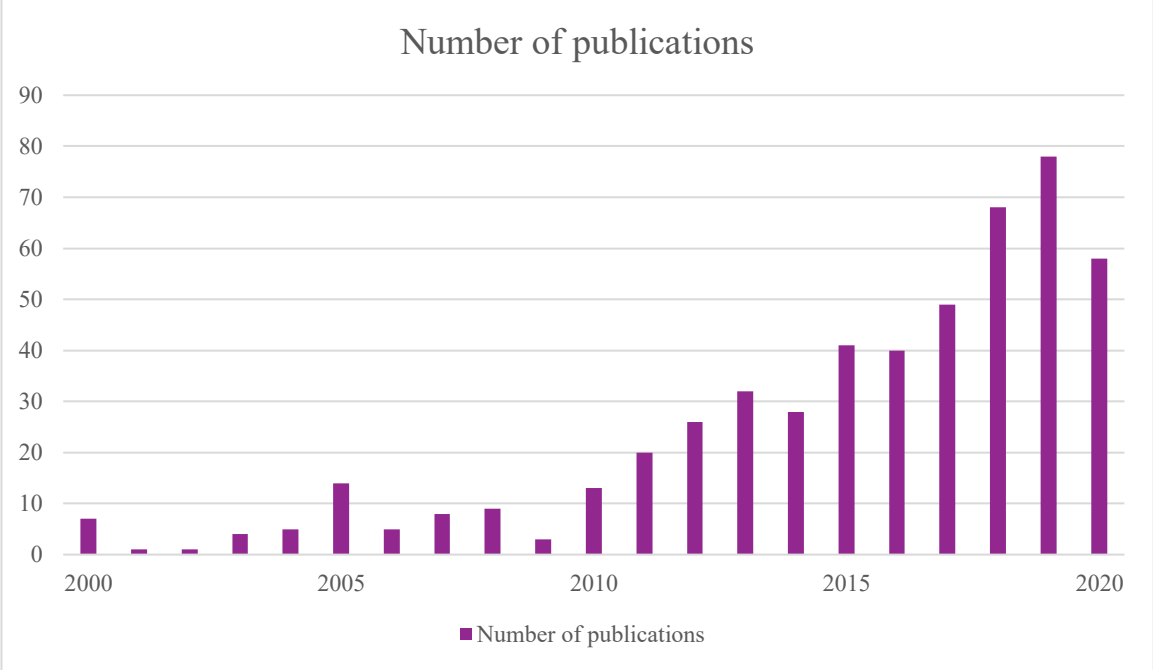
The level of evidence and the design of the studies varied. They included a commentary on a systematic review that was conducted in high-income countries (n=1), descriptive studies using qualitative approaches (n=5), a survey (n=1), a mixed-method study (n=1) and various studies with a quantitative approach, mostly observational studies (n=5), a cluster-randomised trial (n=1), two-group randomised controlled trials (RCT) (n=1), retrospective cohort (n=4) and a non-matched comparison (n=1) (Appendix 3). There were no systematic reviews of RCTs.

Some of the studies on midwifery care included cadres other than midwives (auxiliary midwives or nurse-midwives), as professional midwives had not been introduced in the respective countries during the period in which the study took place, e.g. Nepal and India.

There seems to be increased attention on midwife-led care in the last four years, especially in lower middle-income countries. In the first search conducted from 2000-2016, ten publications were included. In the updated search, the number of

publications conducted after 2016 until mid-2020 increased from 10 to 19, with nine additional papers. Figure 5 shows an increase in the number of publications that appeared in the initial key word search of Pubmed.

Figure 5: Number of publications retrieved from Pubmed from 2000 to mid-2020 using the search terms ((midwife or midwives or midwifery or midwife-led or midwifery-led) AND (low-income country or low-resource country or developing country or middle-income country or low-and middle-income country) AND (outcome OR outcomes)



A short summary following the order of presentation (from low, to lower-middle and upper-middle income countries) in the following sections and as an overview in table in the table below (Table 2).

Table 2: Overview of findings of midwife-led care in LMICs as per the World Bank classification

Researcher and year of publication	Country	Care provided by	Design	Outcomes
Low income countries				
Rana et al. 2003	Nepal	Auxiliary nurse-midwives supervised by nurses	Non-matched comparison	Midwifery care is cost-effective
Kaye 2000	Uganda	Health visitors, nurses, registered midwives and enrolled midwives	Cross-sectional descriptive	Midwifery care lacks quality
Pettersson et al. 2001	Angola	Mostly general nurses, few midwives	Descriptive design, lived-experience	Midwives have sense of professionalism, they work in difficult conditions but are connected to the communities and provide care where women are (at home, in the facility)
Sheferaw et al. 2017	Ethiopia	Midwives (compared to nurses, doctors, health officers)	Cross sectional study design (observational). Trained external observers assessed care provided to 240 women in 28 health centres and hospitals during labour and childbirth using structured observation checklists	Midwives were more likely to have higher total respectful maternity care (RMC) score compared to other providers (nurses, health officers and doctors)
Lower middle-income countries				
Iyengar & Iyengar 2009	India	Auxiliary nurse-midwives and general nurse-midwives	Descriptive	Access to skilled care improved, complications could be managed

Researcher and year of publication	Country	Care provided by	Design	Outcomes
Anwar et al. 2014	Pakistan	Midwives (12,15 and 18 months of training)	Qualitative descriptive exploratory approach	Women felt satisfied and empowered but marketing strategies need to be developed to increase access to midwife-led care
Mortensen et al. 2019	Palestine (West Bank and Gaza)	Midwives	Observational case-control design to compare the midwife-led continuity model of care with regular maternity care	There was an association between receiving midwife-led continuity of care and increased satisfaction with care through the continuum of pregnancy, intrapartum and postpartum period, and an increased duration of exclusive breastfeeding.
Mortensen et al. 2019	Palestine (West Bank and Gaza)	Midwives	Register-based, retrospective cohort design including 2201 singleton births between January 2016 and June 2017 at Nablus governmental hospital.	There was an association with several improved maternal and neonatal health outcomes: MLC included significantly less planned caesarean sections, fewer rate of post-partum anaemia, lower rates of preterm births, lower rates of admissions to neonatal intensive care unit and lower rates of newborn with birth weight 1500 g and less.
Mortensen et a. 2019	Palestine (West Bank and Gaza)	Midwives	Non-randomised intervention design was chosen. The study was based on registry data only available at cluster level, two years before (2011 and 2012) and two	The midwife-led continuity model improved use and some quality indicators of maternal services: increased number of ANC visits but decline in the control clinic (statistically

Researcher and year of publication	Country	Care provided by	Design	Outcomes
			years after (2014 and 2015) the intervention.	significant change), number of referrals significantly increased, home visits increased substantially
Mistry et al. 2018	Zambia	Midwives (compared with physician anaesthesiology residents and paediatric residents)	Observational study. Newborn skills and knowledge were examined using the following: (1) multiple-choice questions; (2) a ventilation skills test; and (3) 2 low–medium fidelity simulation scenarios	Though midwives lead the majority of births, they perform poorly on newborn resuscitation skills when compared to anaesthesia and paediatric residents
Onchonga et al. 2020	Kenya	Midwives	Qualitative interviews and thematic analysis of thirty-three women who had experienced high and severe fear of childbirth, and had completed midwife-led integrated pre-birth training were interviewed one month after giving birth.	Midwife-led integrated pre-birth training enhanced their expectations for birth processes. They demonstrated readiness and preparedness for this process, which could lead to improved childbirth outcomes.
Okeke et al. 2016	Nigeria	Midwives	Survey of 7,104 women with a birth within the preceding five years across 12 states in Nigeria and compared changes in birth outcomes	There was a 7.3-percentage point increase in antenatal care use in programme clinics and a 5-percentage point increase in overall use of antenatal care, both within the first year of the programme. There were no statistically significant effects of the scheme on skilled birth attendance or on maternal complications

Researcher and year of publication	Country	Care provided by	Design	Outcomes
Kanengoni et al. 2019	Zimbabwe	Midwives	Critical, qualitative research methodology, using in-depth interviews and two focus group discussions	Poor treatment in maternity care directly contribute to adverse health outcomes and women's satisfaction with services.
Upper middle-income countries				
Cheung et al. 2011a, 2011b	China	Midwives	Retrospective cohort and a questionnaire survey	Midwives practise to full scope of practice, midwifery-led care has potential to reduce obstetric interventions and increase women's satisfaction
Gu et al. 2013	China	Midwives compared to nurses and obstetricians	Two-group RCT	Midwife-led care increased vaginal birth rates and decreased caesarean section rates
Moudi et al. 2014	Iran	Midwives	Mixed-method research	Equity in access to services increased
Walker et al. 2013	Mexico	Midwives or obstetric nurses	Cluster-randomised trial	Improved care and higher coverage
Hofmeyr et al. 2014	South Africa	Midwives	Audit	Maternal and perinatal deaths reduced in onsite midwife-led units
Khriesat et al. 2017	Jordan	Midwives	Observational design	Lack of appropriate performance of eight effective basic newborn resuscitation skills at birth by midwives

2.2.1. MIDWIFE-LED CARE IN LOW-INCOME COUNTRIES

The four studies on midwife-led care in low-income countries are first described in this section.

The study conducted in Nepal used an unpaired comparison method that compared intrapartum care of a midwife-led model of care versus a consultant-led model of care (Rana et al. 2003). It showed that care provided by midwives was more cost-effective, especially because there were fewer interventions such as unnecessary caesarean sections: the care was less resource intensive, less costly and as safe and effective compared with physician-led care (Rana et al. 2003). However, although women in both groups were identified as “low risk”, the findings should be treated with caution as the study was not randomised. The study defined midwife-led care as care by auxiliary nurse-midwives supervised by a nurse with nine months of midwifery training who worked at the site of the data collection as midwives.

The second study reported on maternal and newborn health outcomes associated with midwifery care in Uganda (Kaye 2000). In this cross-sectional descriptive study, 36 of the 76 ‘midwives’ from different educational backgrounds (from health visitors, to nurses, registered midwives and enrolled midwives) were interviewed about their educational backgrounds and their uptake of in-service training. Health care providers were then observed during ante- and intrapartum care. Women’s satisfaction was also assessed in four focus group discussions. The main finding was that midwives could not recall symptoms, sign or causes of pregnancy complications related to the two most common causes of maternal mortality indicating poor quality of care. Women reported that the staff were rude and harsh. Midwives blamed women for presenting after complications had already occurred and demanded women pay user fees. Overall, this study lacks rigour as the sample size was small, the method of data analysis was not reported and the findings are not reported systematically. While the authors stated that the study findings could be applied to many units, it is not clear if the findings are transferable to other settings and to care provided by midwives only.

The third study in this group focused on the experience of midwives working in midwifery-led units (MLU) in Angola. The researchers interviewed 11 ‘midwives’, with most being general nurses with a basic knowledge of maternity care and a few being professionally educated midwives (Pettersson, Svensson & Christensson 2001). All were recruited from three maternity units which were part of a programme of the Angolan Ministry of Health to improve maternal health and reduce the high maternal mortality rate in the country. The priorities of this programme were the establishment of suburban-based midwifery-led maternity units and the empowerment of midwives as autonomous professionals through their education. These MLUs were equipped with essential medicines and staffed with midwives to provide 24 hour/7 days a week services, with access to communication and transport systems for referrals. The midwives received incentives of around $US30 per month per midwife. In this model of care, midwives saw themselves as independent, but recognised their limitations. The use of the partograph and continuous professional learning was also seen as important. Midwives regarded themselves as trusted among the population through a feeling of “togetherness” but they also mentioned problems with transfer to the next facility with obstetric care.

The final study in this group was conducted in Ethiopia by Sheferaw et al. (2017) and looked at the provision of care by midwives and others in public health facilities in terms of quality with a focus on respectful care. Midwives, nurses, doctors and health officers were observed while caring for 240 women in 28 health centres during labour and childbirth. Physical abuse, verbal abuse, absence of privacy during examination and abandonment were measured. Compared to doctors, nurses and medical officers, midwives provided higher levels of respectful maternity care, although reasons for their better performance are unclear. As the study examined one important aspect of midwife-led care (respectful care), it will be jointly discussed with similar studies later.

2.2.2. MIDWIFE-LED CARE IN LOWER MIDDLE-INCOME COUNTRIES

Two studies on midwife-led care were conducted in lower middle-income countries up to 2016. In the repeated search, seven additional studies appeared.

This means that most studies were conducted after the initial search, suggesting strong interest in the topic in lower middle-income countries in the last four years.

The earliest study was carried out in rural Rajasthan, India (Iyengar & Iyengar 2009). This was a descriptive study in two health centres which had introduced an intervention in which auxiliary nurse-midwives and general nurse-midwives were trained by gynaecologists in emergency obstetric and neonatal care. Antenatal care (ANC) was based on the World Health Organization (2002) guidelines, and care during labour was based on internationally accepted guidelines (World Health Organization 2003). The study took place from 2000-2008 and included 2771 women who presented in labour. During the time of the intervention, the number of women coming to the two health centres to give birth steadily increased. In 2007, nurse-midwives and auxiliary midwives were able to consult medical doctors 24 hours a day via mobile phone. The findings showed that educated nurse-midwives can significantly improve access to skilled maternal and neonatal care in rural areas of India. They also showed that if the health professionals were trained, life-threatening maternal complications could be managed. The authors highlighted the importance of further research on the impact of midwife-led care in countries like India (Iyengar & Iyengar 2009).

The second study took place in Pakistan. This used a qualitative descriptive exploratory design (Anwar et al. 2014). A purposive sample of women who had received midwife-led care by a midwife who had been enrolled in either a 12, 15 or 18-month midwifery education programme were included. Semi-structured interviews were conducted between April and June 2012. The results showed that women felt satisfied and empowered as a result of midwife-led care. However, the authors mentioned that women were often not aware of this new model of care and that marketing strategies needed to be implemented.

Three studies were then conducted in Palestine (West Bank and Gaza) and published in 2018 and 2019. All of them looked at midwife-led continuity of care. The first study examined whether the midwife-led continuity model can improve maternal services in a low- resource setting (Mortensen et al. 2018). In their non-randomised intervention design study, 14 intervention clinics and 25 control

clinics in two Palestinian regions were included. The outcomes showed that midwife-led continuity of care improved some quality indicators of maternal services: there were an increased number of ANC visits (a statistically significant change) and the number of referrals significantly increased in the midwife-led model of care as did home visits. The limitation of the study was its design, which relied on aggregated registry data.

The second study by the same team looked at a midwife-led continuity model of care that had been implemented in the Palestinian governmental health system to improve maternal services in several rural areas (Mortensen, Diep, et al. 2019). This study investigated whether the model influenced women's satisfaction with care, during the antenatal, intrapartum and postnatal periods (Mortensen, Diep, et al. 2019). Using an observational case-control design, the midwife-led continuity model of care was compared to regular care. The authors concluded that there was an association between receiving midwife-led continuity of care and increased satisfaction with care along the continuum of pregnancy, intrapartum and postpartum period, and exclusive breastfeeding increased in duration. The limitation of the study was its observational, retrospective design, comparing groups with potential unmeasured confounders because randomisation was not an option.

The third study, conducted by the same research team in Palestine (Mortensen, Lieng, et al. 2019), used a different research design. It applied a register-based, retrospective cohort design, involving 2201 singleton births between January 2016 and June 2017 at Nablus governmental hospital. The aim was to analyse the relationship between the midwife-led model of care (MLC) and maternal and neonatal health outcomes. MLC showed significantly lower rates of planned caesarean-sections, postpartum anaemia, rates of preterm births, rates of admissions to neonatal intensive care unit and of newborns with birthweight of 1500 g and less. The study is not randomised, making it open to bias. In their conclusion, the authors highlight that the improvements in maternal and newborn morbidity from the midwife-led model of care may contribute to improved quality of life and to reduced hospital and social costs. The authors provided advice on

potential cost-effectiveness if midwife-led continuity of care in Palestine could be studied in more detail in relation to this aspect.

The next study was conducted in Zambia and looked at the performance in newborn resuscitation of three groups of health care professionals, namely anaesthesiologists, paediatricians, and midwives (Mistry et al. 2018). Newborn resuscitation is only one aspect of midwife-led care, but it is clearly an important component. The observational study used multiple-choice questions, a ventilation skills test and two low-medium fidelity simulation scenarios. The findings revealed that midwives, while leading the majority of births, performed poorly on newborn resuscitation skills when compared to anaesthetic and paediatric residents. The observational study design is again open to observer bias. In general, the study only looked at one aspect of specialised care and it is not possible to generalise the poor-quality care more widely. However, the findings imply there is a need to provide education and training for midwives to improve their skills in newborn resuscitation.

In Kenya, researchers explored how a midwife-led integrated pre-birth training impacts on the fear of childbirth. Care during pregnancy provided by midwives within the continuum of care and will be discussed separately. In the qualitative study, interviews and an applied thematic analysis was used (Onchonga et al. 2020). Thirty-three women who had a high and severe fear of childbirth, and had completed midwife-led integrated pre-birth training were interviewed one month after giving birth. The majority of the women (85%) stated that midwife-led integrated pre-birth training helped them to become confident and feel ready for the upcoming births.

The next paper, a study by Okeke et al. (2016), looked at the effects of the Midwives Service Scheme (MSS), a public sector programme in Nigeria, that increased the supply of skilled midwives in rural communities on pregnancy and birth outcomes. Key features of the MSS included the recruitment and deployment of newly qualified, unemployed and retired midwives to rural primary healthcare centres (PHCs) to ensure improved access to skilled care. The PHCs received sufficient supplies and the midwives provided care along the continuum.

Surveys were conducted with over 7000 women who gave birth in the last five years across 12 Nigerian states and compared communities which were included in the MSS scheme with communities that were not. The major impact of the MSS was an increase of antenatal services, especially in the beginning of the programme implementation. Other important maternal and newborn health indicators however, such as skilled attendance and birth and complications during childbirth did not change. The authors conclude that the scaling-up of midwives to provide midwife-led care alone is not sufficient to improve maternal and newborn health and wellbeing and other measures such as the provision of an enabling environment are necessary to improve quality of care.

Women's experience of disrespect and abuse in a low-resource setting in Zimbabwe was also examined in relation to midwife-led care (Kanengoni, Andajani-Sutjahjo & Holroyd 2019). A qualitative research methodology was used with in-depth interviews and focus group discussions with 20 women who were assessed at various stages of their access to maternal health services. Several factors such as midwives' subjective perceptions, women's social status and health system constraints (such as availability of competent midwives and the quality of midwifery education) result in inappropriate services, negative attitudes, abusive treatment and disrespectful behaviour towards women. The study concluded that interventions which could tackle this inacceptable behaviour needed to address various layers: the relationship between women and midwives and the support midwives receive in their health care facility and from the health care system, again, highlighting the importance of an enabling environment. In a similar way to the Nigerian study, this study shows that just having midwives present is not enough to provide quality, woman-centred midwife-led continuity of care.

2.2.3. MIDWIFE-LED CARE IN UPPER MIDDLE-INCOME COUNTRIES

Six of the 19 studies in this review were conducted in upper middle-income countries. For example, in China, midwife-led care was introduced in 2008 by the establishment of a midwife-led normal-birth unit. This innovative onsite midwife-led unit was studied using an action research project with a retrospective cohort

study and a survey (Cheung et al. 2011a, 2011b). The first 226 women accessing the midwife-led unit were matched with a cohort of 226 women accessing standard care from March to September 2008. A survey measured women's satisfaction with the care they received. Clinical outcomes in the first six months after implementation demonstrated that midwife-led units had higher rates of vaginal births compared to the standard care unit, with fewer obstetrical interventions. There was a high level of satisfaction among women who received care by midwives who worked to their full scope of practice. Women reported that the care they received in the midwife-led units offered them choice and control over several aspects of their births. The main limitation is the use of a retrospective control group, which limits the transferability of findings to other settings in China and other low-income countries.

Another study in China investigated midwife-led antenatal care with primiparous women using a randomised controlled trial (RCT) in a specialised teaching hospital in Shanghai, China (Gu et al. 2013a). In this study, 55 women were randomly assigned to the intervention group and 55 women to the control group. The findings showed a decrease in caesarean section rates and increase in the rates of vaginal births compared to the control group, who received antenatal care by obstetricians and obstetrical nurses. Antenatal care provided by midwives was perceived as being more satisfactory by women. The study showed that midwife-led care, either in the antenatal or the intrapartum period, had a positive impact on intervention rates during labour and increased women's satisfaction with the care they received in similar settings in China. However, the study was underpowered for examining its primary outcome of mode of birth (vaginal birth and caesarean section), with a sample size of only 110 women.

Another mixed-method study was carried out during a 10-year period in two standard-delivery-posts (SDPs) in Zahedan province in Iran which provided midwifery-led care (Moudi et al. 2014). The two MLUs were staffed by midwives who operated the standard-delivery-posts 24 hours per day, 7 days per week. In Phase 1, routinely collected data from 22,753 low risk women who gave birth in the two health care posts were analysed. Qualitative interviews were undertaken

in Phase 2. Findings showed that since the introduction of the model, the number of women who accessed the facility increased steadily. The findings showed that the midwifery-model of care met the needs of the local population. Women also preferred to give birth in standard-delivery-posts compared to a hospital, because of the lower costs of giving birth. The newly introduced standard-delivery-posts thus provided equitable services for vulnerable groups in the population. A limitation of the study was the availability of quantitative data such as individual wealth, previous pregnancies and other relevant variables.

Positive findings on the effectiveness of “non-physician-led” care by professional midwives or obstetric nurses are evident in a study conducted in rural clinics in Mexico (Walker et al. 2013). In this cluster randomised-controlled trial, 2250 pregnant women in 27 clinics in two states and 12 non-physician sites led by professional midwives and/or nurses were selected randomly. 15 clinics staffed with physicians served as control sites. The care women received in non-physician led clinics (professional midwives or obstetric nurses) had better birth outcomes, with a greater number of live births with healthy birth weights and higher numbers of ante- and postnatal visits compared to the control group. A limitation was that although the researchers tried to include professional midwives only, they needed to include obstetric nurses in the intervention clinics as well. Professional midwives were new in Mexico at the time of the study and were regarded with scepticism. The researchers invested time prior to the start of the study to sensitise health care officials and clinical staff around midwifery care. The study showed that this type of care led to higher coverage in antenatal, intrapartum and postpartum care. Based on the outcomes of the study, the federal government in Mexico increased its funding to deploy professional midwives and to open a second midwifery school.

Another evaluation study from an upper middle-income country, based in two primary care onsite midwife-led birth units in South Africa, showed that these units have great potential to improve quality maternal and newborn health care (Hofmeyr et al. 2014). Onsite midwife-led birth units were established on hospital grounds, staffed with midwives and administered and funded by primary care

services, rather than the hospital. The researchers audited this newly-introduced model of care as part of the primary health system in South Africa through routinely collected data with promising results in regards to maternal and perinatal deaths after the introduction of the onsite midwife-led unit. However, these results have to be viewed with caution, as this was an observational study. The authors concluded that onsite midwife-led birth units could be a cost-effective model to be included in secondary and tertiary hospitals in South Africa and potentially other countries with comparable income levels.

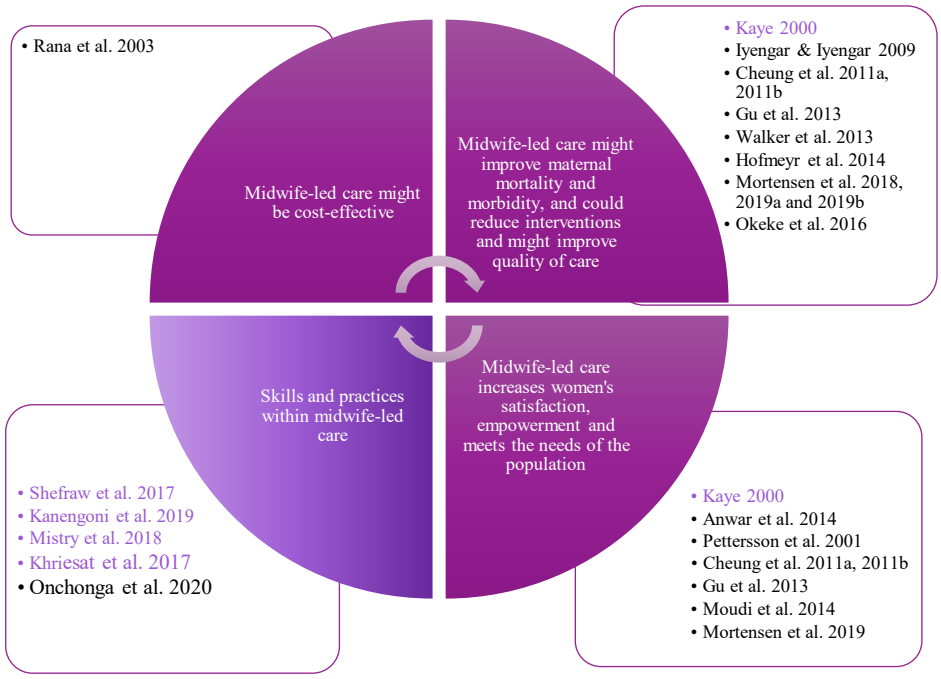
More recently, a study in Jordan used an observational design and examined resuscitation practices of midwives (Khriesat et al. 2017). This time, only skills of midwives were evaluated. The researchers used a structured checklist comprising 14 items relating to basic resuscitation skills. Most of the midwives performed poorly. Only 18% of the midwives could provide core competencies for observing the condition of the newborn after birth and only around 40% assessed skin colour, breathing pattern and crying. The authors conclude that midwives need to be supported by continuous professional education, including newborn resuscitation knowledge and skills. Again, only one aspect of midwife-led care was assessed and therefore it cannot be generalised to the care from midwives around the continuum.

2.3. DISCUSSION

The study revealed four thematic areas: midwife-led care improves maternal mortality and morbidity, reduces interventions and improves quality of care; midwife-led care is cost-effective; midwife-led care increases women's satisfaction, empowerment and meets the needs of the population; skills and practices within midwife-led care. Figure 6 provides an overview of the studies which have been included in the review, grouped in four thematic areas relating to the outcome of midwife-led care in low- and middle-income countries. Three major outcomes around midwife-led care in low- and middle-income arose from the scoping review: midwife-led care might be cost-effective; it could improve maternal mortality and morbidity, might reduce interventions and could improve quality of care; and it might increase women's satisfaction with care and meet the

needs of the population. One additional theme that looked specifically at skills and practices of midwife-led care was also included.

Figure 6: Overview of findings on outcomes of midwifery care in low- and middle-income countries (positive outcomes in black, negative outcomes in purple)



Globally, there is strong evidence on the positive effects of midwife-led care, although evidence is limited by context. The updated Cochrane review by Sandall et al. (2016) showed that midwife-led continuity of care leads to better outcomes in high-income countries, without adverse outcomes on the health and wellbeing of mother and newborn. Applying these findings to low-and middle-income countries was identified as a limitation in the 2016 review and in the original review from 2008. In response to the first Cochrane review on midwife-led care by Hatem et al. (2008), the two researchers from South Africa developed a support summary in which they pointed out the relevance and transferability of the review's findings for low- and middle-income countries (LMIC) (Wiysonge & Okwundu 2010). The authors summarised the evidence from the 2008 systematic review and added their own interpretation of the transferability of findings for low-

and middle-income countries in the areas of applicability, equity, economic considerations and monitoring and evaluation. This is included here, as it highlights some of the complexities with applying evidence from high-income countries to a LMIC context.

Evidence on the cost-effectiveness of midwifery care in low-and middle-income countries is lacking. Even though there has been an increase of studies in the last four years, cost-effectiveness has not been a focus of these studies. Only one study (Rana et al. 2003) examined cost-effectiveness and showed that care provided by auxiliary nurse-midwives was more cost-effective compared to care led by physicians. Similar findings have been shown in studies in high-income countries, such as the United Kingdom (Kenny et al. 2015) the United States (Attanasio, Alarid-Escudero & Kozhimannil 2020), Belgium (Isaline et al. 2019) Nova Scotia in Canada (Koto et al. 2019) and Australia (Scarf et al. 2016; Scarf et al. 2020), where midwife-led care has been found to be more cost-effective compared to consultant-led care. The study in Nepal (Rana et al. 2003) was included in an overview of studies from mainly high-income countries which concluded that scaling up resources for midwife-led care is a less expensive and more cost–effective way to reduce maternal mortality rates globally (Friedman, Liang & Banks 2015). None of the studies that were conducted in the last four years focused on cost-effectiveness, highlighting another research gap.

Studies on midwife-led care in low- and middle-income countries show positive outcomes in relation to maternal and newborn mortality and morbidity, reduced rates of interventions and improved quality of care (Figure 5). These findings have been highlighted in rigorous studies from high-income countries as well and are central justifications for further support and an extension of midwife-led models of care in health systems (Koto et al. 2019; Sandall et al. 2016; Wiegerinck et al. 2020). However, a study in this review by Kaye (2000) was associated with poor quality. The research, however, does not report how well the midwives were supported. A motivated midwifery workforce which is supported through quality education, regulation and effective human and other resource management might be able to provide better quality care (UNFPA 2014).

Another area in which midwife-led care showed a similar level of positive results in low-and middle-income countries is in meeting the satisfaction and contributing to the empowerment of women. Three studies reported the opposite, citing disrespectful behaviour and abuse from midwives negatively affecting women's satisfaction. Kaye (2000) does not describe the system in which these midwives were embedded, but an enabling environment that includes the support of continuous professional development seems to be important, allowing midwives to provide care that women want and in which they feel empowered (Pettersson, Svensson & Christensson 2001). Promising examples from recent research are the Palestinian (Mortensen, Diep, et al. 2019; Mortensen, Lieng, et al. 2019; Mortensen et al. 2018) and the Kenyan (Onchonga et al. 2020) studies which highlight that women-centred, midwife-led continuity of care has positive effects on women's satisfaction.

Midwife-led care usually includes all the interventions that make up the role and scope of practice of a midwife. However, a number of studies in this review looked at just one aspect, i.e. newborn resuscitation (Khriesat et al. 2017; Mistry et al. 2018) and respectful maternity care (Kanengoni, Andajani-Sutjahjo & Holroyd 2019; Sheferaw et al. 2017). Attention to newborn resuscitation skills within midwife-led models of care needs to be prioritised, as highlighted by the studies conducted in Zambia (Mistry et al. 2018) and Jordan (Khriesat et al. 2017). Quality midwifery care must include management of complexities and being able to competently manage neonatal resuscitation is an essential component of midwife-led care. The studies from Ethiopia (Sheferaw et al. 2017) and Zimbabwe (Kanengoni, Andajani-Sutjahjo & Holroyd 2019) emphasised the importance of respectful maternity care in the provision of midwife-led care. It is clear that disrespectful behaviour will impact on acceptability and accessibility of midwife-led care. Similar findings can also be found in midwife-led models of care in high-income countries which promote the development and implement policies that address disrespect and abuse (Malatji & Madiba 2020).

2.4. CONCLUSION

The research question of “How has midwife-led care been implemented in low-and middle-income countries?” was approached specifically using the first sub-question on “What are the outcomes of this model of care?” The 19 studies on midwife-led care in low-and middle-income countries included in the scoping review showed that this model of care has several positive outcomes: it has the potential to improve effectiveness and quality of care for the health and wellbeing of women and newborns and to enhance women’s satisfaction.

There is limited evidence on cost-effectiveness of midwife-led care in low-and middle-income countries. This review identified four different thematic areas. These were (1) midwife-led care might be cost-effective, (2) midwife-led care might improve maternal mortality and morbidity; it could reduce interventions and might improve quality of care but sometimes lacks quality, especially in specific areas, (3) midwifery care might increase women's satisfaction, empowerment and meets the needs of the population but can be also abusive towards women, and (4) some aspects within midwife-led care such as pre-birth interventions to reduce fear of childbirth seem promising, whereas others such as respectful maternity care and newborn resuscitation need further attention.

This scoping review has identified a number of key gaps in the literature, especially when considering midwife-led care in LMICs. This informed the development of the study. Therefore, after this scoping review on outcomes of midwife-led care, an integrative review was conducted to assess how midwife-led care is provided in low- and middle-income countries to further close the gap in research that has been identified.

CHAPTER 3. LITERATURE REVIEW 2: THE PROVISION OF MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES – AN INTEGRATIVE REVIEW

3.0. INTRODUCTION

This chapter is the second literature review conducted for this study. This chapter was published as a peer reviewed paper in the journal *Midwifery*. It is presented here in the form in which it was published. This means there is some duplication in the introduction and methods, which are also covered in other chapters.

3.1. CHAPTER PREFACE

Publication reference:

Michel-Schuldt, M., McFadden, A., Renfrew, M. and Homer, C., 2020. The provision of midwife-led care in low-and middle-income countries: An integrative review. Midwifery, 84, p.102659 DOI https://doi.org/10.1016/j.midw.2020.102659

This chapter presents an article in its original form, published in *Midwifery* volume 84. This article is provided, with permission, in its published form as Appendix 4.

ABSTRACT

Background: The provision of midwife-led care, the model of care in which midwives are the lead professionals for women and newborn infants across the continuum has been shown to be effective in improving outcomes for women and newborn infants, but predominantly based on research in high-income countries.

Objective: to explore how midwife-led care is provided in low- and middle-income countries. The specific question was to examine how, where and by whom has midwife-led care been provided in low-and-middle-income countries?

Design: An integrative literature review was undertaken and included studies using a range of methods.

Data sources: A systematic search was conducted in Pubmed, EMBASE (Ovid), Web of Science, Scopus, Google Scholar, The Cochrane Library and hand-searching of relevant journals and website of International Organisations and relevant grey-literature.

Review methods: After applying inclusion criteria, systematic sifting and quality assessment processes, data were extracted from relevant studies. The software program NVivo was used to initially extract the findings and results of the studies. Coded data from primary data sources were iteratively compared using patterns and themes as per the conceptual framework of the WHO on skilled health personnel providing care for childbearing women and newborn infants including an analysis of the competent provider, standards of practice and the enabling environment.

Findings: Of a total of 3324 articles retrieved, 31 studies were included. There were 18 qualitative, nine quantitative and four mixed method studies with different levels of quality from five of six global regions published between 1997 and 2017. In these studies, midwife-led care was not found to be a standardised model in low- and middle-income countries (LMIC) and there was limited evidence on the effectiveness of midwife-led care in these countries. Care provided across the continuum was however described in most studies. Standards of practice in education, regulation and training varied widely as did the enabling environment in which midwife-led care took place.

Conclusion and implication for practice and research: Midwife-led care is provided across low- and middle-income but lack of enabling factors limits the quality of care that midwives can provide. Further research about this model of care is needed to understand the ingredients of successful implementation, their effectiveness and sustainability.

3.2. INTRODUCTION

Addressing preventable maternal and newborn mortality and morbidity are major issues globally with low- and lower middle-income countries (LMICS) having the highest rates (Graham et al. 2016; UNFPA 2014; World Health Organization & UNICEF 2014). Each day, approximately 830 women die from preventable causes related to pregnancy and childbirth (Alkema et al. 2016). In addition, approximately 2.5 million newborn babies die each year (UN 2018) and a further 2.6 million are stillborn (Lawn et al. 2011). Most deaths are from LMICS which account for 95% of maternal and 90% of all child deaths globally (Boerma, Requejo, et al. 2018). These figures show the magnitude of the issue and

highlight the importance of finding solutions tailored to low- and middle-income countries.

Strategies to reduce maternal and newborn mortality and morbidity through encouraging facility-based births and skilled attendance at birth have only been partly successful and, in some contexts, are now showing adverse outcomes such as increases in interventions, such as, unnecessary caesarean sections (Joseph et al. 2016; Miller et al. 2016). One cost-effective option for maternal and newborn health care with the best outcomes and lowest rates of interventions is care provided by midwives (Miller et al. 2016). It has been shown that midwifery care is key to ending preventable maternal and newborn deaths and improving quality of care especially in LMICS (Homer et al. 2014; Renfrew et al. 2014; UNFPA 2014). Midwives educated to international standards can provide over 80% of the essential maternal and newborn services recommended by International Organizations (UNFPA 2014).

Midwife-led continuity of care is a specific model of midwifery care. Midwife-led continuity of care is defined as care in which midwives are the lead professionals to support women in the planning, organisation and delivery of care from the initial visit to the postnatal period (Sandall et al. 2016; Thomas & Paranjothy 2001). For Sandall et al. (2016, p. 7) the midwife-led continuity model of care includes: “continuity of care; monitoring the physical, psychological, spiritual and social well-being of the woman and family throughout the childbearing cycle; providing the woman with individualised education, counselling and antenatal care; attendance during labour, birth and the immediate postpartum period by a known midwife; ongoing support during the postnatal period; minimising unnecessary technological interventions; and identifying, referring and coordinating care for women who require obstetric or other specialist attention”. Midwife-led continuity of care can be provided at the women’s home, in the community or at facility level. Studies from high-income countries suggest that women and infants who receive midwife-led continuity of care are more satisfied and receive fewer interventions such as epidural analgesia, episiotomies or instrumental births and do not have higher rates of adverse outcomes, such as perinatal mortality, compared with other models of care (Sandall et al. 2016). The philosophy underpinning midwife-

led continuity of care is that it is woman-centred and promotes birth as a normal process (ICM 2011). When complications occur, midwives consult and refer, and work in partnership with other professionals providing medical, obstetrical or neonatal services to women and newborns (Sandall et al. 2016). For this review, the term midwife-led care is used as a variation of midwife-led continuity of care in which continuity of care might not be included. There are different examples of how midwife-led care can be organised, mainly described from high-income countries.

Midwife-led continuity of care has been shown to be effective at improving maternal and newborn outcomes in high-income countries (Sandall et al. 2016), but less evidence on effectiveness and implementation has been identified in LMICs (Campbell et al. 2016b; Wiysonge & Okwundu 2010). Therefore, the aim of this review was to explore whether and how midwife-led care is provided in low- and middle-income countries, especially as these carry a high burden of the global maternal and newborn mortality and morbidity rates. The specific review question was: by whom, how and where has midwife-led care been provided in low-and-middle-income countries?

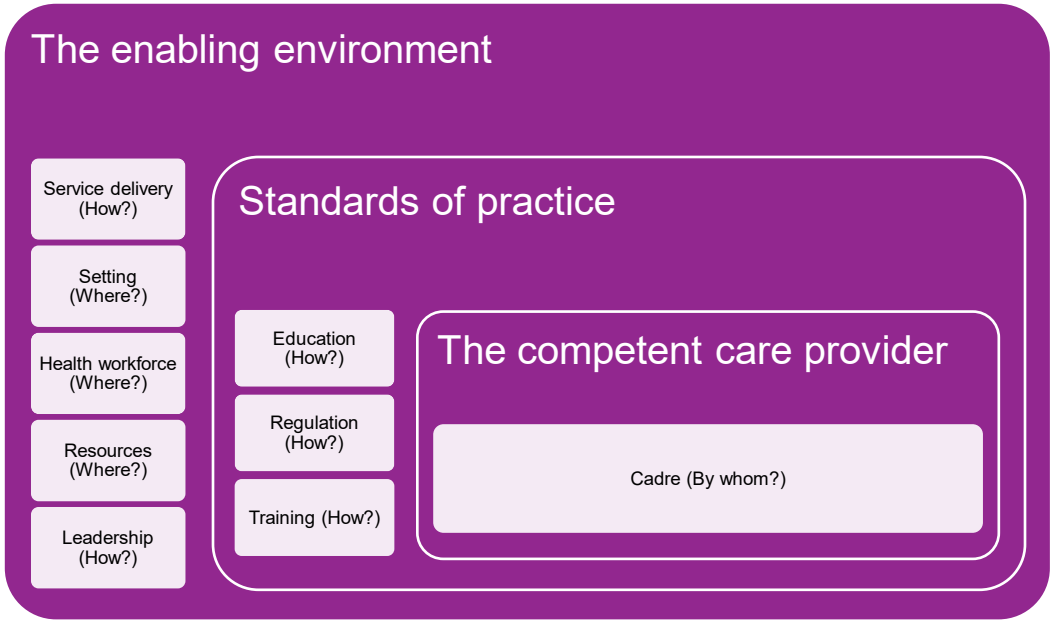
3.3. METHOD

An integrative literature review was undertaken (Grant & Booth 2009; Torraco 2005, p. 15). The method was based on an initial scoping review to examine the outcomes of midwife-led care in low- and middle-income countries. The scoping review showed that there was little level 1 evidence from randomised controlled trials and the evidence that was available was from a mix of methods including case study and qualitative studies. Therefore, a systematic integrative review was chosen for this more detailed review as it had the potential to provide a comprehensive understanding of midwife-led care and would enable the inclusion of diverse data sources to enhance a more holistic understanding (Whittemore & Knafl 2005). The review process followed a pre-specified protocol that was agreed to by all authors prior to commencement.

The framework of the competent health personnel providing care during childbirth was used and slightly adapted (financing and supplies such as medical products, vaccines and technologies from the original framework was combined into

resources and information was deleted) to guide the review (Figure 7). This framework was chosen, as its components correspond to the answer to “How, where and by whom has midwife-led care been provided in low-and-middle-income countries: the competent care provider, who holds identified competencies and forms a cadre is at the centre (by whom), who is embedded in standards of practice including education, regulation and training (how) and needs support from an enabling environment which included service delivery, setting, health workforce, resources and leadership (how and where) (WHO 2018) (Figure 7).

Figure 7: Adapted conceptual framework on the competent maternal newborn health professional (WHO 2018)



Eligibility criteria

Inclusion- and exclusion criteria were defined using the PICOS approach, that is, Population, Interventions, Comparators, Outcomes and Study designs (Table 3). Those described in the included papers as midwives or nurse-midwives were included as per the International Standards Classification of Occupations (ISCO) code, an international classification system for jobs defined according to the tasks and duties undertaken, as defined by the International Labour Organization (ILO 2012).

Table 3: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Participants	
Care provided by specific cadres such as midwives, also care provided by nurse-midwives based on the ISCO code (ILO 2012)	Care provided by specific cadres such as medical doctors, community health workers and auxiliary midwives and traditional birth attendants (TBA) as per the ISCO code (ILO 2012) only
Care provided in low- and middle-income countries as defined by the World Bank (The World Bank 2016)	Care provided in high-income countries defined by the World Bank (The World Bank 2016)
Intervention/Comparison	
Care where the midwife was the lead professional	Care which was provided by midwives assisting medical doctors
Care provided by a midwife alone or by small teams of midwives or inter-professional, or as a caseload model	Care provided by medical doctors, nurses or TBAs only
Care around the continuum: Ante-, peri-, and postnatal care, family planning	Post-abortion/abortion care, cancer screening only
At the women's home, in the community (primary) or at any facility level (primary and secondary)	n.a.
Outcome	
By whom: Care provider (cadre) How (and what): Respectful, culturally competent, women-centred, expectant management, interventions, optimising	

Inclusion criteria	Exclusion criteria
normal birth, competence, education, regulation and training Where: Facility, community, integrated services	
Study design	
Primary research	Secondary research conceptual pieces such as commentaries and editorials, systematic reviews
Studies published in English language or which had an English abstract	Studies published in other languages than English and did not have an English abstract
Any year of publication	none

Information sources

Searches were conducted in early 2018 by the first author using the following databases: Pubmed, EMBASE (Ovid), Web of Science, Scopus (first 100 hits), Google Scholar (first 100 hits), The Cochrane Library and hand-searching of relevant journals (Midwifery, Women and Birth, BMC Pregnancy and Childbirth) and grey literature such as the websites of WHO International, WHO regional offices, UNFPA International, UNFPA regional offices. Authors of the paper on "Clinical nursing and midwifery research: grey literature in African countries" (Sun et al. 2016) were contacted and asked for their data set on midwifery/maternal health who shared their sources. These primary sources were searched as well to see if they met the inclusion criteria.

Search strategy

Key words and study selection criteria followed the method of the York Centre for Reviews and Dissemination using a review question defined in terms of Population, Interventions, Comparators, Outcomes and Study designs (Centre for Reviews and Dissemination 2009). Keywords were derived from the in- and exclusion criteria described in Table 3. The review used a combination of search terms that were combined with Boolean operators. Searches were conducted

using the truncation midwi* AND care AND middle-income OR low-income OR developing AND nurse OR doctor OR TBA. An overview of keywords used and results can be found in Table 4.

Table 4: Databases search terms including results

Database	*Search terms*	*Hits*
Pubmed	((midwi* AND (low-income OR middle-income OR developing) AND (nurse OR doctor OR TBA) AND care)	1271
Embase	((midwi* AND (low-income OR middle-income OR developing) AND care AND (doctor OR nurse OR TBA))	1157
Web of science	((midwi* AND (low-income OR middle-income) AND care AND (doctor OR nurse OR TBA))	855
SCOPUS	(midwi* AND care AND (middle-income OR low-income OR developing) AND (nurse OR doctor OR TBA))	1098 (first 100)
Google Scholar	((low middle-income country developing country AND midwi* AND (nurse OR doctors OR TBA) AND care))	6270 (first 100)

Study selection

Figure 15 shows the process of screening and reviewing abstracts and full-text articles based on the eligibility criteria (Moher et al. 2007). After the initial screening, two authors screened the full-text articles based on the in- and exclusion criteria. Another screening round was added and full-text articles were screened by three authors prior to the quality assessment. In case of uncertainty, for example whether the professionals were midwives as per the ISCO code or if midwives were the lead providers of care, which was the case for "village midwives" in Indonesia and midwives in Tunisia, experts in the specific countries were contacted and their advice on midwives' scope of practice in the specific countries was sought. This led to the inclusion of the studies on village midwives in Indonesia as midwives in Indonesia are educated to international standards and have higher degrees. Based on the expert's advice, the study about midwives in rural Tunisia was excluded because midwives in rural Tunisia, always require a signature of the medical doctor in case of referral, diminishing midwives' autonomy in clinical decision-making. These midwives are not the lead carers and this paper was ultimately excluded from the review.

Quality assessment

As studies using different methodological approaches were included in the integrative review, a scoring system for mixed methods research and mixed methods reviews was applied for quality assessment using an approach developed by Pluye et al. (2009) (Table 5). This meant that a methodological quality by criterion was assessed for each study. A 'quality score' was calculated including the number of responded methodological quality criteria divided by the total number of items according to the type of study (qualitative n=6, quantitative n=3, and mixed method that comprises of three items plus the respective score for quantitative (n=3) and qualitative (n=6) studies) multiplied by 100 to calculate a percentage score. In the quality assessment, six studies did not pass the threshold of 50% and were excluded.

Table 5: Scoring system for mixed methods research and mixed studies reviews (Pluye et al. 2009)

Types of mixed methods study components or primary studies in a systematic mixed-method research context c)	Methodological quality criteria	Score
1. Qualitative	Qualitative objective or question	1/6
	Appropriate qualitative approach or design or method	1/6
	Description of the context	1/6
	Description of participants and justification of sampling	1/6
	Description of qualitative data collection and analysis	1/6
	Discussion of researchers' reflexivity	1/6
2. Quantitative experimental	Appropriate sequence generation and/or randomisation	1/3
	Allocation concealment and/or blinding	1/3
	Complete outcome data and/or low withdrawal/drop-out	1/3
3. Quantitative observational	Appropriate sampling and sample	1/3
	Justification of measurements (validity and standards)	1/3
	Control of confounding variables	1/3
4. Mixed methods	Justification of the mixed methods design	1/3
	Combination of qualitative and quantitative data collection-analysis techniques or procedures	1/3
	Integration of qualitative and quantitative data or results	1/3

	+ methodological quality criteria of quantitative (x/3). and qualitative studies (x/6) (see listed earlier in 1., 2. and 3.)	

Data extraction

Data were extracted from 31 studies (Supplement 1). For data extraction and analysis, NVivo was used to initially extract the findings and results of the respective studies. The results included numerical data from quantitative studies and textual material from qualitative studies.

Data analysis and presentation of results

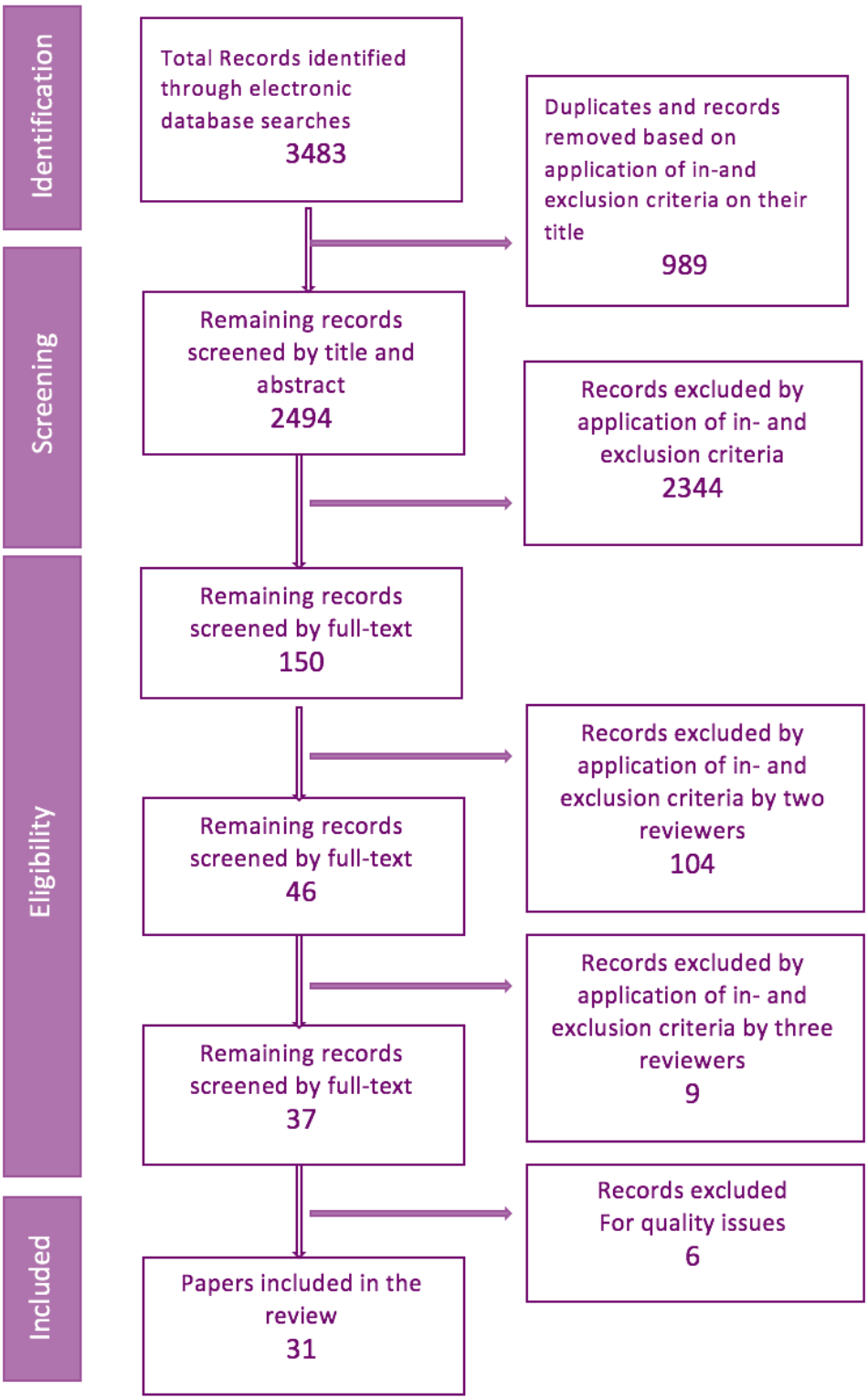
Coded data from primary data sources were iteratively compared (Whittemore & Knafl 2005) to identify patterns and themes according to the conceptual framework (WHO 2018). Following the analysis steps of Whittemore & Knafl (2005), data were reduced by extracting coded data. For quantitative research, these comprised descriptive findings based on numerical data. For qualitative research, there were descriptive findings which included quotes and summaries. For this purpose, a table was created and data were included by the first author according to the various parts of the framework (Figure 1).

In the conceptual framework, maternal and newborn health professionals who are competent providing intrapartum care are at the centre. These professionals need to be equipped with standards that include regulation, education and training. The enabling environment comprising six building blocks of the health system comprise of service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance to be able to provide effective, timely, continuous quality of (WHO 2018). This matrix supported the data display and led to the formation of subthemes. Each theme and sub-theme displayed in the matrix helped to compare data and identify common and unusual patterns. After the completion of each sub-group analysis, a synthesis of important elements was conducted. All these aspects formed the base to report data as per the framework (Figure 1). This led to the creation of a logical chain of evidence that provides the findings.

3.4. FINDINGS

Initially, 3483 titles and abstracts were identified. At this stage, 989 duplicates and records were removed based on the application of inclusion and exclusion criteria to their titles resulting in 2494 records. Of these, 2344 were excluded as the title and abstract did not meet the inclusion criteria and, for some, it was not possible to obtain further information required to make an assessment. Although a librarian was contacted for further support and efforts were made to contact the authors, four full-texts were not available and were therefore excluded. In total, 150 full texts were screened by two authors for details and inclusion and exclusion criteria were applied. After this, 104 publications were excluded. Full texts of 46 publications were assessed by three authors. In this step, nine studies were excluded as they did not meet the eligibility criteria. In total, 37 full-texts were assessed for quality by the first author. The main reasons for exclusion were due to reporting issues in the method sections (e.g. sampling technique, sample size and response rates not described, data analysis method missing, measurements not clear or not described). In several studies in the findings sections the response rates were missing, and in one study in the discussion section the limitations were not described. The process therefore resulted in 31 papers being included (Figure 8).

Figure 8: Flow of papers through the review



3.4.1. TYPE OF STUDIES, QUALITY ISSUES AND YEAR OF PUBLICATION

Of the 31 studies, over half (n=18; 58%) were qualitative studies including one phenomenological, 16 descriptive and one action research designs; nine were quantitative studies including six surveys, one cohort study, two randomised controlled trials; and four mixed method studies (n=4; 13%). The studies were published from 1997 to 2017. The majority (n=27; 87%) were published from 2000-2015 with a peak in 2012 (n=15; 48%). There were only three studies published since 2015. All studies were published in English.

Overall, the quality of the studies varied. The included studies had a mean quality assessment score of 82% (range 50%-100%). The main weakness in the qualitative studies or qualitative parts of mixed-method studies was that researchers did not disclose how the findings of their research relate to the researchers' influence, for example by describing the researchers' interaction with participants. In the quantitative research reports or in the quantitative section of mixed method research, authors often did not describe the response rate. The main issue in the mixed method studies was the absence of consideration given to the limitations associated with the integration of both research designs.

3.4.2. CHARACTERISTICS OF THE CARE PROVIDERS

Just over half of the studies (n=16; 52%) included only midwives. The others included other cadres such as nurse-midwives or other health professionals as well (Table 6).

Table 6: Summary of cohort

		No.
Type of provider (cadre)	Midwives	16
	Midwives and physicians including obstetricians	5
	Midwives and physician assistants	1
	Nurse-midwives	2
	Nurse-midwives and medical officers	1
	Midwives and nurses	1

	Midwives and nurses and physicians		3
	Midwives and TBAs		1
	Midwives and lady family planning visitors		1
Region	African Region (n=15)	Angola	1
		Benin	1
		Malawi	2
		Mozambique	1
		Nigeria	1
		South Africa	2
		Tanzania	3
		Uganda	2
		Senegal	1
		Zambia	1
	Eastern Mediterranean Region (n=4)	Afghanistan	1
		Iran	1
		Jordan	1
		Palestine [though the WHO does not include Palestine in any of their regions]	1
	South-East-Asia Region (n=5)	Bangladesh	1
		Indonesia	4
	Western Pacific Region (n=4)	Cambodia	1
		China	2
		Vietnam	1
	Region of the Americas Latin America & Caribbean (n=3)	Brazil	1
		Mexico	2
Setting	Geographical	Urban	5
		Rural and remote	6
		Not described	20

	Level of care	Primary (including homes of women)	6
		Secondary facility	2
		Tertiary facility	4
		Teaching/academic	2
		Referral hospitals	1
		Not described	16
	Public or private	Private	1
		Public	5
		Not described	25
	Organisation of care	One midwife	2
		Team of midwives	2
		Not described	27
	Place of unit	Alongside midwife-led unit	1
		Freestanding midwife-led unit	2
		Not described	28

3.4.3. THE PLACE AND SETTING IN WHICH MIDWIFE-LED CARE TOOK PLACE

The 31 studies originated from the five of six World Health Organization (WHO) regions (Table 6). Almost half (n=15; 49%) were from the African region, five were from South-East-Asia, four from the Eastern Mediterranean region, four from the Western Pacific region and three from the Americas region. Most of the studies originated from middle-income countries, with ten studies from upper-middle income countries, eight from lower-middle income countries, and 12 (39%) from low-income countries. Where reported, the setting in which midwife-led care was provided varied according to geographical location, level of care, public or private status, organisation of care and place in which the maternity unit of facility was located (Table 6). Some midwives were working on their own, especially in rural and remote areas (Adolphson, Axemo & Högberg 2016; Nyango et al. 2010) and some were working in teams, of at least two midwives (Blum, Sharmin & Ronsmans 2006; Pettersson, Svensson & Christensson 2001). Many studies did

not report any specifics in any of the settings in which the care was provided. Examples of this reporting gap are that 16 studies did not specify the level of care and 28 studies did not mention where the unit was located. Only two studies examined midwife-led units that were free-standing in Angola and Iran (Pettersson, Svensson & Christensson 2001; Tabatabaie, Moudi & Vedadhir 2012) and one examine an alongside unit based in hospital grounds in South Africa (Lester 2003).

The capacity to provide midwife-led care was impacted adversely by a number of issues related to the setting, especially workforce and financial issues. Midwives were often working alone, which was problematic for personal and professional safety and the ability to provide quality care (Ackers, Ioannou & Ackers-Johnson 2016; Hassan-Bitar & Narrainen 2011). In addition, a heavy workload caused by a shortage of workforce (Ith, Dawson & Homer 2012; Rouleau et al. 2012) and inequities between rural and urban areas (Ensor et al. 2008; Makowiecka et al. 2007) presented challenges to being able to provide quality care. Newly graduated midwives were sometimes sent to rural and remote areas which posed challenges in terms of isolation and an inability to learn from more experienced colleagues (Ensor et al. 2008; Makowiecka et al. 2007).

3.4.4. WAYS IN WHICH MIDWIFE-LED CARE WAS PROVIDED

The ways in which midwife-led care was provided varied across the studies. More than one-third of the studies (n=12; 39%) described midwife-led care provided across the continuum, that is, in the antenatal, intrapartum and postpartum periods (Adolphson, Axemo & Högberg 2016; Blum, Sharmin & Ronsmans 2006; D'Ambruoso et al. 2009; DeMaria et al. 2012; Ith et al. 2013; Kaye 2000; Nyango et al. 2010; Pettersson, Svensson & Christensson 2001; Shaban et al. 2012; Walker et al. 2013). In two studies, midwives provided only antenatal care (Agus & Horiuchi 2012; Gu et al. 2013b), in two studies only intrapartum care (Ackers, Ioannou & Ackers-Johnson 2016; Hassan-Bitar & Narrainen 2011), and in six studies only postnatal care (Ensor et al. 2008; Lester 2003; Lugina et al. 2001; Makowiecka et al. 2007; Maputle & Hiss 2010; Wu et al. 2011) indicating fragmentation of care. One study indicated that midwives provided both antenatal

and postpartum care (Graner et al. 2010). In five studies, the timing of the care was not specifically outlined (Bradley & McAuliffe 2009; Fujita et al. 2012; Lugina et al. 2002; Rouleau et al. 2012; Wood et al. 2013).

Apart from antenatal, intrapartum and postpartum care, other aspects of care were also described. In two studies, abortion-related care and HIV/AIDS treatment (Narchi 2011; Rolfe et al. 2008) were included. Care which disrupted continuity across the continuum was mentioned in four studies (D'Ambruoso et al. 2009; DeMaria et al. 2012; Gu et al. 2013b; Shaban et al. 2012), for example, pre- and postnatal care were not provided by the same midwife (D'Ambruoso et al. 2009). Two studies (Blum, Sharmin & Ronsmans 2006; Narchi 2011) described midwives providing care both during normal pregnancies, births and postpartum periods, and when complications occurred. Initiation of emergency obstetric and newborn care and referral by midwives themselves were mentioned in two studies (Nyango et al. 2010; Wu et al. 2011), but could also mean that midwives provided emergency obstetric and newborn care within a team of midwives and other healthcare providers (Hassan-Bitar & Narrainen 2011).

3.4.5. THE PREPARATION OF MIDWIVES TO PROVIDE MIDWIFE-LED CARE

Midwife-led care needs midwives who are suitably educated. There was however, significant variation across the studies in the type of pre-service education, entry levels into programmes, length of programmes, the qualification received by midwives and nurse-midwives and adequacy of preparation for practice (Table 7). Some midwives had labels like "primary" or "secondary" midwives (Cambodia) (Ith et al. 2013) or "professional" midwives (Angola) (Pettersson, Svensson & Christensson 2001) though it was not always clear how these differed and whether they were all able to provide midwife-led care equally using the same competency standards.

Although the current educational situation was not described in detail in most of the studies, the link between gaps in pre-service education and the provision of midwife-led care was obvious. For example, low quality in education was mentioned as a barrier to providing quality care (Shaban et al. 2012) and

ultimately, effective midwife-led care. A number of suggestions were made regarding of how to increase quality of care including extending the length of education (Shaban et al. 2012), improving the quality of clinical placements (Shaban et al. 2012) and bridging the evidence-practice gaps (Lugina et al. 2001).

Table 7: Overview of midwifery education to be able to provide midwife-led care

Item	Specifics	No. studies
Information on pre-service education provided	yes	21
	no	10
Entry level into midwifery education programme	12-years schooling	4
	7-9 years schooling	2
	Not described	25
Length of midwifery programme	1 year	3
	2 years	2
	3 years	2
	4 years	2
	Not described	22
Length and type of nurse-midwifery programme	3 years nursing, 1-year midwifery	4
	Midwifery integrated into nursing	2
	Midwifery added to nursing as apprenticeship	1
	Not described	24
Degree of educational programme	University degree	2
	Technical degree	1
	Not described	28
Education prepared midwives for practice	yes	3
	no	2

	Not described	26

3.4.6. THE REGULATORY FRAMEWORK IN WHICH MIDWIFE-LED CARE WAS PROVIDED

This review showed that professional regulation existed, that midwives were aware of the boundaries of their profession and could describe their scope of practice which included normal care and the initiation of care in emergencies and referral (Ackers, Ioannou & Ackers-Johnson 2016; Adolphson, Axemo & Högberg 2016; DeMaria et al. 2012; Graner et al. 2010; Pettersson, Svensson & Christensson 2001). Clinical guidelines existed which reflected the midwifery scope of practice and midwives followed protocols and called medical doctors for consultation and referral, for example, in cases where caesarean section seemed necessary (Ackers, Ioannou & Ackers-Johnson 2016) or when manual removal of placenta was indicated (Tabatabaie 2012). In one study, midwives exceeded their scope of practice often because they were not given a clear job description that outlined the boundaries (Bradley & McAuliffe 2009). For example, in Mozambique, regulatory bodies administered a scope of practice but midwives from rural areas providing midwife-led care described a wider margin of their practice resulting in the satisfaction of being able to provide care beyond their scope (Adolphson Axemo & Högberg 2016). Anxiety was expressed as well because the accepted professional boundaries were crossed (Adolphson, Axemo & Högberg 2016; Bradley & McAuliffe 2009). In Palestine, midwives were educated to suture women's episiotomies or perineal tears and conducted the procedure because they did not want women to wait for the doctor, though the Ministry of Health had decided that this was outside of midwives' scope of practice (Hassan-Bitar & Narrainen 2011). In some studies, midwives also reported that care during complications was out of their scope of practice again limiting their capacity to provide midwife-led care. For example, in one study from Cambodia, midwives did not help women with complications as they feared lawsuits due to a lack of legal protection (Ith et al. 2013).

3.4.7. STAYING COMPETENT TO PROVIDE SAFE AND EFFECTIVE MIDWIFE-LED CARE

Once midwives complete their initial education and are working within a regulatory framework, their competence needs to be maintained through continuous professional development (CPD) and supervision to be able to provide midwife-led care. Issues with regards to access to in-service training were mentioned in five studies (Blum, Sharmin & Ronsmans 2006; Pettersson, Svensson & Christensson 2001; Rolfe et al. 2008; Shaban et al. 2012; Wood et al. 2013). In-service education and CPD included training about normal labour and birth (Makowiecka et al. 2007), humanised care (Fujita et al. 2012), life-saving skills (Kaye 2000; Makowiecka et al. 2007; Nyango et al. 2010; Wrammert et al. 2017), perinatal education (Lester 2003) or non-specified training (Wu et al. 2011). However, one example from Cambodia showed that in-service training was not always valued by nurses, midwives and doctors and was seen to take midwives away from their duties (Ith et al. 2013). A study from Uganda showed that one quarter of the midwives had never received any in-service training (Kaye 2000) further limiting their ongoing competence to provide midwife-led care. Another study from Vietnam showed that CPD was non-existent due to under-resourcing (Graner et al. 2010). Midwives identified the importance of improving their knowledge and skills to feel confident in their ability to provide quality care (Narchi 2011; Pettersson, Svensson & Christensson 2001; Shaban et al. 2012) but a lack of resources was a barrier to CPD (Graner et al. 2010; Lugina et al. 2001). With regards to topics of CPD, life-saving skills were mentioned as a priority for in-service training (Kaye 2000; Nyango et al. 2010; Wrammert et al. 2017).

Supervision as part of CPD was seen as an important aspect to be able to provide quality care in seven studies (DeMaria et al. 2012; Graner et al. 2010; Lugina et al. 2002; Lugina et al. 2001; Makowiecka et al. 2007; Rolfe et al. 2008). Midwives mentioned the importance of providing supportive supervision “on the job” (Kaye 2000) and of evaluating the quality of their work rather than identification of gaps in the provision of their care and the exercise of punishment (Hassan-Bitar & Narrainen 2011)

3.4.8. LEADERSHIP AND POLICY ENGAGEMENT ENABLING MIDWIFE-LED CARE

Leadership is part of the essential building blocks of an enabling environment (WHO 2018). The involvement and/or influence of a midwifery association in past or current policy processes was not mentioned in any of the papers. Some studies recognised that invisibility of midwives in leadership or policy was a problem in the advancement of midwife-led care. For example, in Palestine, the establishment of an association of midwives was described as a strategy to increase the influence of midwives in health care policy (Hassan-Bitar & Narrainen 2011). Equally in Afghanistan, the role of the midwifery association in addressing retention issues was highlighted (Wood et al. 2013). Not all associations were seen as being able to support midwife-led care. For example, the Cambodian Midwives Association was felt not to be able to protect midwives if they faced a law suit (Ith, Dawson & Homer 2012).

Leadership is important for midwife-led care to be developed and sustained. In Tanzania and Angola, midwives oversee the clinic or ward (Lugina et al. 2002; Pettersson, Svensson & Christensson 2001). Few midwives reported support through their managers for example to organise midwife-led care (Graner et al. 2010) and to be able to provide respectful care (Fujita et al. 2012; Graner et al. 2010). However, two studies reported that midwives felt that their managers did not support them to provide midwife-led continuity of care (Lester 2003; Rolfe et al. 2008). The reasons given were that their managers supervised too many facilities and were not able to provide specific support to each of the midwives in the facilities (Blum, Sharmin & Ronsmans 2006), but were also not adequately skilled to carry out their managerial tasks (Bradley & McAuliffe 2009; Shaban et al. 2012) or sometimes midwives were humiliated by their managers (Hassan-Bitar & Narrainen 2011). In regards to midwives taking lead in policy development, the establishment of an association of midwives was mentioned which might increase the influence of midwives in health care policy in Palestine (Hassan-Bitar & Narrainen 2011). The importance of future involvement of the midwives' association especially in the area of retention of midwives in Afghanistan was highlighted as well (Wood et al. 2013). Similar to this, the future

role of the midwives' association in Tanzania as a franchise to increase access through the establishment of private midwifery practices was mentioned (Rolfe et al. 2008).

3.5. DISCUSSION

This integrative review provides an overview of how, where and by whom midwife-led care has been provided in LMICs. The use of the framework that provides an overview on the competent provider, professional standards (education, regulation, training) and the enabling environment (service delivery, setting, health workforce, resources and leadership) provided a systematic way to report the elements which contribute to the provision of midwife-led care.

It showed that midwife-led care in these studies is mostly provided by midwives and nurse-midwives, sometimes in collaboration with other health care providers. The studies described care provided in a variety of settings: urban and rural/remote, from primary to tertiary facilities, in private and public sectors, alone or in a midwifery team. The setting or model of care, such as in freestanding or alongside midwife-led units were only mentioned in three of the included studies showing that the aspect was not important for the researchers. However, the location of midwife-led units, either freestanding or alongside is discussed as an important issue in the wider literature especially in relation to time of referral not only in high-income countries (Shaw et al. 2016) but also in middle-income countries (Hofmeyr et al. 2014; Narchi 2011) and globally (Miller et al. 2016). These different aspects of implementation of midwife-led care are specific to each context and needs to be taken into consideration and should be reported in regards to implications for policy, practice and research (Kennedy et al. 2018).

There were few studies on midwife-led care in LMICs published since 2015. This could be related to the attention of the global community on this topic in the light of the Millennium Development Goals (MDG) which ended in 2015 and particular MDG 5 on maternal health and MDG 4 on newborn health (Gaffey, Das & Bhutta 2015; Smith & Shiffman 2016). Prior to 2015, global attention was given to these goals and particularly newborn health which received attention by donor funding between 2003 and 2013 which declined after 2013 (Pitt et al. 2017). So far, the movement on the Sustainable Development Goals and especially goal 3 which

followed the MDGs did not positively influence funding for research in the area yet. Another issue around the lack of high-level studies in general could be that midwife-led care is not named as such and that midwife-led care is provided by default, mainly because medical doctors are absent, and not by design.

The findings from this integrative review have implications for policy, practice and research especially in the light of the importance of educated, regulated and supported midwives being able to reduce maternal and newborn mortality and morbidity. In regards to policy, findings from this review show that midwives in the included studies are absent in the national dialogue but midwives suggest that they could be involved in the development of policies to improve the provision of midwife-led care. Clarification of the scope of midwifery practice in any country is important to ensure that the midwives are able to practice according to the regulations of the country. A high workload was also seen in some of the studies highlighting the importance of workforce policies that ensure that there is a sufficient number of midwives to staff the midwife-led units.

It is clear that midwifery education plays an important role in supporting quality midwife-led care. Emphasis should be given on quality through education, continuous professional education and training and supportive supervision (UNFPA 2014). A framework for action to strengthen midwifery education has been recently released that could guide low- and middle-income countries in a transformational education process leading to universal health coverage through an educated workforce providing midwife-led care (WHO 2019).

Similar to the high-level evidence of midwife-led care in high-income countries (Renfrew et al. 2014; Sandall et al. 2016), research on the provision of midwife-led care in LMICs included in this review shows some promising results but has also highlighted specific challenges. The aspects revealed in this review are that midwives felt competent to provide midwife-led care when standards of practice such as quality education, regulation, training and a supportive environment exist in which midwife-led models of care are able to thrive.

Although midwifery continuity of care was not explicitly mentioned in the studies included in this review, midwife-led care was often provided to the same groups of women during antenatal, intrapartum and postpartum period by midwives

working individually or in teams. It remains unclear if women received care by a known midwife throughout this continuum but it is possible. Fragmentation of care was mentioned by several studies highlighting a lack of continuity of care, similar to reports from high-income countries such as the United Kingdom (Sandall 2014), Japan (Iida, Horiuchi & Nagamori 2014), Australia (Homer 2016; Wong et al. 2015) and New Zealand (Wernham et al. 2016).

In some settings, midwives exceeded their scope of practice because medical support and referral mechanisms were absent. Policy makers and professional regulatory bodies should consider the importance of having a clearly defined scope of practice for midwives and of ensuring midwives are educated to fulfil this role and are supported in practice as it affects their practice and maternal and newborn outcomes (Filby, McConville & Portela 2016). In this review, the lack of midwives' presence in leadership and governance was highlighted which hindered midwives from being involved in policy development and management of midwife-led care. These findings are similar to previous research in which midwives reported a lack of voice and involvement in decision-making which could overcome existing hierarchies of power and gender norms (Brodie 2013; Filby, McConville & Portela 2016; WHO 2016). Solutions to overcome these barriers were mentioned in some studies included in this review and in the WHO (2016) report identifying midwife-led units and midwife-led models of care as good practice as well as strengthening of leadership for example through midwives associations. Empowered midwives who are part of the decision-making process on all levels may be more likely to be able to transform practice (WHO 2019).

Strengths and limitations

This is a novel review to analyse the provision of midwife-led in low- and middle-income countries using a systematic approach. It was not possible to undertake a meta-analysis or meta-synthesis as the studies were highly heterogeneous and the data was not amenable to such syntheses. The quality of the included studies varied affecting the overall quality of the evidence of this review. There was limited research as to the effectiveness of midwife-led care in these countries.

In many countries midwife-led care is the norm as there is an absence of medical doctors. Therefore, midwife-led continuity of care might not be seen as a model of care which should be evaluated or even named as such. This could have influenced the limited number of high-quality studies.

Although the review did not exclude studies in any language, if the abstract was available in English, all papers included in the review were published in English. This reflects the dominance of English in international scientific literature (Baussano et al. 2008) which might have excluded research from French-, Spanish-, Portuguese-, and Russian-speaking countries but could also indicate the absence of research or midwife-led care in general in non-English speaking countries. Generalisability and transferability of the findings is also limited, as included studies took place in a specific place of a country and does not represent the situation in the entire country.

Applying the conceptual framework on the competent MNH professional (WHO 2018) (Figure 1) could be seen as a strength, as it provided a systematic way to describe and analyse aspects of midwife-led care, variations of cadres that provide midwifery and the differences in their education, regulation and training. However, studies rarely reported all elements. Though studies did not report some of these elements, this does not indicate that they were absent in reality.

3.6. CONCLUSION

Midwife-led care is provided in low- to middle-income countries by midwives and nurse-midwives with differences in their standards or practice and diversity in its enabling environment. This review showed extensive variation in the implementation of midwife-led care and it's enabling factors and standards of practice across settings in low-and middle-income countries. Research on midwife-led care, especially in low- and middle-income countries and on the examination and implementation of models of care that enhance both, wellbeing and safety has been identified as a priority (Kennedy et al. 2018; Kennedy et al. 2016), and should therefore be supported in the future. Collaboration of research teams in a number of low-and middle-income countries is necessary using rigorous evaluation and implementation methods that would support the

generalisability of findings. Further research across a variety of settings in low- and middle-income countries is needed to build on the existing evidence, including implementation research, renewed commitment to research and the implementation of midwife-led care should be high on the global agenda and further research across a variety of settings in low-and middle-income countries is needed to build on the existing evidence. This will benefit women and newborn infants an in the light of Global Strategy for women's, children's and adolescence health that is aligned with the Sustainable Development Goals, will end preventable deaths, ensure health and wellbeing, and expand and enabling environment (United Nations 2015)

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CHAPTER 4. RESEARCH DESIGN AND METHODOLOGY

In this chapter, the research design and methodology are presented. First, the conceptual framework of complex adaptive systems which underlies the study design is described. The research aims and objectives are then provided. This leads into the description of the research methodology, which begins with an outline of Phase 1 of the study, a health policy and systems analysis of midwife-led care in Bangladesh. Findings from Phase 1 and the scoping review and the integrative review informed Phase 2 of this study. The methodology of Phase 2, the case study on midwife-led care in Bangladesh, is therefore shaped by the previous work. This is described in detail. The next section is a description of ethical considerations, followed by a section that describes the setting, Bangladesh, in which the research for Phase 1 and 2 took place. Table 8 provides and overview of this process. Chapter four ends with a reflection of my position in this research.

Table 8: Research questions, objectives and methods

<table>
<tr><th colspan="3">Research question</th></tr>
<tr><td colspan="3">Aim: Explore how midwife-led care is being implemented in low- and middle-income countries</td></tr>
<tr><td colspan="2">Objectives</td><td>Method</td></tr>
<tr><td rowspan="2">To systematically review the current evidence on midwifery care in low- and middle-income countries</td><td>To ‘map’ the evidence for outcomes of midwifery care in low- and middle-income countries</td><td>Scoping review
(Literature Review 1)</td></tr>
<tr><td>To assess how this model of care has been provided</td><td>Integrative review
(Literature Review 2)</td></tr>
</table>

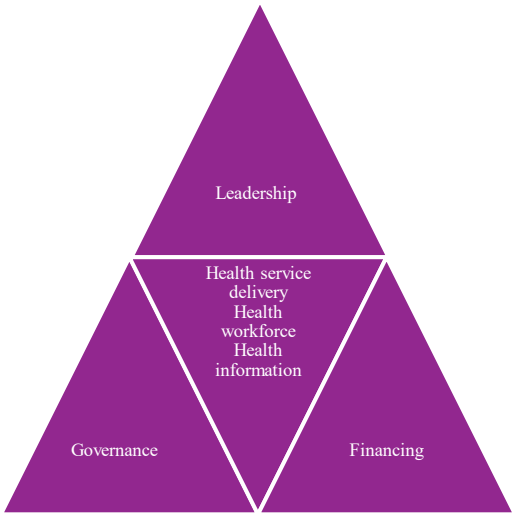
To assess the policies and health system efforts related to midwife-led care in a low- and middle-income country		Policies and health systems analysis **(Phase 1)**
To explore how midwifery care in a low- and middle-income countries was implemented		Case study **(Phase 2)**

4.1. CONCEPTUAL FRAMEWORK

Complex adaptive systems (CAS) based on systems thinking is the conceptual framework used for this research (Holden 2005). Complex adaptive systems are characterised as different agents acting in parallel (Sturmberg & Martin 2013). These agents constantly refer to, act and react of each other in a decentralised and highly dispersed manner (Sturmberg, O'Halloran & Martin 2010). In this way, complex adaptive systems are self-organised (Sturmberg, O'Halloran & Martin 2010). These different components emerge and relate to each other and cannot be reduced to the behaviour of a specific component. This interaction is constantly changing; it is dynamic and evolves constantly (Sturmberg & Martin 2013). The complex systems approach is a holistic perspective, assuming that the whole is greater than the sum of its parts (Byrne 1998).

The components of the CAS applied in this study are primarily those in the QMNC framework developed in the Lancet Series on Midwifery (Renfrew et al. 2014) and described in Chapter 1, as the components include service delivery, health workforce and health information. Elements of health system strengthening such as leadership, governance and financing, as described in Paper 3 of the Lancet Series on Midwifery (Van Lerberghe et al. 2014), will also be included as elements of the CAS. These elements or building blocks are ultimately connected through the interactions of people within this system (Figure 8).

Figure 8: Elements of the complex adaptive systems of midwifery care within a health system adapted from Renfrew et al. (2014); Van Lerberghe et al. (2014)



The conceptual framework of CAS (Holden 2005) has been used previously in midwifery research. For example, studies have described how actors connect in a system aiming at promoting the establishment of a midwifery profession in Nepal (Bogren et al. 2016) and Bangladesh (Bogren et al. 2015). The study from Bangladesh stated that that "CAS thinking can be used as a metaphor to understand how to adapt more emergent ways of working instead of the traditional planned approaches to change and develop in order to deal better with a more complex world. Through examining how actors connect for establishing a midwifery profession, offers insights of shared interests towards stepping up efforts for a competent midwifery profession in Bangladesh and elsewhere" (Bogren et al. 2015, p. 1).

As the study aimed to inform readers about how midwife-led care was implemented in low- and middle-income countries, the use of CAS to describe dynamic and unpredictable systems was useful in understanding effective pathways, especially in low- and middle- income countries (Paina & Peters 2012). Through the lens of CAS, the health system in Bangladesh was analysed through phenomena such as path dependence, feedback, scale-free networks, emergent

behaviour or phase transitions. These phenomena facilitate a description of “how” midwife-led care can be implemented at the country level.
The complex adaptive system approach formed the theoretical basis of the research methodology, leading to the application of a case study approach in the second phase of the research. Case-based methods blend into complex theories and are defined as “(1) the case is the focus of study, not the individual variables or attributes of which it is comprised; and (2) cases are treated as composites (profiles), comprised of an interdependent, interconnected set of variables, factors or attributes” (Castellani et al. 2015, p. 15). The link between cases and complex systems is described as: “cases are complex systems; complex systems are cases (Castellani et al. 2015, p. 17)

One of the key elements of complex adaptive systems is that they are open systems that can be understood by observing, as a participant, and appreciating interrelated relationships, rich interaction, feedback and behaviour among components (Ellis 2013). These elements are in line with the data collection techniques of the case study design I have chosen for my study.

In chapter 7 of this research, which draws together all findings from this research, the CAS approach was applied directly to synthesise the results.

In the following section, the aims and objectives of this research are linked to the methodology.

4.2. AIM

The aim of my study is to explore how midwife-led care is being implemented in low- and middle-income countries.

4.3. OBJECTIVES

The objectives are to systematically review the current evidence on midwife-led care in low- and middle-income countries (Review 1 and 2), to assess the policies and health system efforts related to midwife-led care in a low-and middle-income

country (Phase 1) and to explore how midwife-led care was implemented in a low- and middle-income country (Phase 2).

A mixed method explanatory design was used, comprising two phases prior to which two reviews of the literature were conducted. Phase 1 included a health care policy and health systems analysis of midwife-led care in Bangladesh. The findings from the two reviews and the policy analysis in Phase One have informed Phase 2, the empirical part of the study, in which a case study was conducted (Table 8).

4.4. PHASE 1: POLICIES AROUND THE PROVISION OF MIDWIFE-LED CARE IN BANGLADESH

4.4.1. DATA COLLECTION

Phase 1 includes a health care policy and health systems analysis in relation to midwife-led care in Bangladesh. Health policy and systems research is defined as way to understand and improve the way societies organise themselves in achieving collective health goals, how different actors interact in the policy and implementation process and how decisions, plans and actions are made which contribute to policy outcomes (Gilson 2012; World Health Organization 2018). This health policy and systems research looked retrospectively at policies that shaped the health system towards the implementation of midwife-led care in Bangladesh by using a framework that will be described in the analysis section.
For this health policy and systems analysis, a secondary data collection was undertaken, which is commonly done through document analysis. Documents were the sole source of data. As many and varied documents are produced during any one policy journey, a document analysis is able to provide significant insights into the what, how and why explorations of health policy and systems studies (Kayesa & Shung-King 2020). The documents used were mainly external documents, such as scientific literature, descriptive reports, demographic and health surveys, workforce reports, strategies, policies and legislation and international commitments.

A search was undertaken to identify the documents to be included. The search strategy was designed to be broad, in order to minimise the possibility of missing relevant documents and included all types of descriptive, explanatory and evaluation evidence. The search was conducted from 15th of May 2020 to 17th of July 2020. Google Scholar was systematically searched using the general terms “midwife-led care” OR “midwifery” AND “Bangladesh”. Relevant websites of organisations involved in midwifery and maternal health including UNFPA[3], World Health Organization[4], World Bank[5], UN Women[6], BRAC University[7], Save the Children[8], Bangladesh Midwifery Society[9]; and government websites such as Ministry of Health and Family Welfare[10], Directorate of Nursing and Midwifery Services[11] and the Bangladesh Nursing and Midwifery Council[12] were searched. Programme managers and government officials from Bangladesh and researchers conducting research on midwifery and maternal health were contacted and asked for background documents related to midwifery education, regulation and policy in the country.

Inclusion criteria: The search included publications in English, full articles or reports that were accessible and policies and research in Bangladesh with a focus on midwifery and maternal and newborn health

Exclusion criteria: In the search process, documents that were published in Bangla only, opinion papers and areas that were not relevant to policies and systems related to health and the areas mentioned above were excluded.

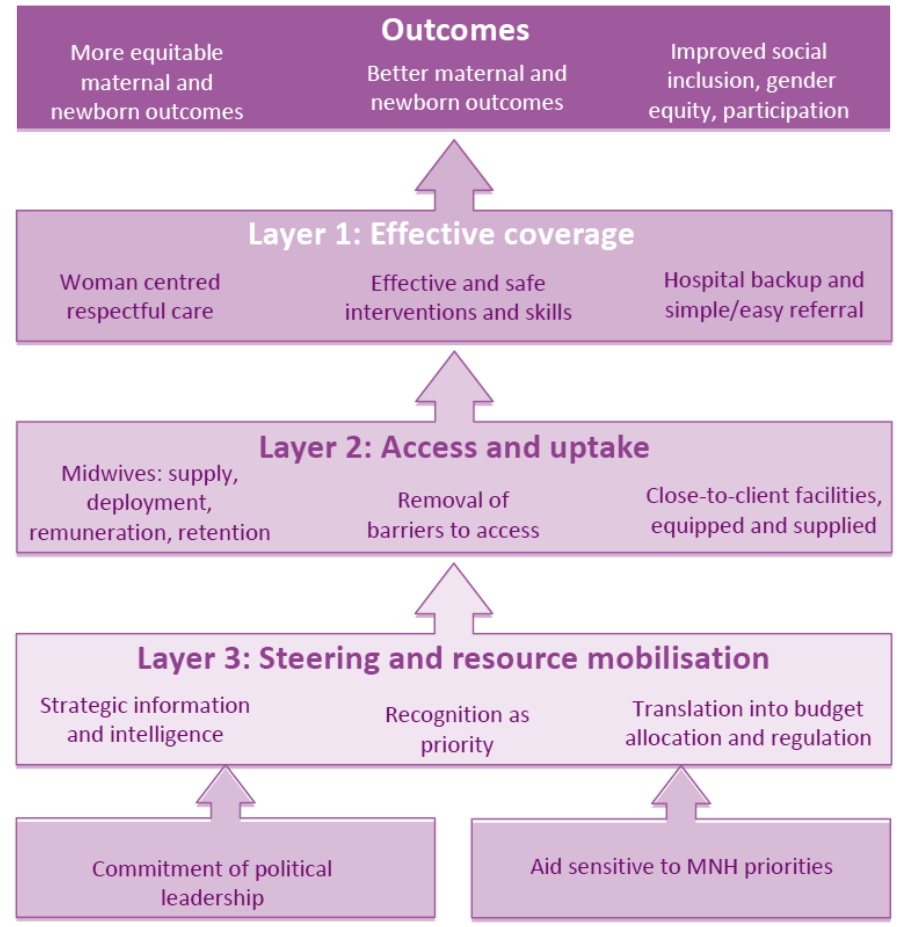
These inclusion- and exclusion criteria were applied to the search results.

[3] www.unfpa.org and https://bangladesh.unfpa.org/en
[4] https://www.who.int and https://www.who.int/bangladesh/
[5] https://www.worldbank.org and https://www.worldbank.org/en/country/bangladesh
[6] https://www.unwomen.org/en and https://asiapacific.unwomen.org/en/countries/bangladesh
[7] https://www.bracu.ac.bd
[8] https://www.savethechildren.net and https://bangladesh.savethechildren.net
[9] http://www.bmsbd.net
[10] http://www.mohfw.gov.bd
[11] http://dgnm.gov.bd
[12] http://www.bnmc.gov.bd

4.4.2. DATA ANALYSIS

First of all, all documents included were read thoroughly. Coding of data followed an inductive process and a framework analysis was applied. The framework of the health systems strengthening measures by Van Lerberghe et al. (2014) was used to analyse the data. Internal and external factors around the improvement of maternal health and well-being have been reported in Bangladesh before (El Arifeen et al. 2014). This meant that the structure of health systems measures aimed at improving maternal and newborn health was used to guide the analysis (Dahlgren & Whitehead 1991; Van Lerberghe et al. 2014) (Figure 9)

Figure 9: Structure of health systems strengthening measures aimed at improving maternal and newborn health (Dahlgren & Whitehead 1991; Van Lerberghe et al. 2014)



4.4.3. DATA SYNTHESIS

A narrative data synthesis was conducted. Data was mapped and clustered according to the framework provided by Van Lerberghe et al. (2014). Based on the structure as displayed in Figure 9, steering and resource mobilisation formed the beginning of the data synthesis, followed by access and uptake effective coverage and outcomes.

4.5. PHASE 2: THE IMPLEMENTATION OF MIDWIFE-LED CARE IN BANGLADESH

Phase 2 was designed to explore how midwife-led care has been implemented in Bangladesh. This addressed the objective to explore how midwifery care in a low- and middle-income countries was implemented.

A case study (Yin 2014) was conducted in Bangladesh, a country which has embarked on the introduction of midwife-led care in their context since 2009. Midwife-led units are being piloted in selected locations which should enable the innovation to be transferrable to other similar countries. Bangladesh has a high maternal mortality ratio of 170 maternal deaths per 100,000 live births (World Health Organization & UNICEF 2014). This country was also selected for logistical reasons, as I had access to this country through previous work and had existing relationships that enabled the research to be conducted.

4.5.1. RESEARCH DESIGN

A case study design was applied that used multiple sources of evidence to obtain a better and deeper understanding of research issues (Gillham 2000; Polit & Beck 2008). In case study design, phenomena are studied in their natural context (Shaw 2013). According to Polit and Beck (2008), case study research can be used if a phenomenon has not yet been rigorously researched. The combination of multiple sources can be used to increase generalisability of results and a combination of qualitative and quantitative research used together produce more complete knowledge necessary to inform theory and practice (Johnson & Onwuegbuzie 2004). If the findings from a case study allow, a hypothesis could be developed to be tested more rigorously in subsequent research (Polit & Beck 2008).

Polit and Beck (2008) stress that case studies are not associated with any particular discipline. Case studies in midwifery in low-income countries have been conducted on the independent midwifery sector in Tanzania (Rolfe et al. 2008)

and on determinants of utilisation of maternal care services after the reduction of user fees in Burkina Faso (De Allegri et al. 2011).

Case study research can explore a contemporary set of events, over which the investigator has little or no control and cannot manipulate behaviour (Rowley 2002; Yin 2014). In case study research, the boundaries between phenomenon and context are not clearly evident (Yin 2014), which makes the design suitable for the phenomenon of exploring midwife-led care in LMICs. Multiple qualitative data collection methods, such as interviews and focus group discussions, not only provide a more in-depth data set, but also allow the researcher to validate findings and thus increase the reliability of the findings (Yin 2014).

4.5.3. SAMPLE/PARTICIPANTS

In this case study, qualitative techniques were applied, including interviews and focus group discussions. A multi-stage purposeful sampling technique, widely used in qualitative research, was applied to recruit participants. Purposeful sampling is used to detect information-rich cases (Palinkas et al. 2015). Participants from each group are selected based on who would most benefit the study (Polit & Beck 2008). A purposeful sampling technique was appropriate for my study as groups or individuals who were especially knowledgeable about or experienced with the phenomenon of interest, that is, midwife-led care, were able to be identified and selected (Cresswell & Plano 2011). In this approach, the sampling initially commences broadly with an emphasis on variation or dispersion and follows an iterative process, becoming narrower with an emphasis on similarity (Palinkas et al. 2015). Such a strategy is thought to be necessary for the task of finding the optimal balance between internal and external validity (Lawrence et al. 2013).

In my study, the sampling technique started with the stakeholders involved in midwifery programmes or policy development in the country. These were also the key informants with whom I conducted the first interviews. They provided me with

valuable names of other partners or provided access to government officials or partner organisations. From these, it was possible to gain access to the field. The sampling therefore continued with key informants in the governmental and private sector involved in programme planning and implementation. This subsequently led into accessing care-provider and care-recipient groups in different kinds of facilities, also depending on accessibility.

Sample size depended on each method used and also on access to data: the number of participants for the qualitative interviews with the key informants were estimated to be around 12 (Guest, Bunce & Johnson 2006) and about two focus groups at two different sites of 6-9 clinical midwives and 6-9 service users (Krueger & Casey 2014). In this research, access to key informants was easy, as the interview partners recommended further people to be interviewed and key informants were eager to share their perspectives. Therefore, more than 12 interviews were conducted. The focus groups with service providers were conducted at three different sites and included 5-6 midwives. Additionally, interviews were conducted with midwives who worked on their own. Focus group discussions with service recipients were the most difficult and were conducted in two sites, mostly when women were waiting to receive care by the midwives in their clinical sites. Furthermore, interviews were also conducted with women who received midwife-led care at the clinical sites but also in their homes.

Overall, data collection continued until emerging themes or categories in the data become repetitive and redundant and data saturation was reached (Glaser & Strauss 1967; Polit & Beck 2008).

4.5.4. RECRUITMENT OF PARTICIPANTS

Access to participants in Bangladesh was established one month prior to the actual data collection period. A small advisory team comprising experts working for UNFPA, the Ministry of Health and BRAC University was established, as this research followed a single case study approach that involved units of analysis at

different levels. The embedded case study design (Yin 2014) looked at midwife-led care in Bangladesh in general, but included sub-units such as the private and the public sector. This advisory team provided support in the selection of the study sites that represented the diversity of midwife-led models of care in Bangladesh and contributed to the identification of the stakeholders interviewed. In turn, the stakeholders provided access to the study sites.

In total, four groups of participants were recruited. On the policy and programme level, the first group of participants to be interviewed were (1) key informants, such as policy makers, national and international programme managers and technical experts, professional organisations, health care educators and civil society organisations. These participants were identified to find out how decisions were taken in the establishment of the new model of midwife-led care, how it was implemented and the barriers and facilitators. On a clinical level, three groups of participants were recruited. Women seeking midwife-led care in midwife-led units (2) were the first group invited to participate in focus group discussions. These were women of reproductive age (15-44 years) who were currently pregnant or had given birth and received care in the midwife-led units within the last three months. The service providers working in the midwife-led units (3) were the second group for the focus group discussions. These were midwives under the ISCO code[13] (ILO 2012) who work in antenatal or postnatal wards or birthing units. In Bangladesh, these are certified (six-month post-basic nurse-midwives) or diploma (four-year direct entry) midwives. The last group of participants included were service providers who work in collaboration with midwives, such as nurses, auxiliary midwives and medical doctors classified according to the ISCO code (ILO 2012).

[13] The **International Standard Classification of Occupations** (**ISCO**) is an International Labour Organization (ILO) classification structure for organising information on labour and jobs. It is part of the international family of economic and social classifications of the United Nations.

4.5.5. PROCEDURE FOR DATA COLLECTION

Data collection was carried out through in-depth interviews and focus group discussions, all of which are typical data collection activities in case study design (Yin 2014). Data collection took place twice from 11 June 2018 to 18 August 2018 and from 5 November 2018 to 25 November 2018. During the first data collection period, private midwife-led units were visited. During the second data collection period, both private and public clinical sites were visited. This again followed the embedded case study design (Yin 2014) that included several subunits in the data collection process, as the midwife-led models and units should represent the diversity (private or public, urban or rural, stand-alone or free-standing, team or single midwife) within Bangladesh. In total, five study sites were selected that represented the diversity of midwife-led models of care in the countries.

An interpreter for Bangla, the language spoken in Bangladesh, to English was recruited for the first interviews and focus group discussions in the study. For the interviews and focus group discussions in the midwife-led centres outside that followed, the programme managers or coordinator of the midwife-led centre or the district public health nurse interpreted when necessary. All the interpreters had a health-related background and were familiar with issues around childbirth which made it easier for them to interpret (Pitchforth & van Teijlingen 2005).

When midwives worked on their own or women were visited in the post-partum period or during pregnancies, semi-structured interviews were conducted. When teams of midwives were available or women could be gathered as a group, focus group discussions were conducted. Aside from practical reasons, combining semi-structured interviews with focus group discussions supports the complementarity and richness of the findings, enhancing the understanding of the phenomenon (Lambert & Loiselle 2008).

Before, during and after the data collection period, field notes in the form of reflective notes that mixed methodologic notes and personal notes were taken. Some of these notes were shared with the supervisor and co-supervisor in emails or calls, sometimes on a daily basis during the actual data collection period. Here

is an example: “The midwife-led centres in Bangladesh have only recently been introduced in the country. The midwife-led centre located in an urban slum area has also just started to operate in January. A question was raised by the review panel if it is too early to conduct research in the centre. The head of the midwifery programme responded that for her this research is right in time as the findings from this research will help her to scale up midwife-led care. I feel that even though the midwife-led model of care was just introduced, the findings from this research might be able to benefit future adaptations to the programme”. Taking and reflecting on these notes enhanced reflexivity in this research process (Polit & Beck 2008).

SEMI-STRUCTURED INTERVIEWS

Semi-structured interviews collect the information required by allowing the participants to talk openly about their personal feelings, opinions and experiences (Polit & Beck 2008). The respondents were able to express these in their own words, which gave me the opportunity to gain insights into how the interviewees see the world (Milena, Dainora & Alin 2008). Participants were considered to be experts and as a researcher, I took on the role of a learner (Milena, Dainora & Alin 2008). The interviews were undertaken with all four participant groups as per their availability, on their own (semi-structured interview) or in groups (focus group discussion). If the latter was the case, focus group discussions were conducted.

I carried out semi-structured interviews of key informants in advance (via Skype) or at the beginning of my stay in the country. These key informants were interviewed in English using a ‘topic guide’ which had been developed in advance (Polit & Beck 2008). These topics used a series of open-ended questions which encouraged participants to talk freely and openly, using their own words. Topics were tailored according to the group, but were based on the frameworks and findings used in the two prior reviews undertaken at the beginning of the PhD journey. The interviews included questions on health service delivery, health workforce, health information but also leadership, governance, financing, barriers

and facilitators. The interview guide for each group (Annex 8-11) was part of the ethics application process in Bangladesh.

The second group interviewed were the service providers (midwives, allied health professionals) and service recipients (women). The semi-structured interviews were carried out in English if possible, or with an interpreter in Bangla, especially for the women's interviews. Again, a topic guide was prepared mainly focusing on the quality maternal and newborn care framework, but with a focus on specific areas such as collaboration, interaction and professional relationships with the midwives working in the midwife-led units.

During the various interviews, I gave the respondents the opportunity to provide rich and detailed information about the phenomenon studied, i.e. midwife-led care in Bangladesh (Polit & Beck 2008). The interviews lasted for about 15-90 minutes and took place in an office, in the health care setting or in women's homes. Interviews were recorded in audio format with the permission of the interviewees to aid the analysis. In this way, a full description of what was said was secured (Walsham 1995).

FOCUS GROUP DISCUSSIONS

Focus groups can be used in multi-method qualitative research studies and can ideally be combined with in-depth interviews (Liamputtong 2011). In general, focus group discussions are used to generate insights into thoughts and experiences of a selected group on a specific issue, in this case midwives' or women's perspectives on midwife-led care (Milena, Dainora & Alin 2008).

Focus group discussions consist of participants with similar backgrounds that form a homogenous group (Polit & Beck 2008). Two different types of focus groups were therefore formed at each site, i.e. groups of midwives and groups of women.

The women in the focus group discussions were those who had given birth in the midwife-led unit. They were recruited during a well-baby clinic or at the postnatal maternity ward. The focus of the discussions was the women's perspective of the midwifery model of care, centring on accessibility and acceptability of care and

drawing on the building blocks of the QMNC framework (Renfrew et al. 2014). A set of about 12 questions guided the discussion. The questions were easy to say, clear, short and open-ended (Krueger & Casey 2014). The set of questions were shared with the interpreter in advance so she (or he) was familiar with the aim of the focus groups.

The focus group discussions were recorded in audio format and transcribed by a translator, who was a different person to the interpreters. The interpreter was encouraged to take an active role in the focus groups to increase the flow of the conversation and save participants' time. Only some key issues were summarised, so that the researcher could allow additional questions to be asked.

The focus group discussions of service providers consisted of midwives or nurse-midwives working in midwife-led units. The focus here was on the providers' perspective of the midwifery model of care, again following the QMNC framework (Renfrew et al. 2014) but the session also included a few questions based on the findings of the policy framework applied in the health care policy analysis in Phase 2 (Van Lerberghe et al. 2014). Again, a questioning route was developed as mentioned in the focus group on service users. Active translation was requested so that health professionals, while being able to speak basic English, were also able to speak in their mother tongue. This improved the flow of the conversation.

4.5.6. DATA ANALYSIS

Triangulation of evidence from multiple sources was carried out. The qualitative data derived from interviews and focus group discussions were analysed by applying a mixed approach, including deductive (i.e. a priori codes/themes that came from analytical frameworks) and inductive (i.e. open to new insights from the data) analysis. Data from the interviews and focus group discussions were translated when Bangla was used and transcribed and a framework analysis was performed (Srivastava & Hopwood 2009).

The framework analysis followed a five-step process (Ritchie et al. 1994):

1. familiarisation;
2. identifying a thematic framework;
3. indexing;
4. charting; and
5. mapping and interpretation

In the first phase, I immersed myself in the data by listening to the audio recordings, reading the written and translated transcripts and field notes (Ritchie et al. 1994). This process was repeated several times. During the familiarisation phase, notes were taken using the memo function in NVivo. Also, quotes from participants, that stood out as exemplary were marked using NVivo.

In this initial step, I started to work together with a peer group of graduate students at the Institute of Qualitative Research in Berlin[14] (peer data analysts). Before each session, the raw data material was shared so that everybody had time to read the material and take notes on what emerged from the data, which was important in terms of the overall impression. To analyse the data, we used variations of Glaser & Strauss (1967) and its further development by Strauss et al. (1996); Strauss, Hildenbrand & Hildenbrand (1994). Within the group of peer data analysts, we jointly reviewed samples of our data applying a hermeneutic approach that according to (Kinsella 2006):

(a) seeks understanding rather than explanation;

(b) acknowledges the situated location of interpretation;

(c) recognises the role of language and historicity in interpretation;

[14] https://qualitative-forschung.de

(d) views inquiry as conversation; and

(e) is comfortable with ambiguity.

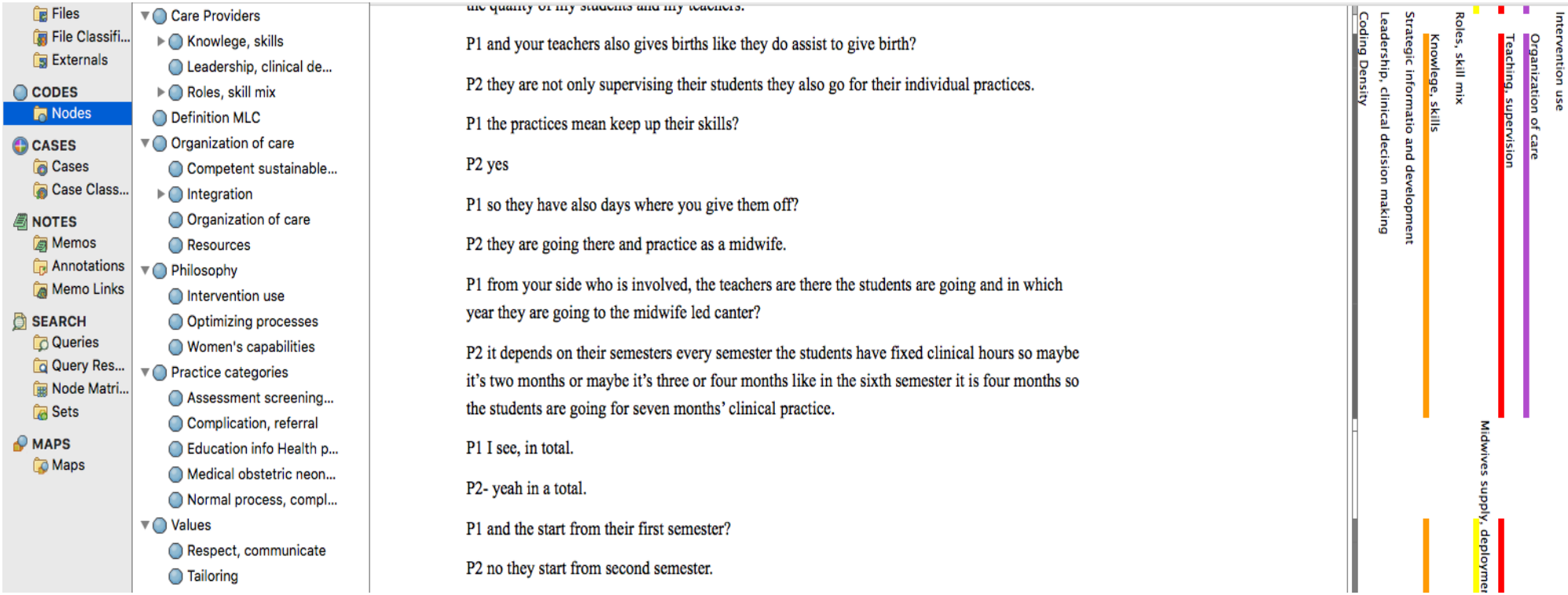
In roughly five sessions, each lasting about 1.5 hours, the peer data analysts shared their associations with the data, while I only listened and took notes. I included these notes as memos in the NVivo analysis software. In this process, which lasted about six months, 5 such sessions were conducted. These sessions helped to process the data for the next steps.

The second step followed when themes or issues in the data set emerged. While these had been a priori themes that were also found in the literature reviews, I remained open and allowed "the data to dictate themes and issues" (Srivastava & Thomson 2009, p. 75).

In the third step, the analysis tool NVivo was used to index portions or sections of all textual data that corresponded to a certain theme (Srivastava & Thomson 2009). This means that under each main category and subcategory textual data was indexed accordingly. The application of the QMNC framework enabled indexing and sorting of data into major categories such as health care providers (see Figure 10 below). This, according to Ritchie et al. (2013), helps the researcher to cluster the data which is 'about the same thing'. Connections were made within and between themes. As I was open to the data, additional sub-categories were included. An example of additional sub-categories is that within "care provider", the sub-category of "leadership and clinical decision-making was added".

This illustration in Figure 10 shows the indexing process. To the left, the categories and sub-categories are displayed, the central panel is the transcript of one of the interviews, to the right, the highlighted categories and sub-categories are displayed that are linked with the passages in the transcript.

Figure 10: Indexing and sorting of data according to the QMNC framework (Renfrew et al. 2014)



In the fourth step, the specific data sections were charted according to themes. In this step, data were lifted from the original textual context and assigned headings and sub-headings according to the defined themes. An example is shown in Table 9: from the sub-category “Leadership” in the “care provider” main theme, the heading “Midwives lead the way vs. midwives are led by others” forms a section in which the original quotes are displayed and are summarised.

Table 9: Exemplary step four (charting) and five (mapping and interpretation) of the data analysis

Leadership

Midwives lead the way vs. midwives are lead by others		
Summary	**Detected elements**	**Key dimensions**
Midwives are currently still a new cadre and therefore need support from other professionals. “P2- so by this thing their thinking is that it is not possible to give all the leadership because they have to do with the others. Maybe after few years, one of two years later they can take the leadership as independently. Now they need others’ support from professional to lead the midwifery care. P3- yeah P2- we also as the midwifery society, we also support this system P3- yes. P2- because we said no, we cannot give all the responsibility to new cadre. Ok you are capable to do alone. So you have to think, they have to need some mature decision taking time they are capable but some place as a new cadre they need security.” (midwifery association)	- Midwives new cadre - Rely on getting guided by other professionals - Midwives need decision taking time - Leadership is handed over by other professions – feeling of safety and security - Midwifery society endorses that other professionals support	- Transition - Safety and security
In the governmental facilities, midwives have only been deployed recently. In the private facilities (mainly in the Rohingiya refugee camps) midwives work in center which is led by themselves. “P2- so here also working certified midwives, nurse midwives, midwife together also doctors. so actually I was in one midwifery led care, she was with me in the Rohingya camp midwife led care center led by the midwives P1- oh. Okay. P2- but in the government they are very new only fifteen days P1- sure P2- they are joining fifteen or twenty days ago P3- and also you know in the government area they have some lacking of facility, in the Rohingya camp everything is in their hands. That is why they can do nicely as a leader but in the government you know which centers are selected as a	- Difference between midwife-led care and leading (heading, managing) the unit. - In the Rohingiya camp midwives lead the center - In the government, midwives are recently deployed and don’t manage their centers - Dimensions of leadership	- “everything is in their hands”

In the final step of mapping and interpretation, the key themes were analysed by following the objectives of qualitative analysis, which are: “defining concepts, mapping range and nature of phenomena, creating typologies, finding associations, providing explanations, and developing strategies” (Ritchie et al. 1994, p. 184). For this last step, elements were detected. These elements characterise or differentiate what was said

(e.g. “midwives new cadre” - Table 9). From these detected elements, an underlying key dimension of the phenomenon emerged (e.g. “transition” – Table 9) following a method proposed by Ritchie et al. (2013). These key dimensions were linked and mapped.

In this process, my peer data analysts reviewed selected samples of the interpretation process and reviewed the categorisation and the development of detected elements and key dimensions.

Through-out the entire process, sessions with the peer data analysts not only included data analysis (n=5), but also discussions about the quality of translations and accuracy of transcription, and around interpretation of data provided by people whose English is not their mother tongue. In total, 11 sessions were conducted with the peer data analysts. These discussions led to further investigation of the quality of translation and transcription, such as by using passages in which an interpreter was included. As these were also translated later, the differences between the interpretations during the interviews or focus group discussions and the translation of data was analysed. To check the way data was translated and transcribed, audio recordings and notes that were taken during the interview were checked again and if necessary, corrected. A decision was made to correct the English of the participants to provide clear quotes for interpretation and, though the quotes were anonymous, to protect the interviewee from potential distress by seeing sentences that were not clear. While there was a strong argument in favour of keeping the quotes as they were and giving the participants their authentic voice, the quotes were “sanitised”.
In the findings chapter, quotes from interviews and focus group discussions are used to help to illustrate the themes and sub-themes.

4.5.7. ETHICAL CONSIDERATIONS

Within the framework of internationally accepted principles of ethical research involving humans, the overall objectives are to protect the individual and ensure that human values are respected. Traditionally, ethics in research relies on considerations such as

not doing harm, not breaching confidentiality, not distorting data, informed consent, honesty, and the right to withdraw (Behi & Nolan 1995; World Medical Association 2001).

This study specifically followed the Australian National Health and Medical Research Council guidelines as the original home university was Australian. Ethical approval was provided by the UTS University Human Research Ethics Committee on the 2 August 2017 under the approval number UTS HREC REF NO. ETH17-1241 (Annex 7). Later, in Bangladesh, ethical approval was obtained from the Internal Review Board of James P. Grant School of Public Health at BRAC University on the 13 August 2018 under the IRB reference number 2018-021-ER (Annex 6). Access to the governmental health structures was granted by the Directorate General of Health Services in Bangladesh on 7 November 2018 (Annex 5).

RESEARCH MERIT AND INTEGRITY

Research merit and integrity were maintained by using appropriate research design and frameworks outlined earlier, to ensure that findings were robust and defensible. As this research is part of a PhD thesis, supervisors gave regular feedback to ensure the highest standards of research integrity.

As described earlier, reflexivity was used (Berger 2015). This enabled the researcher to balance power in relationships between the researcher and those being researched by 'decolonising' the discourse of the 'other' and ensuring that while interpretation of findings is always undertaken through the eyes and cultural standards of the researcher, the effects of the latter on the research process were monitored (Berger 2015). This was mainly achieved with the support of the peer data analysts, to whom the data was provided for their interpretation.

When possible, a female interpreter was used who ensured that both women from the local community around the health centre and health professionals were able to talk freely in their own language.

CONFIDENTIALITY AND ANONYMITY

Data obtained from interviews and focus group discussions was handled confidentially (Polit & Beck 2008). Information shared by participants was not reported in a manner that could identify individuals. This means, if direct quotes are used to report the findings, only their roles (e.g. midwife, woman, doctor, expert, programme manager) are used. Names of the study sites are not mentioned explicitly in the thesis and only general information such as the number of midwifery staff are mentioned.

Electronic data was stored immediately on the SD card of the audio recorder and all data was transferred to the UTS cloud (Cloudstore) each evening after the recording took place. The data on the SD card was removed after uploading to the UTS cloud, which is password protected. Field notes from the reflective journal are only accessible to myself, as they are stored on a password-protected personal computer. Where excerpts of these notes were shared with supervisors, confidentiality was maintained by the co-researchers. The doctoral group of qualitative social science researchers (peer data analysts) received excerpts of the interviews and focus group discussions that were anonymised. All doctoral students that were part of this interpretation group agreed not to share the data excerpts with third parties and agreed to delete them once the analysis was completed.

Anonymity in quantitative data from the routinely collected hospital data can be guaranteed, as the names of patients were not collected.

CONSENT FORM AND INFORMATION SHEETS

Written consent from all participants in interviews and focus group discussions was obtained using a consent form that informed participants about the purpose of the study, explained issues around confidentiality and anonymity and stated the right to withdraw from the study at any time. The form was written in English and Bangla (see Annexes 12-17). If a participant did not understand English, an interpreter was asked to translate whether the information given on the Bangla consent and information sheets were understood by the participant. If a participate was illiterate and unable to sign the consent sheet, he or she was asked to provide a fingerprint. However, all

participants were able to provide a signature. Signed consent forms were kept in a folder which was accessible only to myself.

POTENTIAL RISKS

During each phase of the research project, it was recognised that risks could appear but with mitigation strategies, these were kept to a minimum.

In the initiation and concept phase, ethical approval in the country of data collection was a lengthy process. As I had worked in Bangladesh in collaboration with the respective Ministry of Health and Welfare, from which access to the study sites and participants was obtained prior to data collection, this risk was reduced. Support for this research was requested from the James P. Grant School of Public Health at the BRAC University, from which ethical approval was given and also from the UNFPA Bangladesh, which works in close collaboration with the Ministry of Health and Welfare.

In the planning and development phase, problems with the recruitment of participants were mitigated by the inclusion of a preparation phase in the country. Information provided by the Directorate General of Health Services letters (Annex 5), one of the directorates of the Bangladeshi Ministry of Health and Social Welfare, was sent to the respective interview partners and study sites about one week prior to data collection. A reminder by phone was made one day prior to the visit.

During the implementation phase, security issues in Bangladesh were considered to be a potential risk. Therefore, during the in-country data collection period, I registered with the German Federal Foreign Office and followed its security measures. Also, I obtained travel permission from the University of Technology Sydney and, as part of their security measures, was constantly updated on security issues in country by their service provider “International SOS”. My primary supervisor checked on me on a daily basis by e-mail.

Potential risks in the dissemination and reporting period were minimised by ensuring in advance that all researchers involved in the process were aware of the UTS intellectual property requirements. A dissemination plan was developed during the research project to enhance the likelihood of the systematic transfer of research

findings. Research findings were disseminated widely at international, national conferences and published in peer-reviewed papers (see list). Even after completion of the PhD project, the researchers plan to publish to ensure wider dissemination.

4.6. SETTING: BANGLADESH - SOCIAL DETERMINANTS OF HEALTH

Phase 1 and Phase 2 are focussed on Bangladesh, a lower middle-income country in South Asia. Therefore, in this section, a general introduction about Bangladesh will set the scene. Afterwards, contributing factors outside the health sector will be described, which include various sections that are relevant to the midwifery and maternal health system and policies in Bangladesh, such as female education, women's empowerment and equity, improved communication networks and water and sanitation, nutrition and poverty reduction.

Bangladesh was founded in 1971, after the Liberation War in which it gained independence from Pakistan. The war left the country devastated and it has since endured many challenges including poverty, political turmoil and frequent natural disasters. The country is located in the Bay of Bengal in South Asia and shares borders with India in the west, north and east, and Myanmar in the south-east. The land is characterised by two distinct areas: a delta plain which is traversed by a pervasive network of different rivers vital to Bangladesh's socioeconomic life, and a hilly region in the south-eastern and north-eastern parts of the country. The country suffers regular natural disasters including floods, cyclones and tidal bores that affect overall poverty reduction progress. It is the world's eighth most densely populated country, with 158.9 million people living on a landmass of 147,570 square kilometres (Shilpi et al. 2017). The population increased at a rate of 1.7% between 1990 and 2010, slightly below that of South Asia but decreased to a rate of 1.1% according to the latest data (World Bank 2018b) (Table 10). Most (75%) of the population resides in rural areas, although the country is becoming increasingly urbanised. Less than one third of the population in Bangladesh is under 15 years of age and people aged 65 years and over constitute 5.1% of the total population (Shilpi et al. 2017). The population consists of approximately 98% ethnic Bengalis, with different tribal groups making up 2% of the

population. The majority of the population are Muslim (89.5%), with the remainder consisting of Hindus (9.6%), Buddhists (0.5%), Christians (0.3%) and other religious groups (Iva 2010).

Administratively, the country is divided into seven divisions, 64 districts (Zila) and 488 sub-districts (Upazila). The seven administrative divisions are Dhaka, Chittagong, Rajshahi, Rangpur, Khulna, Sylhet, and Barisal. Each rural area in an Upazila is divided into Union Parishads (UP) and mouzas (cluster of villages) within a UP. The urban area in an Upazila is divided into wards and into mohallas (cluster of households) within a ward. These divisions allow the country as a whole to be easily separated into rural and urban areas. In the Chittagong division, the district Cox's Bazar in the south of Bangladesh bordering with Myanmar currently hosts one of the biggest refugee populations in the world, with around 860,000 Rohingya refugees from Myanmar living in several refugee camps (UNHCR 2021). In this district, several midwife-led units were visited during data collection for this research.

Bangla, the language which is spoken and written in Bangladesh is central to Bangladeshi culture. In Bangladesh, the English word 'midwife' is used to refer to the profession which is based on international standards in education and regulation. Traditional birth attendants are called "dai" in Bangla.

4.6.1. CONTRIBUTING FACTORS OUTSIDE THE HEALTH CARE SECTOR

Midwife-led care in Bangladesh is embedded in the health care system. However, there are various factors that influence health outcomes that lie beyond the health care sector. These factors arise from the social determinants of health which are rooted in general socioeconomic, cultural and environmental conditions (Dahlgren & Whitehead 1991). This section also takes a "gender lens" in understanding the factors. A "gender lens" means working to make gender visible in social phenomena; asking if, how, and why social processes, standards, and opportunities differ systematically for women and men. It also means recognising that gender inequality is inseparably intertwined with other systems of inequality. The background information on Bangladesh therefore includes a description of female education, followed by women's empowerment and

equity. A description of communication networks and nutrition follows. An overview is provided of infrastructure, water supply and sanitation in Bangladesh. Finally, an analysis of poverty reduction is provided.

Table 10: Bangladesh key indicators (Group 2015; National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019; National Institute of Population Research et al. 2011; National Institute of Population Research, Training, et al. 2016; Research et al. 2009)

Theme	Indicator	Time in which data was reported		
		1990-1999	2000-2009	2010-present
Population	Total population (millions)	107 (1990)	132 (2000)	159 (2017)
	Total fertility (births per woman)	5 (1990)	3 (2000)	2 (2019)
Health Financing	Total health expenditure per capita (PPP, constant 2005 international $)	24 (1995)	24 (2000)	67 (2011)
	Out-of-pocket health expenditure	61 (1996)	58 (2000)	61 (2011)
Economic Development	Gross domestic product per capita	732 (1990)	949 (2000)	1622 (2012)
	Female participation in labour force (% female population age (15-64)	61 (1990)	57 (2000)	60 (2012)
Health Workforce	Physicians (per 1000 population)	0.2 (1990)	0.2 (2001)	0.4 (2011) 0.6 (2018)
	Nurses and midwives (per 1000 population)	N/A	0.3 (2005)	0.2 (2011) 0.4 (2018)
Education	Girls primary net school enrolment (% of primary school age children)	67 (1990)	96 (2005)	111 (2018)
	Adult literacy rate (% of males and % females aged 15 and above)	44 (m) 26 (f) (1991)	54 (m) 41 (f) (2001)	62 (m) 54 (f) (2011)
Environmental Management	Access to clean water (% of population with access to improved sources)	76 (1990)	79 (2000)	83 (2011)
	Access to sanitation facilities (% of population with improved access)	38 (1990)	45 (2000)	55 (2011)

Theme	Indicator	Time in which data was reported		
		1990-1999	2000-2009	2010-present
Urban Planning/Rural Infrastructure	Population living in urban areas (% of total population)	20 (1990)	24 (2000)	29 (2012)
	Electric power consumption (KW hours per capita)	48 (1990)	101 (2000)	259 (2011)
Human Development Index	Value (reported along a scale of 0 to 1, values nearer to 1 correspond to higher human development	.36 (1990)	.43 (2000)	.52 (2012)

4.6.2. FEMALE EDUCATION

Levels of education between girls and boys still vary and girls' and women's access to education shows severe inequalities. The country's net enrolment rate at the primary school level has increased from 80% in 2000 to above 90 percent in 2015. The percentage of children completing primary school is close to 80 percent. With nearly 6.4 million girls in secondary school in 2015, Bangladesh is among the few countries to achieve gender parity in school enrolment, and have more girls than boys in the secondary schools (WorldBank 2020) (Table 10). Policies and programmes such as the Female Secondary School Stipend Project, which supported the expansion of female secondary schooling, was instrumental for this development.

Although enrolment rates of girls are on par with those for boys, data from the 2017 Bangladesh Bureau of Educational Information and Statistics shows that dropout rates for girls are at a high 42 percent at the secondary school level; completion rates are low, with Grade 10 rates at only 10 percent, and secondary level completion rates reaching a mere 59% (Bangladesh Bureau of Educational Information and Statistics 2017). In an analysis from the World Bank and the Bangladesh Bureau of Statistics, reasons for these high dropout rates of girls from secondary and tertiary schools include child marriage, household responsibilities, high levels of pregnancies, lack of access to appropriate information about sexual and reproductive health, mental health

issues, school-based violence and parental choices and abilities to afford school (the two last are higher for girls compared to boys), and contribute to lost years in schooling (Shilpi et al. 2017; Sosale, Asaduzzaman & Ramachandran 2019). These trends of dropout rates in secondary education carry through tertiary education, resulting in low female labour force participation.

While adult literacy continues to improve, the rates still reflect inequality between men and women (Table 10). In 1991 the literacy rate was 44% of males versus 26% of females, whereas in 2011 it had improved to 62% of males vs. 54% of females (Table 10). Increased literacy has positive implications for improving health awareness and health seeking behaviour and practices. An improved educational status of women at reproductive age has been associated with a decreased risk in maternal mortality in Bangladesh (El Arifeen et al. 2014)

4.6.3. WOMEN'S EMPOWERMENT AND EQUITY

The UNDP ranks all countries on a gender development index classifying countries into five groups (UNDP 2020a). Group 1 are the countries with the most gender equality and Group 5 are those with the least. The grouping is based on differences related to the Human Development Index (HDI). The HDI is a statistic composite index of life expectancy, education (literacy rate, gross enrolment ratio at different levels and net attendance ratio), and per capita income indicators, which are used to rank countries into four tiers of human development (UNDP 2020b).

- Group 1 comprises countries with high equality in Human Development Index (HDI) achievements between women and men (absolute deviation of less than 2.5 percent).
- Group 2 comprises countries with medium to high equality in HDI achievements between women and men (absolute deviation of 2.5-5 percent).
- Group 3 comprises countries with medium equality in HDI achievements between women and men (absolute deviation of 5-7.5 percent).

- Group 4 comprises countries with medium to low equality in HDI achievements between women and men (absolute deviation of 7.5-10 percent).
- Group 5 comprises countries with low equality in HDI achievements between women and men (absolute deviation from gender parity of more than 10 percent).

Bangladesh ranks in Group 5 on the gender development index (GDI). Compared to the surrounding countries, Bangladesh is in the same group at the bottom of the ranking as Pakistan and India (both Group 5). Contrasting neighbouring countries are Nepal (Group 4) and Myanmar (Group 2) (United Nations Development Programme 2019).

Another indication of gender equity is related to gender-based violence. In Bangladesh, the incidence of violence against women and girls is still very high. One in five adolescent girls between the age of 15 to 19 years in Bangladesh reported experiencing intimate partner sexual violence (Unicef 2014). In the Demographic and Health Survey (DHS), adolescents are classified as having experienced intimate partner violence if they have been subjected to any of the following acts: physically forced her/him to have sexual intercourse with him/her even when she/he did not want to, physically forced her/him to perform any other sexual acts she/he did not want to, forced her/him with threats or in any other way to perform sexual acts when she/he did not want to.

More than 80 per cent of women who are currently married report being abused at least once during their marriage, most often from someone they know and should trust (Bangladesh Bureau of Statistics 2016). According to this survey, rates of lifetime intimate partner violence (any form) were highest in rural areas (74.8% of women who had ever been married) and lowest in city corporation areas (54.4%). Rates in urban areas outside of city corporation areas were 71.1%, slightly lower than in rural areas. More than one in four women experience sexual or physical violence, while seven out of ten women (73 per cent) have experienced domestic violence at least once in their

life. In contrast to these high rates of women experiencing violence, only 2.6 per cent of women took legal action for intimate partner physical or sexual violence (Bangladesh Bureau of Statistics 2016).

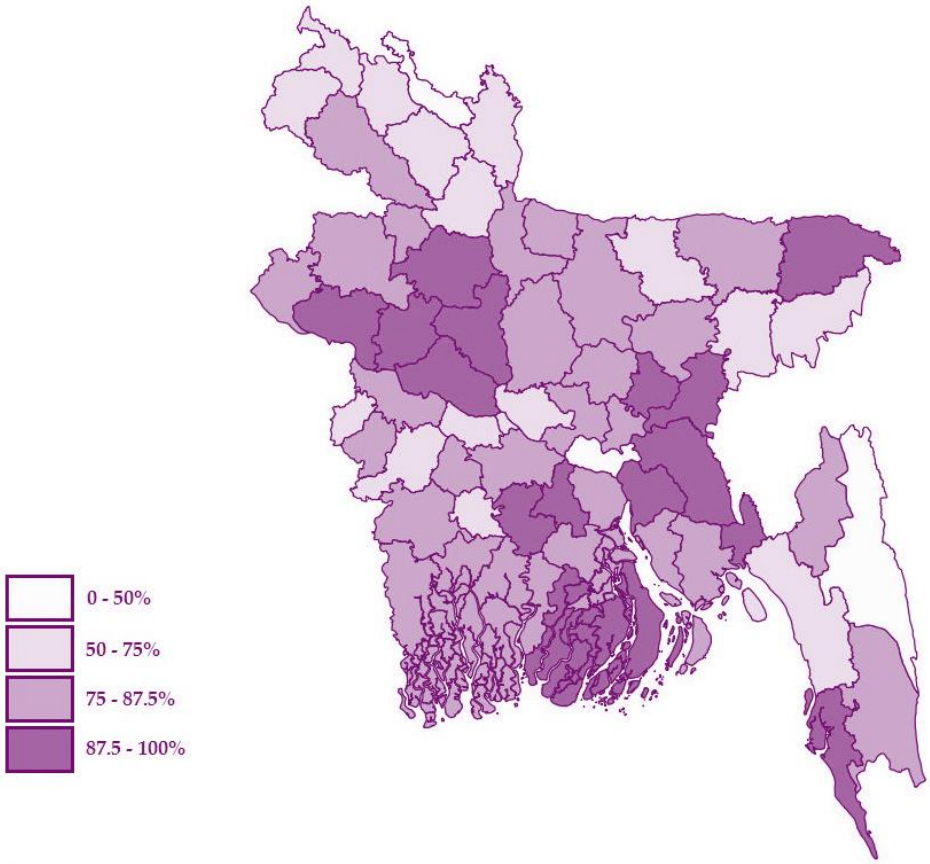
Over the last few decades, Bangladesh adopted laws and policies meant to promote gender equality and address violence against women and girls, such as the Women's Development Policy, followed by the National Action Plan in 2011, the 2009 High Court's Directive on sexual harassment, the Women and Child Repression Suppression Act, and Domestic Violence (Prevention and Protection) Act. The National Action Plan on violence against women and children was revised and launched in November 2018 (UN Women 2020). Bangladesh is a signatory to the Beijing Declaration and Platform for Action (1995), the Universal Declaration of Human Rights, and other international human rights instruments, particularly the Convention on the Elimination of All forms of Discrimination against Women, the Convention on the Rights of the Child, the Declaration on the Elimination of Violence against Women, and the Declaration on the Right to Development. Women's rights and equal opportunities are also included in the country's constitution. Article 27 of this states: "All citizens are equal before law and are entitled to equal protection of law." Article 28 (1) states: "The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth." Article 28(2) states: "Women shall have equal rights with men in all spheres of the State and of public life." Article 28(4) states: "Nothing in this article shall prevent the State from making special provision in favour of women or children or for the advancement of any backward section of citizens." Women are, however, still not equally involved in decision-making: only 20.6% of the seats in the national parliament are held by women (Asian Development Bank 2020).

Gender inequality is also reflected in a study on decision-making power around childbirth in Bangladesh. Men dominate household decision-making with regards to health expenditure, especially in reproductive health. Where men make decisions

about household expenditure, there are lower rates in antenatal care and skilled attendance at birth (Story & Burgard 2012).

Bangladesh is a patriarchal society in which social barriers to decision-making power (at individual, household, community level) impact on health care choices and health care seeking behaviour, nutrition and female employment. Women's activities in the society appear to be constrained by two sets of social norms. First is *purdah*, which is linked to the custom of seclusion and restricts the presence of women in public spaces (Paul 1992). *Purdah* is the practice among women in certain Muslim and Hindu societies of living in a separate room or behind a curtain, or of dressing in all-enveloping clothes, in order to stay out of the sight of men or strangers. Second, the traditional division of labour by gender assigns men the role of breadwinner, and women responsibility for domestic work. Community norms such as the practice of *purdah* and the refusal that unmarried women work outside their homes have a statistically significant and negative effect on women’s participation in paid work. Although *purdah* is practiced all over Bangladesh, there are districts with a high density of women living in households where purdah practice is required compared to others (Figure 11).

Figure 11: District-wise distribution of purdah practice in Bangladesh (Asadullah & Wahhaj 2017)



Another symbol for the status of women in Bangladesh is the tradition of the dowry, in which the family of the bride provides economic means to the family of the groom. In Bangladesh, dowries are commonly referred to by the English term “demand” and sums of money, property or goods are demanded or expected from the bride's family. Although political action against this practice was taken by enacting the Dowry Prohibition Act in 1980, which forbids anyone from giving or receiving a dowry, and by passing The Nari-O-Shishu Nirjatan Daman Ain in 2000 (Law on the Suppression of Violence against Women and Children, 2000), this practice prevails. Dowry, according to White (2017), does “not function as compensation for perceived weakness in women’s economic contribution, but to bolster men’s power. In mobilising “additional”

resources, dowries help to sustain the economic system and indicate an ongoing commitment to cultural idioms of masculine provision and protection, against a background of widespread corruption and political and gender violence." The practice of the dowry is associated with abuse. For example, in cases where the brides' family is not able to provide the agreed sum of the dowry, women experience various forms of domestic violence (Subhan 1997). The role of dowry as an expression of a patriarchal society is also highlighted by Huda (2006, p. 249), who describes the aim of the practice of dowry as the following: "Marriage negotiations for Bangladeshi Muslims involve various financial transactions including primarily the religiously sanctioned dower (*mahr*). Added to *mahr*, the practice of dowry or *joutuk*, demands made by the husband's side to the bride's side, have in the last few decades become a widespread practice supported neither by state law nor personal laws, but apparently designed to strengthen traditional patriarchal assumptions."

Based on data from the Bangladesh Bureau of Statistics, the mean age of marriage of girls or women is 18.4 years, compared to men's 25.3 years, which provides a clear indication that women are engaged with family life earlier than men (Shilpi et al. 2017). Although child marriage is illegal in Bangladesh, it is widespread in the country and around one third of the female teenage population (15-19 years) is married. According to the latest Demographic Health Survey (DHS) data, the age of first marriage continues to rise only slowly (National Institute of Population Research et al. 2011). The median age at first marriage among women aged 20-29 increased from 15.3 years in 2007 to 16.3 years in 2017 (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019). In Bangladesh, marriage marks the transition between child- and adulthood. Given that Bangladesh predominantly follows a patrilocal system, the bride moves into the house of the groom. In this way, newly-wed women or girls and become the household's most junior member. According to Subhan (1997), this means they are expected to be submissive, obedient, hard-working, good-tempered and show modest behaviour.

Based on the practice of *purdah*, most women spend their daily life in the home. According to data from the Bangladesh Bureau of Statistics, while the employment rates of women doubled over roughly 13 years, the rate was still less than 50% of women (16.8 million) compared to men (41.2 million) who are employed. The bulk of female labour is concentrated in rural areas, mostly in agriculture. According to the Labour Force Survey (2015–2016), 63.1% of women work in agriculture, 16.1% are in service sectors and 20.8% are in industry (Bangladesh Bureau of Statistics 2017). Some 60% of the increase in women's paid work during the 2000s was concentrated in urban areas, with half of this in manufacturing sectors and predominately in the ready-made garment industry. According to UN Women, the figures are worse in the formal sector of employment, where only 4.6% of females and 17.7% of males are employed (UN Women 2020).

Women face systemic barriers in Bangladesh. Women account for only 8% of Bangladesh's entrepreneurs and only 25% of women have an account at a formal financial institution. Women continue to take on a major portion of domestic and unpaid care work, irrespective of whether they have formal employment or not. In the formal sector, women earn an average of 21% less per hour than men (UN Women 2020). Over two million women are estimated to be employed in the ready-made-garment (RMG) industry, which dominates the Bangladesh manufacturing export sector. There has also been significant recent growth in new areas such as public sector employment, as teachers or health workers, and in self-employment and household enterprises (Shilpi et al. 2017).

4.6.4. IMPROVED COMMUNICATION NETWORKS (TRANSPORT, ITC) AND WATER AND SANITATION

Bangladesh's rural road network is essential for improving the health, education, and the livelihoods of the majority of Bangladeshis (World Bank 2016). The rural roads across the country need regular repair and rehabilitation. Poor quality, poor construction and low carrying capacity are common problems on much of the road network and large portions of roads are impassable during the rainy season, which

negatively impacts on maternal health (Alam et al. 2016). The national maintenance budget for rural roads has increasingly been in deficit in recent years (World Bank 2016), although the transport and communication sector received the biggest share (26.6%) of the development budget for the fiscal year 2018/2019 (Mamun 2018). Road repair is often reactive and, therefore, more expensive over the long run.

In urban areas, several factors lead to an increase travel time and economic loss, and they have detrimental consequences for public health and the environment. The number of vehicles on city roads in Bangladesh increased 16 times between 2001 and 2013, while motorised public transport accounts for only 23% of trips (World Bank 2016).

Transportation is a major catalyst for economic growth and poverty reduction, but despite investments, various constraints limit its potential benefits for various geographical areas and population groups such as women and children in the country. Women are both users and transport providers. Women's mobility needs have increased over the years, with more women receiving an education and entering the workforce. This is due to more women entering the workforce while remaining primarily responsible for accessing basic services (e.g. bringing children to school and health facilities, going to the market, etc.) for their families. This results in weakening of social barriers such as *purdah* or seclusion and has allowed more girls and women to go out of their houses and communities to study, visit relatives and undertake outdoor household tasks and other outdoor activities (Asian Development Bank 2017). These social norm changes and economic challenges have pushed women to travel in unfriendly, hostile, and unsafe environments. For instance, 64.3% of 600 women respondents of a survey had experienced crime and violence in Dhaka's public spaces (Shafi 2000).

Transport plays an important role in the provision of maternity services. The availability of transportation is a major predictor for whether women seek care by a skilled birth attendant in Bangladesh (Edmonds, Paul & Sibley 2012). Keya et al. (2014) describe the links between cost for transport and poor uptake of service. They show that the median distance travelled for antenatal and postnatal check-ups was two kilometres,

but four kilometres for complication births. Most women used a non-motorised rickshaw or van to reach a health facility. On average, women spent Taka 100 ($US1.40) as transportation cost to attend antenatal care, Taka 432 ($US6.17) for birth, and Taka 132 ($US1.89) for a postnatal check-up. For poor families, the cost for transport might pose a barrier to seek services. Similar conclusions are made by Alam et al. (2016), who conducted a mixed method study in Burkina Faso and Bangladesh. Literacy, transport availability, transportation costs, and travel time were associated with care seeking behaviour in Bangladesh.

Another aspect of mobility and access is mobile phone coverage. As of 2018, around 95% of the population are covered by mobile phone networks (3G) (Asian Development Bank 2020). This is similar to the findings of the DHS 2017-2018, in which the authors state that almost all (94%) households have a mobile phone. Three out of five women who are currently married and aged 15-49 own a mobile phone. Unmarried adolescent boys age 15-19 are twice as likely to own a mobile phone compared with unmarried girls aged 15-19 (64% versus 33%) (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019).

Access to electricity has also expanded, mainly in rural areas, with coverage reaching 91% of households in 2017 (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019).

4.6.5. NUTRITION

The current prevalence of undernourishment in Bangladesh is 14.7% and the prevalence of stunting of children under the age of five is 30.8% (Asian Development Bank 2020). Infant and child feeding practices changed very little between 2011 and 2014 according to the Bangladesh DHS (BDHS) (National Institute of Population Research, Training, et al. 2016), and remain below the National Health Population and Nutrition Sector Development Program (HNPSDP) target for 2016 of 52%. Meanwhile,

the percentage of undernourished women (i.e., with body-mass index (BMI) lower than 18.5) nearly halved (from 52% in 1996–97 to 28% in 2011). Around 10% of the adolescent girls between 10-18 years are underweight and one third have inadequate height (National Institute of Population Research et al. 2011; Research et al. 2009).

Breastfeeding is almost universal in Bangladesh. As many as 90% of children breastfeed until the age of two. Exclusive breastfeeding in children up to six months increased from 43% in 2007 to 55% in 2014, which shows a decline from the rate of 64% reported in 2011. Complementary feeding practices remain relatively poor: overall, 23% of children aged 6-23 months were fed appropriately according to recommended infant and young children feeding practices in 2014; i.e. they are given milk or milk products and foods from the recommended number of food groups and are fed at least the recommended minimum number of times (National Institute of Population Research, Training, et al. 2016). In the 2017-18 BDHS, 69% of mothers initiated breastfeeding within one hour of birth (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019).

Although levels of anaemia are decreasing among both children and women in Bangladesh, it remains a serious public health issue. Half of all pregnant women in Bangladesh are anaemic (National Institute of Population Research et al. 2011). Anaemia is linked to various health consequences such as reduced immunity, increased risk of maternal and perinatal mortality, intrauterine growth retardation, premature births, reduced cognitive and psychomotor development, reduced ability to concentrate influencing scholastic performance, fatigue and reduced physical capacity resulting in low activity levels (Murray-Kolb 2011; Murray-Kolb & Beard 2009; Van Den Broek 2003).

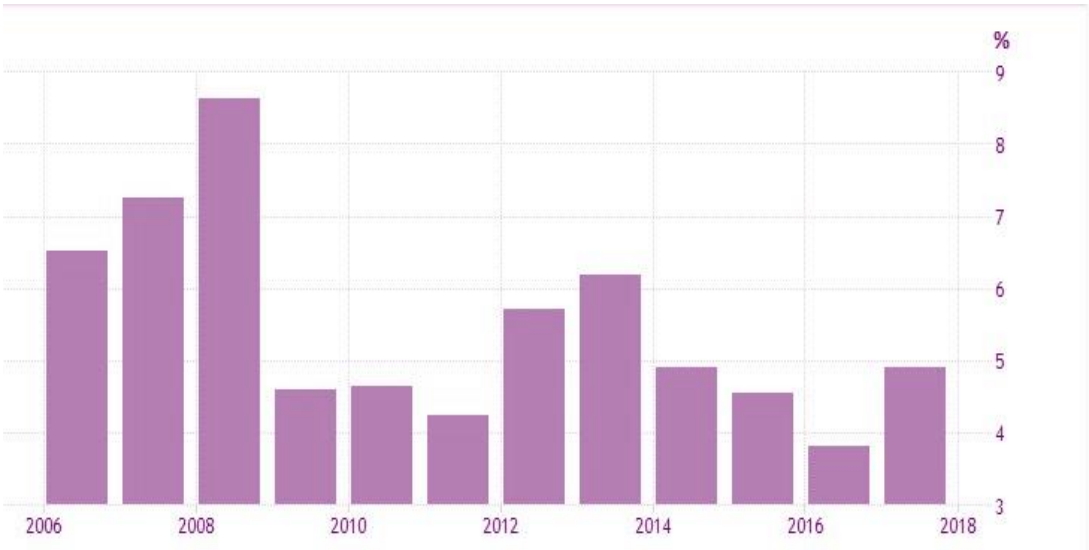
Nutrition and gender are inextricably interlinked in Bangladesh (World Bank 2010). Domestic violence has significant effects on chronic malnutrition and underweight rates, and mothers invested more into the nutrition of their sons compared to their daughters (World Bank 2010). Women’s empowerment was also associated with their own nutritional status: experience of domestic abuse was significantly associated with

women's low body mass index (BMI). Acute malnutrition was associated with educational status of women and household wealth. The improvement of the undernutrition situation of children in Bangladesh is, however, not as rapid as progress in poverty reduction (World Bank 2010).

4.6.6. POVERTY REDUCTION

While Bangladesh has become a lower middle-income country, it is still considered one of the poorest countries in the world. 21.8% of the total population still live under the poverty line, equating to approximately 34.6 million people (Asian Development Bank 2020). However, compared to other countries in the region, Bangladesh's economy has the steepest growth rates. In 2019 the economy grew by 8.2%, the highest rate in the Asia and Pacific region (Asian Development Bank 2020). Bangladesh receives official development assistance (ODA) which consists of disbursements of loans made on concessional terms and grants by international organisations or countries to promote economic development and growth. This includes both bilateral and multilateral foreign aid. Bangladesh was far more reliant on foreign aid in the past than it is today, due to the growth of its economy (Figure 12).

Figure 12: Bangladesh – Net official development assistance received as % Of Gross Capital Formation (World Bank 2020)



In the last decade, Bangladesh has recorded GDP growth rates above 5 percent due to the development of the agricultural sector, garment industry and remittances. Although three fifths of Bangladeshis are employed in the agriculture sector, three quarters of export revenues come from producing ready-made garments. Bangladesh relies on diversified industries, including textiles, pharmaceuticals, leather, fishing, steel, natural gas, shipbuilding, telecommunications, and food processing. Additionally, it has the second largest financial sector of the Indian subcontinent. The health care and social sectors make up a relatively small share of the overall economy with steady growth rates in the last year of about 2.1%. The biggest obstacles to sustainable development in Bangladesh are overpopulation, poor infrastructure, corruption, political instability and the slow implementation of economic reforms (World Bank 2018a). The World Bank's advice to the country is to invest in education and skilled labour, the creation of more and better jobs, infrastructure, urban management, and environmental conservation.

In Bangladesh, the major contributor to health care seeking behaviour is economic status. A household's relative poverty status, as reflected by wealth quintiles, is a major determinant in health-seeking behaviour (Amin, Shah & Becker 2010). Women in the highest wealth quintile were significantly more likely to use competent providers for antenatal care, birth attendance, postnatal care and child health care than those in the poorest quintile.

Total health expenditure in Bangladesh in 2015 was 2.9% of gross domestic product, one of the lowest allocations in the world (Islam, Akhter & Islam 2018). The health care sector is underfunded and is therefore included in the Bangladesh Annual Development Programme (ADP) (BDNews24 2019).

Geographical and financial barriers to care have contributed to higher under-five mortality rates among the poor, girls and in rural areas. These challenges have been compounded by poor quality of care, poverty and high out-of-pocket (OOP) costs. Although the gross domestic income GDP per capita (purchasing power parity (PPP) in USD) rose from $US732 in 1990 to $US1623 in 2012, poverty is a substantial problem which often renders health care unaffordable for the poorest.

4.6.7. MATERNAL AND NEWBORN OUTCOMES

This section highlights the progress and also gaps in equitable maternal and newborn health outcomes in Bangladesh.

According to the latest DHS (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019), at least one visit in a pregnancy by any care provider varied between different groups (Table 11).

Table 11: Antenatal care in Bangladesh by wealth, location, district and educational background of women (one visit by any care provider – skilled or unskilled – by group)

Category	Group	Coverage (%)
Wealth	Lowest wealth quintile	82.4
	Highest wealth quintile	98.9
Location	Rural	91.0
	Urban	94.8
District	Barisal	85.0
	Khulna	96.0
Educational background of women	No education	73.4
	Secondary or higher degree	98.6

While Bangladesh has improved effective coverage in many areas, equitable access varies. Women from the lowest wealth quintile, or living in rural areas, or living in Barisal district located in the south-west of the country, or with no education had fewer ANC visits compared to women from the highest wealth quintile, or living in urban areas, or living in Khulna located in the south of the country, or with a secondary or higher degree. If ANC was supplied by a skilled provider, then there were even greater differences between the different groups. The quality of antenatal care related closely to the mother's education, wealth and place of residence. For example, only 7% of pregnant women from the lowest wealth quintile received quality ANC (four visits,

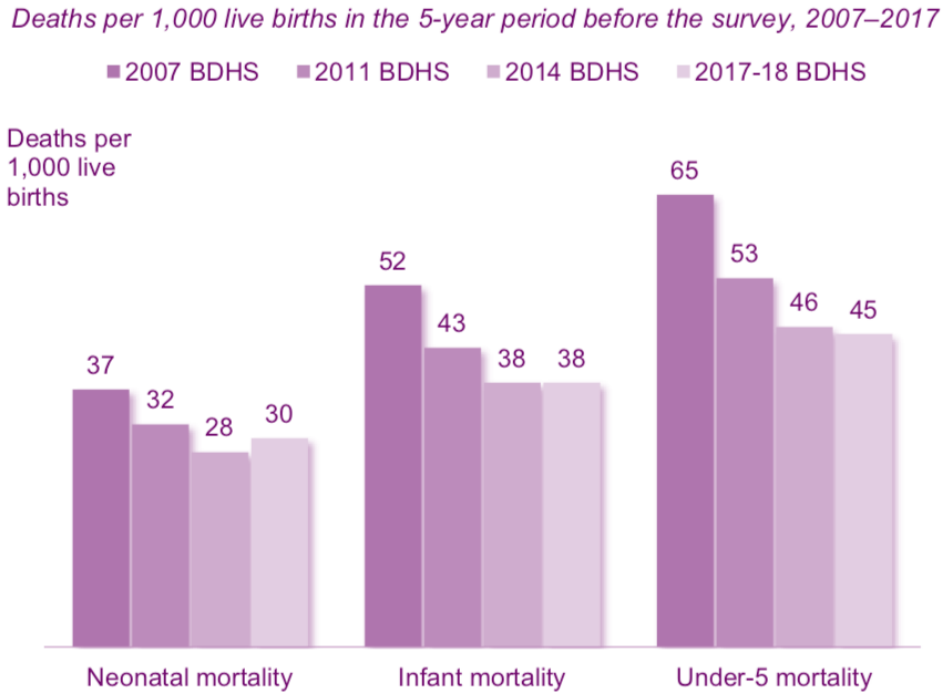
skilled provider, all components of ANC), compared with 37% of women from the highest wealth quintile. Similar outcomes were able to be observed in other indicators, such as facility-based births and births attended by a skilled provider.

In Bangladesh, 5200 women died in 2013 in pregnancy and childbirth. In that year, the MMR was 170 maternal deaths per 100,000 live births (lower estimate 94, upper estimate 300) (WHO, UNICEF & UNFPA 2014). Based on figures from 2017, the maternal mortality increased to 176 maternal deaths per 100,000 live births, which meant that approximately 5500 women died around childbirth (World Health Organization 2015).

In nearly two decades, between 2001 and 2017-2018, fertility rates dropped by 0.9 child per woman (from 3.2 to 2.3 children per woman), consistent with the steady increase in the use of modern contraceptives (Table 14). The reduction in fertility was mainly among older, higher-parity women, thus also contributing to MMR decrease (El Arifeen et al. 2014).

According to the BDHS 2017-2018, the under-five mortality rate in the 10 years following the 2007 BDHS decreased from 65 to 45 deaths per 1,000 live births. The infant mortality rate decreased from 52 to 38 deaths per 1,000 live births. The neonatal mortality rate however, was reduced with the slowest decrease from 37 to 30 deaths per 1,000 live births. The neonatal death rate accounts for 67% of all under-five deaths (Figure 13).

Figure 13: Trends in childhood mortality rates (National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019)



The outcomes in maternal and newborn health show that equitable access to health care services is a major issue in Bangladesh. Healthcare outcomes are influenced by the socio-economic and educational status and depend in which region in Bangladesh women seek care for themselves and their newborn. Although Bangladesh has made tremendous progress in maternal and newborn health, which can be seen in the decrease in maternal and newborn mortality, the trend also shows that the decrease of mortality figures has slowed down in recent years.

4.6.8. SUMMARY OF THE CONTEXT

In Bangladesh, although education of girls has caught up due to various policies in the education sector, there is still a gender bias, especially in secondary and higher education. This results in lower literacy rates of women compared to men and in low female labour force participation. Female education and workforce participation

impacts on midwifery education and deployment, as independently working women are not yet the norm. In terms of gender equality, Bangladesh lags behind in other areas too and is at a similar level as countries in South Asia, such as Pakistan and India. As midwives in Bangladesh are exclusively women caring for women and their families, the issue of gender equality affects midwife-led care. Despite the progress made so far in terms of the normative and policy framework, the incidence of violence against women and girls is still very high.

Gender inequity is evident in other areas of sexual and reproductive health: men dominate household-decision making with regards to health expenditure, especially in the area of reproductive health. Where men make decisions about household expenditure, lower rates in antenatal care and skilled attendance at birth exist. Women's activities in this society appear to be constrained by social norms, including the concept of purdah or seclusion and the traditional division of labour by gender. The practice of dowry shows that Bangladesh is a patriarchal society with early marriage being common.

Transportation is a major catalyst of economic growth and poverty reduction, but despite investments, various constraints limit its potential benefits for various geographical areas and population groups such as women and children. Access to clean water and sanitation is available only for a little more than half of the population, but access to electricity has expanded, reaching about 91% of the households.

In nutrition, Bangladesh has improved in many areas. For example, the percentage of women who are undernourished has nearly halved. However, undernourishment is still at a rate of 14.7% and one third of children under the age of five are stunted. Breastfeeding is almost universal but exclusive breastfeeding rates have actually declined. Nutrition and gender are linked in Bangladesh, which can be seen in attitudes towards domestic violence and its significant effect on chronic malnutrition and underweight rates.

Although it has become a lower middle-income country, Bangladesh is still considered one to be one of the poorest countries in the world, with 21.8% of the total population still living under the poverty line. The major contributor in health care seeking behaviour

is economic status, highlighting the fact that inequities in accessing the underfunded health care sector exist.

Although there is political commitment, this has not yet been translated into a budget allocation, highlighting the fact that the public health sector is grossly underfunded. ODA therefore plays an important role and also fosters the development of midwifery and midwife-led care. The most important contribution to the health of the population is out-of-pocket expenditure by the citizens of Bangladesh, a fact which could threaten economic survival, especially in vulnerable populations such as women, children and adolescents. The sector that benefits most from high out-of-pocket (OOP) and low public spending on health care is the private sector.

This section has described the socio-economic and social context of Bangladesh where the case study took place. It is included to situate the study setting. The next section will provide an insight into my position into this research.

4.7. MY POSITION IN THIS RESEARCH

From 2012-2014, I worked with the United Nations Population Fund (UNFPA) in Bangladesh, supporting the Government of Bangladesh to develop professional midwives. Many stakeholders in the area of midwifery in Bangladesh are still in their positions and this means I was able to build on my existing relationships and contacts. Issues on being an insider and an outsider in terms of the research were relevant to my work given my experiences. The scientific debate the insider/outsider status started in Sociology and Anthropology and assumed that there is a clear delineation of the researcher being either an in- or an outsider (Hellawell 2006; Merriam et al. 2001). Each status would come with advantages or disadvantages (Bartunek & Louis 1996). More recent discussions, however, suggest that the insider/outsider status is not so clear-cut but more complex in terms of power dynamics and position. Researchers can find themselves in situations in which they experience both, being an insider and outsider at the same time (Merriam et al. 2001). Even if the concept of insider/outsider can be complex, it will be applied in this research as an entry point to ensure reflexivity (Hellawell 2006).

In this study, I was both an insider and an outsider. I am familiar with the health system in Bangladesh, follow political and social changes in the country, and with my background in cultural anthropology, I am open to, and interested in the cultural customs of people. This made me an 'insider' during Phase 2, which was the policy analysis, and in Phase 3, the case study, as I am familiar with, and aware of, the policy developments and developments in midwifery, having lived in the country and worked on midwifery issues with UNFPA.

Being an insider comes with benefits. For example, in my instance it enabled me to gain access to the midwife-led units during data collection for the case study (Berger 2015). My 'insider' status as a midwife means I was able to gain access to the field positively given my relationship with midwives working in the units. Their willingness to share information might be increased because we have the same professional background. Another link is that I am a woman, most of the midwives are women and the clients/service users are women, as were the participants in the focus group discussions. This might also influence information sharing, as women might be more comfortable sharing their views on a sensitive topic, such as childbearing, with another woman (De Tona 2006). In contrast, in interviews with male policy makers in Bangladesh for example, being a woman, coming from a high-income country, having worked for the United Nations, who might want to impose concepts and ideas, may have impacted on information sharing and would have kept me distant.

There are factors that also position me as an 'outsider' or underline the notion of 'otherness' in the sense of being different in gender, age, class, 'race' (Fawcett & Hearn 2004). I do not speak Bangla. The recipients of midwifery care are often women with lower educational background who do not speak English. What also keeps me 'outside' is that I come from a high-income country and a different cultural background. This might influence power dynamics in the interviews and observations. In addition, the knowledge that I am undertaking a PhD might also influence hierarchical structures. These power dynamics can be addressed through reflection which hopefully have enabled me to undertake more inclusive research but ultimately cannot be eradicated (England 1994).

The disadvantage of being an insider and an outsider to some degree is that I may have made assumptions as I thought that I might "know" certain things or I may have missed important issues as I was not able to communicate effectively or failed to comprehend what I was observing. The concept of reflexivity has therefore been incorporated in this research.

Reflexivity induces self-discovery and can lead to insights and new hypotheses about the research questions (England 1994). The point of apparent "knowledge" about midwifery in Bangladesh was also mitigated by the regular data analysis session with a peer group, all of them with a non-medical background and without a background in development or global health, therefore making them 'outsiders' to this research. All the aspects relating to both perspectives, insider and outsider, in the field research demanded the inclusion of reflexivity in the research process. It required from me to continually ask myself where I stood in relation to what I was studying at any given time in the research process, throughout the research process, but especially in Phase 3. Consequently, I needed to focus on self-knowledge and sensitivity. This focus helped me to carefully self-monitor the impact of my biases, beliefs and personal experiences on this research and to include the concept of self-appraisal (Berger 2015).

As a tool for self-appraisal, a reflective journal has been maintained, from which excerpts have been shared with my supervisors to receive feedback on how credibility could be enhanced (Whitehead 2004). These 'critical friends' might also be able to challenge the self-deceptions of me as researcher (Northway 2000).

Reflexivity in the development context around maternal and newborn health is especially important for me as a midwife and also as an expert who has worked in development (Crabtree 2019). I utilised a number of approaches similar to that described by Crabtree (2019) to reflect on and position myself in this research. Before I embarked upon the fieldwork, guidance was sought from the local contacts at BRAC University and UNFPA. Their suggestions regarding places to collect data was followed. A relationship was built with the participants, especially the midwives who were interviewed. Usually, the first question I was asked was whether I was married

and if I had children myself. My answer most of the time triggered some doubtful reactions. At the same time, it also helped the participants to get to know me and my cultural background better which helped to build trust. When asked about midwifery in Germany and other places I have worked in or visited, I openly shared my experiences with my Bangladeshi colleagues. The reflection of my own cultural background in relation to what I experienced helped to position myself in this research. These thoughts were noted in the reflective journal.

I brought gifts and presented these to the staff in the midwife-led centres I visited: each centre received a birthing ball and a pump. This was appreciated and served as a sign of respect for the contribution to this research. In terms of reciprocity, my plan is to present the findings of this research in a symposium on midwife-led care in low- and middle-income countries at the Triennial conference of the International Confederation of Midwives, to which the project leaders of BRAC's midwifery programme (which runs two midwife-led centres) have also been invited to present. This also reflects on my ambition in this research to create a space for mutual learning and exchange.

Similar to Crabtree (Crabtree 2019) I also needed to remain flexible throughout the research process, especially when complications occurred. For example, during my first visit I was not able to visit the public midwife-led units as I did not receive official permission. I felt that the government officials were not comfortable with allowing me to see the newly introduced midwife-led centres as they were not yet perfectly established.

After returning from Bangladesh, I organised a discussion session on midwifery in Bangladesh which took place at a regional conference of the ICM. I facilitated this meeting and asked the participants including midwives, midwifery regulators, programme managers, researchers and government officials who attended the discussion that included around 20 participants to share what they were doing in Bangladesh. I asked each of the participants to express what is needed from others in this session to improve this work. As I expressed that I needed support to access the public facilities which provide midwife-led care in Bangladesh and that I know that they are still under development, one of the government officials who was present promised

to support me. She got to know me and my approach during the conference enhanced mutual trust. When I returned to Bangladesh for a second round of data collection I managed to receive permission to access the field (see Annex 5).
In summary, being an insider and outsider has benefits and limitations. Throughout the study, I aimed to be open, flexible and cognisant of the nature of my position and as such, I hope I have been able to be reflexive.

4.8. CONCLUSION

In this chapter, the methodology of this research was described. The aims and objectives of this research were described and the overall conceptual framework the research is embedded in was outlined.

The research design was described in detail for each phase. Ethical procedures and considerations were set out, as well as considerations around the potential risks. The setting in which Phase 1 and Phase 2 is located was described based on the social determinants of health. This was followed by a reflective description of my position in this research.

In the next chapters, the findings of Phase 1 and Phase 2 will be presented.

CHAPTER 5. PHASE ONE: HEALTH POLICY AND SYSTEMS ANALYSIS - MIDWIFERY AND MIDWIFE-LED CARE IN BANGLADESH

5.1. BACKGROUND

The objectives of this chapter are to assess the policies and health system efforts related to midwife-led care in Bangladesh, a lower middle-income country in South Asia.

A specific focus on policy implementation allows for, and requires, a better understanding of the organisational dynamics of health systems, which is a critical and often overlooked element of health system functionality (Gilson & Organization 2012). Combined theoretical and empirical work has, for example, aided understanding of the norms and customs influencing the decision-making of health system actors in particular contexts (Riewpaiboon et al. 2005; Sheikh & Porter 2010). A policy analysis that helps to understand the context in which midwife-led care is provided in Bangladesh was therefore conducted. An integrated approach was used that provides a knowledge base for the qualitative part of the case study.

5.2. APPROACH

An approach based on the structure of the framework used by Van Lerberghe et al. (2014) in the Lancet Series on Midwifery was used. This means analysing the steering and resource mobilisation, including the commitment by political leadership and ODA that is sensitive to MNH priorities, followed by an analysis of the access and uptake effective coverage.

A systematic search was undertaken, as described in the previous chapter. This revealed 31 documents that were included in the analysis of the findings. The majority of documents included in the policy analysis were official government or UN documents and reports, followed by journal articles, public websites and conference presentations (Table 12).

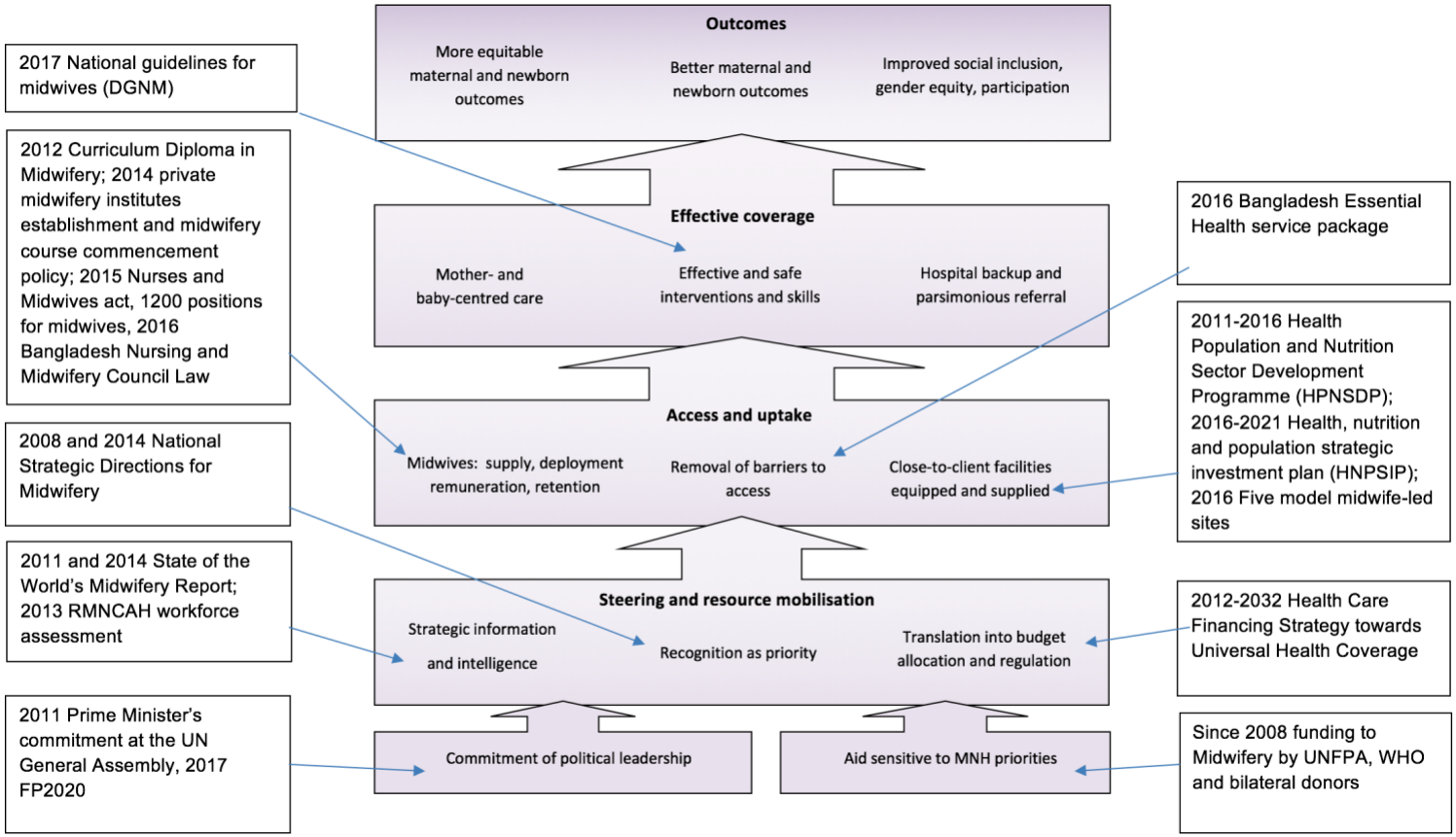
Table 12: Summary of the documents included in the review

Type of document	Number of documents	References
Journal article (research)	8	Bogren et al. 2017, Bogren et al. 2015, Fahim et al. 2015, Hosain 2016, El Arifeen et al. 2014, Khan et al. 2011, Marko Vujicic et al. 2010 Vlassiff et al. 2012
Journal article (perspective)	1	Bogren et al. 2017
Website article	5	UNFPA 2016, WHO 2014, GIZ 2014, SIDA 2018, Jhpiego 2015
Conference presentation	1	Rahman 2019
Government or UN document	11	BDHS 2019, Hasina 2011, UKAid 2020, UNFPA 2019, MoHFW and WHO 2018, BNMC 2012, NIPORT et al. 2016
Global or national report/data	5	UNFPA 2014, WHO 2016, UNFPA 2014, Laski et al. 2013, WHO 2016
Total	31	

5.3. FINDINGS

The findings of the policy and health systems analysis around midwife-led care in Bangladesh are presented according to the framework developed by Van Lerberghe et al. (2014). The structure of the findings is summarized in Figure 14 which serves as an overview to each section of this chapter, At the bottom of Figure 14 is the category **"Steering and resource mobilisation",** which also comprises "Commitment of political leadership", "Aid sensitive MNH priorities", "Strategic information and intelligence", "Recognition as priority" and "Translation into budget allocation and regulation". The next layer in the figure is about **"Access and uptake"** which includes "Midwives: supply, deployment, remuneration and retention", "Removal of barriers to access" and "Close-to-client facilities equipped and supplied". The next layer is about **"Effective coverage"** and comprises "Mother-and baby-centred care", "Effective and safe interventions and skills" and "Hospital backup and parsimonious referral". To the left and right of the figure, the specific policies and relevant documents are listed and connected to the specific areas of the framework.

Figure 14: Policy and health systems analyses around midwife-led care in Bangladesh



5.3.1. STEERING AND RESOURCE MOBILISATION

This section describes how steering and resource mobilisation in Bangladesh has supported the development of midwifery, midwife-led care and maternal and newborn health in general.

COMMITMENT OF POLITICAL LEADERSHIP

The Government of Bangladesh has been publicly committed to midwifery for many years. In the light of the end of the Millennium Development Goals, and being aware of the gaps in maternal and newborn health and wellbeing in Bangladesh, the then Prime Minister of Bangladesh, Sheik Hasina, declared in 2011 during the "Every Women Every Child" session at the 66th General Assembly of the United Nations: "Our aim is to have 3000 trained midwives by 2015, and 7,000 of them in a few more years" (Hasina 2011). This official statement was essential to the development of midwifery as an autonomous profession in Bangladesh (Bogren, Begum & Erlandsson 2017; Bogren et al. 2015). It fostered accountability and helped to align donors to support maternal and child health through midwifery in the country. This policy direction promoted the professionalisation of midwifery by enabling the MoHFW to use the existing nurse-midwifery workforce and upskill them in midwifery to improve maternal and newborn health and wellbeing (Table 13).

Continuous policies and health sector strategies from when Bangladesh was still East-Pakistan underscore the efforts to support midwifery. At that time in 1953, a national family planning programme was initiated. In 1966, the first Nurses and Midwives Act was established. The development of policies continued through the time that Bangladesh became independent (1971/1972). These included creating a second line Ministry in the area of health, the Directorate for Family Planning, having health and nutrition sector plans, health care financing strategies and national maternal health strategies. In 2008 and 2014, midwifery strategies were developed. Both strategies provided directions on how to roll out midwifery in Bangladesh. The version published in 2014 was an update of the previous one.

In 2017, as part of the Family Planning 2020 (FP2020) commitments, Bangladesh committed “to deploy[ing] at least two qualified diploma midwives in each of the Upazila”[15]. Health Complexes to provide midwife-led continuum of quality reproductive health care by 2021. The policy said that midwives would be trained to provide the widest range of family planning methods included in their agreed scope of practice in country. Midwives would also be trained to provide greater attention to first-time young mothers (Bangladesh 2017). At the FP2020 summit, proposed actions were announced:

1. Faculty development in midwifery will be continued and expanded to cover all 38 institutes offering midwifery education. Dedicated midwifery faculty will be deployed. Scope for higher education for midwives will be created and certified midwives will be encouraged to undertake higher studies.
2. Resources in midwifery education institutes will be increased, including skill lab equipment and computer lab accessories. Classroom and accommodation facilities for midwives will be reviewed for their adequacy.
3. In-service training of deployed midwives will be continued. Training will focus on specialised areas, as well as on teaching methodology for the teaching faculty and senior nursing instructors.
4. Vacant midwife positions will be gradually filled with certified diploma midwives.
5. There will be strategic deployment of midwives to ensure comprehensive coverage of midwifery services in priority locations.
6. Mass awareness will be raised for the midwifery profession.
7. Community engagement of midwives under direct supervision from the Director of Nursing and Midwifery Services will be introduced

[15] **Upazila** is an administrative region in Bangladesh. They function as sub-units of districts. Their functionality can be seen to as analogous to a county or a borough in Western countries. Rural Upazilas are further administratively divided into union council areas (Union Parishads).

Table 13: Timeline with key health policies and guidelines towards midwifery in the healthcare sector

Pre 1990	1991-2000	2001-2010	2010-2020
1953 Initiation of Family Planning Programme	1995-2002 Bangladesh Integrated Nutrition; Programme (BINP)	2001 National Strategy for Maternal Health	2008 National Midwifery Strategy
1966 Nurses and Midwives Act (various revisions)	1997 National Plan of Action for Nutrition (NPAN)	2003-2011 Health Nutrition and Population Sector Programme (HNPSP) and National Nutrition Programme (NNP)	2011-2016 Health Population and Nutrition Sector Development Programme (HPNSDP)
1975 Establishment of Directorate of Family Planning	1998 Integrated Management of Childhood Illness (IMCI) strategy	2007 Demand-side Financing Programme – designed to incentivise births in a health facility	2012-2032 Health Care Financing Strategy towards Universal Health Coverage
1975-1990 Maternal and Child Health Multi-sectoral Programme	1998-2003 Health and Population Sector Programme (HPSP)	2007-2012 Accelerating Progress towards Maternal and Neonatal Mortality and Morbidity Reduction	2012 Curriculum Diploma in Midwifery; 2014 establishment of private midwifery institutes and midwifery course commencement policy
1976 Population Policy			2014 National Strategic Directions for Midwifery in Bangladesh (BNMC, DGNM)
1983 Bangladesh Nursing Ordinance			2016-2021 Health, nutrition and population strategic investment plan (HNPSIP)

			2012-2032 The Health Care Financing Strategy
			2016 Bangladesh Nursing and Midwifery Council Law
			2017 National guidelines for midwives (DGNM)

In summary, political leadership and commitment towards strengthening midwifery in Bangladesh has been significant and this has led to investments in education, training, and deployment of midwives.

AID SENSITIVE TO MATERNAL AND NEWBORN HEALTH PRIORITIES

As described earlier, ODA is an important element of the health system financing in Bangladesh and as such, impacts on maternal and newborn health and midwifery. In the country, ODA is pooled around a multi-donor basket fund that supports the execution of services in the health care sector by the Government of Bangladesh based on their priorities. As Bangladesh did not achieve MDG5 (maternal health), donors were receptive to maternal and newborn health priorities and support this area through large development programmes.

An assessment conducted in 2013 by BRAC University Bangladesh, and published in the State of the World's Midwifery Report 2014 stated that a targeted intervention such as the BRAC midwifery programme to develop a midwifery workforce in Bangladesh would have a similar impact to that of child immunisation in terms of lives and life years saved and could yield a 16-fold return on investment (UNFPA 2014). This provided a strong argument for investment into midwifery, especially in Bangladesh. Several ODA donors, such as the UNFPA and WHO, as well as bilateral donors such as Canada, Germany, Sweden and the UK have aligned their support to support midwifery in various ways, mainly in financial and technical aspects (GIZ 2014; SIDA 2018; Star 2016; UKAid 2020; UNFPA 2019). Based on the International Confederation of Midwives' three pillars of midwifery, education, regulation and association, ODA has

supported government and non-government actors in these areas to focus on education, with the common goal being the Prime Minister's commitment at the UN General Assembly in 2011 (Bogren et al. 2015).

For Bangladesh, the previous investment in midwifery and in particular, midwife-led units, has not yet been calculated. Investment in a dedicated midwifery cadre that includes the scaling-up of support for a dedicated midwifery workforce, institutional strengthening and upskilling of existing nurse-midwives and auxiliary midwives and retention was calculated for a period of four years (2016-2020) and totals $US138,694,078.

TRANSLATION INTO BUDGET ALLOCATION AND REGULATION

The public health care sector in Bangladesh is underfunded and expenditure of funds is hindered by inadequacy of allocation, inequity of distribution, and inefficiency of utilisation (Fahim et al. 2019). In comparison to out-of-pocket (OOP) expenditure and government funds, aid plays only a marginal role in the area of reproductive maternal, newborn, child and adolescent health.

Bangladesh spends around $US696 million on Reproductive, Maternal and Newborn, and Child Health (RMNCH), which is around 20% of total Current Health Expenditure. The Current Health Expenditure for 2012 in reproductive health was estimated to be $US249 million (Hossain 2016). This is around 7.1% of total Current Health Expenditure. Reproductive healthcare services are primarily provided by ambulatory service providers (outpatient centres), at 58%, followed by general hospitals (36%). Health financing schemes offered by the Government of Bangladesh are the largest funding source for reproductive healthcare (62%). Reproductive healthcare financed by development partners and implemented by NGOs also plays a key role. It accounts for 24% of total Current Health Expenditure on reproductive health. A functional breakdown of the reproductive healthcare services shows that 92% of the expenditures are made in preventive care.

In 2012, $US259 million was spent on Maternal and Newborn care in Bangladesh. This constitutes around 7.5% of total Current Health Expenditure. A further breakdown of

Maternal and Newborn Current Health Expenditure by Financing Schemes shows that the government financing covers around 49% of total Maternal and Newborn expenditure, followed by household and development partner financing at 20% each. As a provider of Maternal and Newborn services, general hospitals are the largest provider, accounting for almost 69% of total Maternal and Newborn expenditure. Maternal and Newborn services include inpatient and outpatient curative care, pharmaceuticals and other medical non-durable goods and preventive care. A functional breakdown of the Maternal and Newborn healthcare services shows that a major portion of the expenditure (68.4%) are made on preventive care, followed by inpatient curative care (28%).

Expenditure on Child Healthcare for 2012 is estimated at around $US162 million, which translates to 5.4% of total Current Health Expenditure. Compared to the Financing Schemes for reproductive and maternal and newborn healthcare expenditure, household out-of-pocket (OOP) expenditure on child health is significantly higher. In 2012, household financing schemes funded almost 73% of Child Healthcare - Current Health Expenditure. The main reason for shifting financing responsibility from government to households in child health care is due to the high level of outlay on pharmaceutical drugs. A functional breakdown of the child health healthcare services shows that almost 66% of child health care expenditures are spent on pharmaceuticals.

In 2007, household OOP payments on health constituted over 86% of private financing of health in Bangladesh (National Institute of Population Research et al. 2011). According to the health care financing strategy 2012-2032 (Unit & Ministry of Health & Family Welfare 2012), OOP payments decreased in recent years to 64%. These OOP expenses can still result in a loss of productive assets (selling items to pay for medicines) and threaten economic survival, especially in vulnerable populations such as women, children and adolescents.

To cope with the challenges and increase financial protection for the entire population and decrease out-of-pocket payments at point of service, the following three strategic objectives were proposed in 2012 (Unit & Ministry of Health & Family Welfare 2012):

- Generate more resources for effective health services
- Improve equity and increase health care access, especially for the poor and vulnerable
- Enhance efficiency in resource allocation and utilisation

In summary, it is evident that improvements in Reproductive, Maternal and Newborn, and Child Health (RMNCH) care are a priority policy objective of the Government of Bangladesh. This political will has been translated into strategies that initiated the introduction of midwifery. The government has made considerable investment in health, targeting improvements of maternal and reproductive health as part of its commitment to achieve MDG 5 (maternal health). Donors were receptive to investing in the government's priorities on RMNCH. This promoted the development of policies that were supported with substantial investment in the field. Estimates on Reproductive, Maternal and Newborn and Child Health expenditures are relevant to policy, as the government can objectively assess the returns from such investments in terms of health performance indicators. What is lacking behind in Bangladesh are strategies that address the high OOP payments from the population. Especially for parts of the population from lower wealth quintiles, OOP payments will threaten survival. If Bangladesh wants to see women, newborns, children and adolescents not only survive but thrive, policies and investment in the RMNCH sector are essential. One of these policy priorities could be to further invest in midwifery and to include midwife-led care in the essential benefit package which is sufficiently funded.

5.3.2. ACCESS AND UPTAKE

This section analyses the development of midwives' supply, deployment and retention and shows how barriers to care have been removed in Bangladesh. It sheds a light on progress and shortfalls in the effective provision of close-to-client facilities, as these are often poorly equipped and supplied.

MIDWIVES: SUPPLY, DEPLOYMENT. REMUNERATION, RETENTION

Bangladesh is one of the countries in the South-East Asia region that has a severe shortage of health workforce with a density of 7.4 (doctor, nurse and midwife) per 10,000 population. This is low compared to the Global Human Resources for Health Strategy (2016), in which the threshold of doctor, nurse and midwife categories is 44.5 per 10,000 people. In terms of the skill mix, Bangladesh has a reverse ratio of doctors, nurses and paramedics (1: 0.51: 0.023) against the international standard (1: 3: 5). In Bangladesh, medical doctors have dominated maternity care and have always previously been in supervisory roles to nurse-midwives (World Health Organization 2016a).

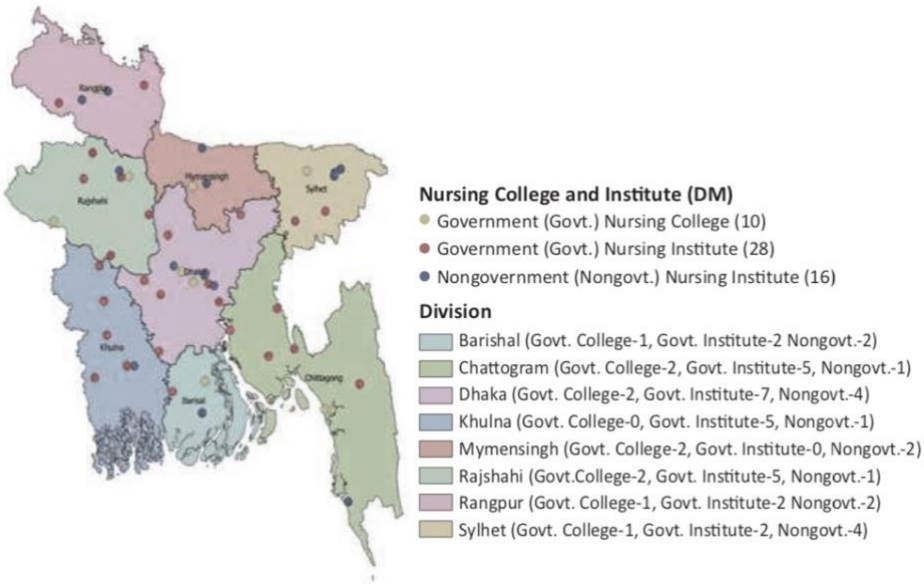
Midwife-led care was introduced in Bangladesh at the beginning of 2016. Before that, nurse-midwives or auxiliary midwives were placed in all levels of the health care system (see Annex 18). In 2009, Bangladesh started to upskill nurse-midwives who had trained as midwives for one year within their three or four-year nurse-midwifery education programme in an additional six-month course to become certified midwives (United Nations Population Fund 2014). This made a total of 18 months midwifery post-nursing, which meets international midwifery education standards (International Confederation of Midwives 2013). At the same time, a long-term strategy was embarked upon to create a new cadre of direct-entry diploma midwives. The three year diploma programme started in the academic year of 2012/2013 and the first graduates entered the job-market in 2016 (United Nations Population Fund 2016; World Health Organization 2014a).

According to a survey conducted by the MoHFW, 82% of all health professional educational institutions belonged to the private/non-government sector and the remaining 18% belonged to the public/government sector (MoHFW & World Health Organization 2018). Within the Diploma of Midwifery programme, this ratio is reversed: about 80% of the nursing institutes and nursing colleges that offered the programme were part of the government sector and only 20% were from the private (or NGO) sector. 54 institutions offered the Diploma in Midwifery degree, of which 10 were

colleges and 44 were institutes. While the schools and institutes that offer a Diploma in Midwifery programme are scattered around the country, there is a concentration in the Dhaka region (n=13) (Figure 15).

In terms of numbers in the Diploma in Midwifery, 3402 were admitted, 1190 graduated and 1187 became registered for professional practice from 2013–2016. Of the 1535 student positions available, only 1159 student positions were filled, indicating that about 24% student positions remained vacant or unutilised. More than half of the private sector student positions remained vacant.

Figure 15: Geographical distribution of the number of institutions offering the Diploma in Midwifery in Bangladesh (MoHFW & World Health Organization 2018)



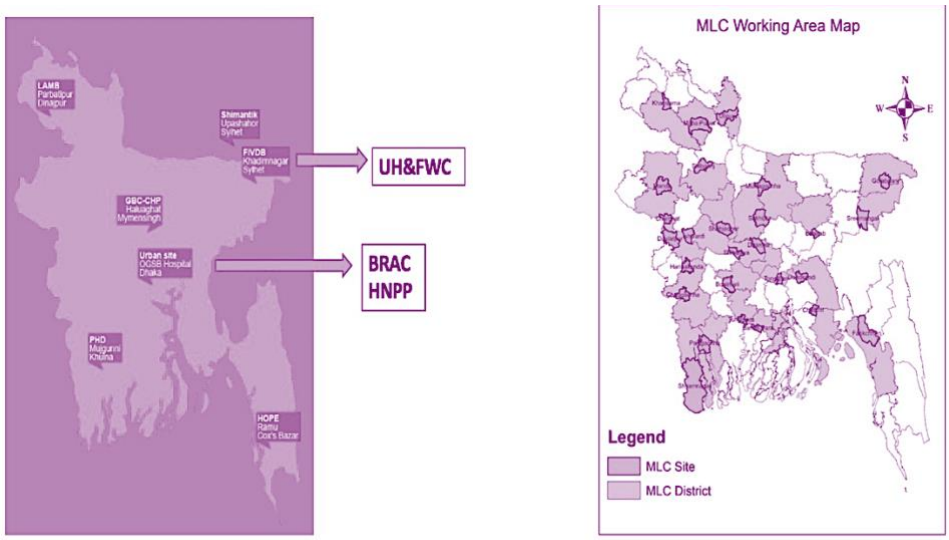
Along with the revised Nurses and Midwives Act and separate job descriptions for nurses and midwives, the country created 1200 positions for midwives in December 2015 and July 2016. These positions are primarily in the Upazila Health Centre (Figure 16), in which mainly certified midwives (nurse-midwives who have undertaken a six-month post-basic midwifery programme) are placed. Initially, 20 of the direct-entry Diploma midwives were positioned in pairs in the Union Health and Family Welfare Centres.

Midwives provide antenatal, labour and birth and postpartum care for women, including their newborns and families in normal pregnancies, births and in post-partum/natal periods (BNMC 2012). At the Union Health and Family Welfare Centres, midwives also provide family planning services and support programmes to raise community awareness.

In 2016, there were five model sites that focus on the implementation of midwife-led care at Upazila Health Complexes which are supported by UNFPA and JHPIEGO (Jhpiego 2015). By 2019, according to Rahman (2019), seven private (NGO) midwife-led units and 27 governmental midwife-led units existed (Figure 16). The government has provided standard operating procedures for the midwife-led units and their vision is to scale up the sites to 38. An operational framework for the BRAC Maternity Centre midwife-led care centre exists as well. Its objectives are:

- To ensure the appropriate women are selected for intrapartum midwife-led care services.
- To provide the midwife with guidance on appropriate transfer and emergency management to ensure safety.
- To provide respectful maternity care to the pregnant women.
- To promote the practice of evidence-based midwifery care.

Figure 16: Private (n=7) and public (n=27) midwife-led units in Bangladesh (Rahman 2019)



In a reproductive, maternal, newborn health workforce assessment conducted in Bangladesh, depending on different supply and attrition rates, between 18,400 and 25,000 diploma midwives are needed by 2029 to meet the needs in Bangladesh (Chilvers, Look & Hoope-Bender 2014; Laski et al. 2013). As of December 2020, Bangladesh has 4396 Diploma Midwifery graduates (BNMC 2020). To reach the calculated target to cover the needs of the population, Bangladesh will need to speed up the formation of Diploma midwives. One way would be to fill the vacant student positions every year. Another would be to expand the capacities in the educational programmes. In general, intensive investment in educational programmes of midwives will be central to being able to meet the demands.

REMOVAL OF BARRIERS TO ACCESS

In Bangladesh, maldistribution across levels of care, roles and counties remains a major challenge. Complete data is also not available on the private sector, making service and workforce planning more challenging (Marko Vujicic et al. 2010). The maldistribution was confirmed by the State of the World's Midwifery Report (UNFPA 2014), which showed an urban-rural gap. The majority of women were unable to

access a skilled attendant at birth compared to urban areas, where the majority of women had access to a skilled attendant at birth. Similar results appeared in the reproductive, maternal, newborn and child health assessment: “Dhaka has only 9% of all pregnancies in Bangladesh, but 40% to 50% of the nurse-midwives and doctors (including general practitioners and specialists). In contrast, in districts with fewer pregnancies per km^2, these cadres are in short supply. For instance, the districts that together account for 60% of all pregnancies have only 40% of doctors and about 48% of the nurse-midwives” (Laski et al. 2013, p. 18). Barriers to access quality maternal and newborn health care services in Bangladesh are mainly rooted in socio-economic and regional differences, which will be explained in the following section.

The Government of Bangladesh‘s Health, Population and Nutrition Sector Development Program 2011-2016 has defined the “Essential Service Delivery” Package. This package is defined at a high level and includes child health care; safe motherhood; family planning; menstrual regulation; post-abortion care and management of sexually transmitted infections; communicable diseases (including tuberculosis, malaria, others); emerging non-communicable diseases; limited curative care and behaviour change communication; and nutrition. Maternal and newborns’ health and wider SRHR services are included in this package, which also includes these services in the national financial protection scheme. The Government of Bangladesh is also implementing a program called the demand-side financing scheme, which provides vouchers to pregnant women in order to increase use of safe motherhood services. The scheme is supposed to cover the poor, but many poor families are not reached (BRAC 2012). This scheme contributes to removing barriers to access. The scheme should be implemented across the country and facilities should be staffed, equipped and supplied to offer these services. However, several issues exist which negatively impact on access and uptake, as will be described in the next section.

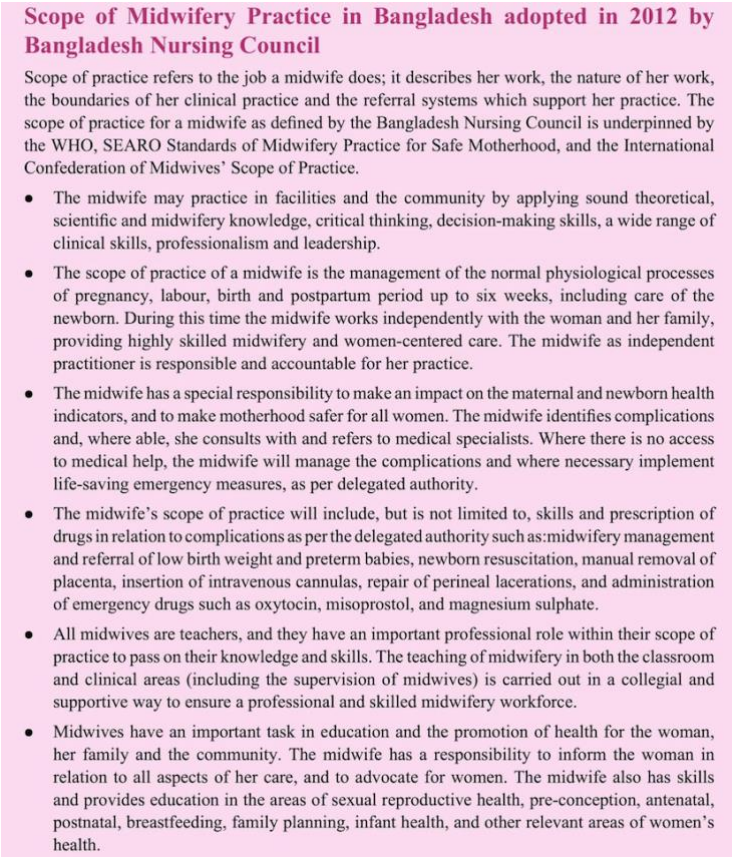
CLOSE-TO-CLIENT-FACILITIES, EQUIPPED AND SUPPLIED

In Bangladesh, an urban-rural gap still remains one of the main barriers to access and uptake of quality maternal and newborn care. One of the indicators that is closely linked with maternal and newborn healthcare coverage is the availability of basic and comprehensive emergency obstetric care. Healthcare centres that offer these essential services for mothers and newborns are scattered around the country and there are gaps depending on geography.

In a survey on health facilities in Bangladesh conducted in 2014 (National Institute of Population Research, Training , et al. 2016), only 17% of facilities that provide labour and birth services can be considered Basic Emergency Obstetric and Neonatal Care (BEmONC) facilities, i.e., the facilities offer normal labour and birth care and have performed all seven signal functions (treatments) for emergency obstetric care in the three months prior to the survey. Only 6% of the facilities performed all nine signal functions for emergency obstetric care and can be considered Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) facilities. According to this survey, many health facilities lack medicines and supplies (for example, only 71% of the facilities had gloves) and only a small number of staff are adequately trained to provide newborn resuscitation, active management of the third stage of labour (AMTSL) and integrated management of pregnancy and child birth (IMPAC). Again, although policies exist, such as the health sector programme, due to a severe funding gap in the health sector the programme is not being implemented properly. Existing health sector and workforce strategies need a costed budget plan and sufficient resources to implement them

A midwifery scope of practice exists in Bangladesh. The midwifery scope of practice, as set by the Bangladesh Nursing and Midwifery Council in 2012, also includes the administration of drugs such as oxytocin, misoprostol and magnesium sulphate in emergencies (Figure 17).

Figure 17: Scope of Midwifery in Bangladesh



Scope of Midwifery Practice in Bangladesh adopted in 2012 by Bangladesh Nursing Council

Scope of practice refers to the job a midwife does; it describes her work, the nature of her work, the boundaries of her clinical practice and the referral systems which support her practice. The scope of practice for a midwife as defined by the Bangladesh Nursing Council is underpinned by the WHO, SEARO Standards of Midwifery Practice for Safe Motherhood, and the International Confederation of Midwives' Scope of Practice.

- The midwife may practice in facilities and the community by applying sound theoretical, scientific and midwifery knowledge, critical thinking, decision-making skills, a wide range of clinical skills, professionalism and leadership.
- The scope of practice of a midwife is the management of the normal physiological processes of pregnancy, labour, birth and postpartum period up to six weeks, including care of the newborn. During this time the midwife works independently with the woman and her family, providing highly skilled midwifery and women-centered care. The midwife as independent practitioner is responsible and accountable for her practice.
- The midwife has a special responsibility to make an impact on the maternal and newborn health indicators, and to make motherhood safer for all women. The midwife identifies complications and, where able, she consults with and refers to medical specialists. Where there is no access to medical help, the midwife will manage the complications and where necessary implement life-saving emergency measures, as per delegated authority.
- The midwife's scope of practice will include, but is not limited to, skills and prescription of drugs in relation to complications as per the delegated authority such as:midwifery management and referral of low birth weight and preterm babies, newborn resuscitation, manual removal of placenta, insertion of intravenous cannulas, repair of perineal lacerations, and administration of emergency drugs such as oxytocin, misoprostol, and magnesium sulphate.
- All midwives are teachers, and they have an important professional role within their scope of practice to pass on their knowledge and skills. The teaching of midwifery in both the classroom and clinical areas (including the supervision of midwives) is carried out in a collegial and supportive way to ensure a professional and skilled midwifery workforce.
- Midwives have an important task in education and the promotion of health for the woman, her family and the community. The midwife has a responsibility to inform the woman in relation to all aspects of her care, and to advocate for women. The midwife also has skills and provides education in the areas of sexual reproductive health, pre-conception, antenatal, postnatal, breastfeeding, family planning, infant health, and other relevant areas of women's health.

In summary, access and uptake of essential services in reproductive, maternal and newborn health in Bangladesh has led to policies relating to the education and training of midwives and their deployment. Workforce planning has revealed a need to invest in the midwifery workforce, but the current rate of training is too slow to reach the 2030 target. The government sector needs to step up and promote midwifery education, but should also encourage the private sector to join forces. Midwife-led models of care are spreading across the country in both the public and private sector and seem to be the right way to increase access to care, especially in the rural areas. To further close the urban-rural gap, investments at the Union level are needed to offer midwife-led care which is sufficiently supported with competent midwives, essential medicines, referral mechanisms, all of which should be included in the essential service package.

5.3.4. EFFECTIVE COVERAGE

In this section, 'effective coverage' is described with a selection of maternal and newborn health indicators that contribute to the outcomes relating to maternal and newborn mortality. Effective coverage, according to Marsh et al. (2020), plays an essential role to measure the quality of maternal, newborn, child, adolescent health care and nutrition interventions based on the needs of a population.

Coverage indicators for some essential interventions can be measured accurately through household surveys and be used to track progress in maternal, newborn and child health. These kinds of household surveys are conducted on a regular basis. Table 16 shows factors that influenced newborn and maternal mortality declines in Bangladesh in recent decades that are related to issues around effective coverage.

Between the 2007 BDHS and the 2017-18 BDHS, the proportion of women having facility-based births increased from 15% to 50%. This has been possible due to a rapid increase in births in private health facilities. Births in private facilities increased from 22% to 32%, in public facilities from 13% to 14%, and in NGO facilities from 2% to 4%. As expected, but unfortunately, the rise in facility-based births has been associated with the increase of the caesarean section rate. One-third of all births were by caesarean section (Table 14). Births by caesarean section have continued to increase, from 8% in 2007 to 23% in 2014, and to 33% in 2017. In 2017, 84% of births in private facilities were by caesarean section, which shows that private facilities are responsible for the steep rise in caesarean section rates. In studies from other low- and middle-income countries, the introduction or strengthening of midwife-led care was regarded as an intervention to de-medicalise birth and to reduce unnecessary caesarean sections such as in Iran (Ardakani et al. 2020)

The proportion of women giving birth with skilled attendants increased in the last two decades from 12% in 2000 to 42% in 2014 and, according to the latest DHS, to 53% in 2017-2018. Maternity care from an educated and trained provider during labour and birth is critical for the reduction of maternal and neonatal mortality. Slightly more than half of the births in the three years preceding the Bangladesh maternal mortality survey

were attended by trained personnel, i.e. a qualified doctor, nurse or midwife, family welfare visitor (FWV) or community skilled birth attendant (CSBA) (Table 14). Although the number of skilled birth attendants has increased in Bangladesh in recent years, little is known whether these providers meet the 2018 definition of skilled health personnel (competent health-care professionals) providing care during childbirth (often referred to as “skilled birth attendants” or SBAs) set by the WHO (2018). This has been evident in other low- and middle-income countries in the past (Harvey et al. 2007). Another 35% of the births in Bangladesh were assisted by dais, or untrained traditional birth attendants, 10% by trained traditional birth attendants, and 1% by relatives and friends. The 4th HPNSP aim is to have 65% of births being assisted by trained birth attendants by 2022.

The percentage of women receiving four antenatal care visits increased similarly from 11% in 2000 to 31% in 2014 and to 47% in 2017-2018. The coverage of postnatal visits of mothers and newborns within two days of birth increased from 16% mother/13% newborn in 2004 to 34% mother/32% newborn in 2014 and 52% mother/52% newborn in 2017-2018. However, this figure does not provide information about the number of visits (at least one), nor does it reflect quality of care (Table 14).

Abortion-related maternal death decreased from 5% in 2001 to 1% in 2010. The government’s definition of “menstrual regulation” is a procedure to establish non-pregnancy that is performed by a trained provider in a facility and within the permissible number of weeks of gestation (according to the type of provider). Although figures show that access to menstrual regulation has improved and an estimated 653,000 women had menstrual regulation procedures performed in Bangladesh, there were still nearly as many cases (647,000) of induced abortions, the vast majority being performed in unsafe conditions (Vlassoff et al. 2012). An estimated 26% of women seeking menstrual regulation services were rejected by the health care providers. The most common reasons for not offering menstrual regulation services were religious or social reasons (43%), followed by beliefs related to one’s own health (37%) and a dislike of menstrual regulation (24%). Only a small proportion of healthcare providers mentioned insufficient equipment (12%), lack of support staff (10%), lack of training

(8%), lack of space at facility (8%) and other reasons (6%), according to Vlassoff et al. (2012).

In summary, indicators of effective coverage in Bangladesh improved. While facility-based births and skilled attendance at births increased in recent decades, they did not always contribute to the provision of quality care. The increase in facility-based births also increased the number of (unnecessary) caesarean sections, especially in the private facilities, increasing the cost of care but not the outcomes in maternal and newborn health. Policies that regulate the excessive use of medical interventions, set standards and control quality are absent. A similar example is the increase in skilled attendants at birth. While the coverage increased, it is unclear whether these providers are actually competent in providing quality maternal and newborn care. Here, policies that set standards in education and continuous professional development are missing, as are mechanisms to control the quality of care these professionals provide through professional regulatory mechanisms. Aside from gaps in standards of education and provision of care, policies and programmes also need to address social and cultural norms that prevent health care providers from offering essential services, such as the provision of safe abortions.

Table 14: Factors influencing mortality declines, Bangladesh 2000-2019 (Khan et al. 2011; National Institute of Population Research and Training, Education & Family Welfare Division Ministry of Health and Family Welfare Dhaka 2019; National Institute of Population Research et al. 2011; National Institute of Population Research et al. 2016; National Institute of Population Research et al. 2009)

	Factors influencing child mortality declines	Factors influencing maternal mortality declines
Improved coverage of effective interventions to prevent or treat the most important causes of maternal and childhood deaths	•Improved vaccination coverage: full vaccination of children 12-23 months increased from 60% in 2000 to 84% in 2014, 89% in 2017-2018 •Improved management of diarrhoea: children with diarrhoea receiving ORT (ORS or RHF) increased from 74% in 2000 to 84% in 2014, 85% in 2017-2018 •Improved care seeking for and management of pneumonia in under-fives: care seeking for symptoms of ARI Increased from 28% in 2000 to 42% in 2014 •Antibiotic use: In 2014 34% of children under 5 with symptoms of ARI received antibiotics •Vitamin A supplementation: rose from 49% in 1994 to 62% in 2014	•Family planning programme: increased contraceptive prevalence and fertility decline (CPR: 40% in 1990, 62% in 2014 and 62% 2017-2018; TFR: 5 births per woman in 1990 to 2.3 in 2014 and 2.3 in 2017-2018) •Increased availability, utilisation and access to maternal health interventions: •CEmOC services: treatment from health facility for maternal complications: 16% in 2001 to 29% in 2010 •Caesarean sections: 2% 2000, 23% in 2014, 33% in 2017-2018 •Menstrual regulation: Abortion-related maternal deaths: 5% in 2001 to 1% in 2010 •Use of MMR: 5% in 2000 to 9% in 2011 •Facility delivery: 8% in 2000, 37% in 2014, 50% in 2017-2018

	Factors influencing child mortality declines	Factors influencing maternal mortality declines
	•Improved nutrition: underweight children: 43% in 2004, to 33% in 2014, to 31% in 2017-2018 Newborn care interventions: •Improved breastfeeding practices: exclusive + within 1 hour of delivery increased from 9% in 1994 to 17% in 2000 and 57% in 2014 and 69% in 2017-2018 •Coverage of essential newborn care (ENC) between 2007 and 2014: dried within 5 minutes: 6% to 67% 2015 and 63% in 2017-2018. Bathed 72hrs or more after birth: 17% in 2000 to 34% in 2014, 46% in 2017-2018, Nothing on the stump or chlorhexidine if indicated: 56% to 48% •Neonatal tetanus: mothers protected during last birth rose from 66% in 1994 to 90% in 2011	•Skilled birth attendance: 12% in 2000, 42% in 2014, 53% in 2017-2018 •4 + ANC: 11% in 2000, 31% in 2014, 47% in 2017-2018 •PNC within 2 days of delivery mothers: 16% in 2004 to 34% in 2014 and 52% in 2017-2018 •PNC within 2 days of delivery newborns: 13% in 2004 to 32% in 2014 to 52% in 2017-2018
Economic, environmental and educational improvements	•Female education (literacy among 15-24 year-old girls: 38% in 1991 to 80% in 2011) •Female participation in parliament increased from 12% in 1991 to 20% in 2010 •Poverty reduction (57% in 1991-2 to 32% in 2010) •Proportion of population below national poverty line (70% in 1992 to 43% in 2010) •Improved communication networks (road and information & communication technology) •Access to clean water (76% in 1990 to 83% in 2011) and improved sanitation (38% in 1990 to 55% in 2011) •Growth of private sector	

5.4. SUMMARY OF ANALYSIS

This policy and health systems analysis paints a multi-faceted picture of the situation and contributing factors for midwife-led care in Bangladesh (Figure 18). Since 2008, funding for midwifery by international organisations and bilateral donors has contributed to aid sensitive to MNH priorities and which contributed to the resource mobilisation. Several commitments by the Prime Minister at the UN General Assembly as part of the "Every Women Every Child" campaign of the Director General of the UN and commitments around Family Planning 2020 contributed towards the steering towards midwife-led care. These commitments have been laid a strong foundation for improving maternal, newborn, child and adolescent health. A wealth of evidence is available to support the need and to ensure that policies and planning are based on solid analysis. The two State of the World's Midwifery Reports in 2011 and 2014 and the Reproductive Maternal, Newborn, Child and Adolescent Workforce Assessment which was conducted in 2013, for example, served as strategic information pieces, highlighting the need to invest in workforce development and specifically in midwifery. Good plans and guidance documents are available. For example, both strategic directions in midwifery from 2008 and the updated version from 2014 were key for steering the midwifery programme. The health care financing strategy 2012-2013 provided the framework for including midwifery as part of maternal and newborn health within the universal health coverage investment case. However, none of these efforts were sufficient to remove barriers to access, increase effective coverage and ultimately improve outcomes for mothers, newborns, children and adolescents.

Bangladesh's health system seems to be paralysed by a shortfall in the number of health professionals (especially nurses and midwives), a dearth of public health and policy expertise and distributional biases towards urban areas. Some important developments in the area of midwifery have been made by developing the educational pathways for midwives. and by introducing an updated Nurses and Midwives Act, which has allowed the Nursing and Midwifery Council to provide licensing and create a separate register for midwives. These important milestones in education and the

regulation of midwives were important for establishing an autonomous profession. The first posts for midwives have been created in the public sector. This laid the foundation for the establishment of midwife-led centres in the public and private sector. However, these centres are often not surrounded by functioning basic and especially comprehensive emergency obstetric and newborn health care facilities that would be able to function as referral centres for midwife-led units.

A severe gap remains in facilities that are close to clients, equipped and supplied. Despite this, however, effective coverage has improved, but further efforts are still needed because increased coverage does not naturally increase quality of care, as already outlined in the example for effective coverage. Several health sector programmes and a health financing strategy were developed that helped to ensure that care provided by midwives, such as antenatal care, care during and after childbirth, family planning counselling and others have been included in the essential package for health services, which usually should be free of cost for the service users. However, they have not reached the most marginalised in the Bangladeshi society, such as the people living in poverty, and people living in remote rural areas of the country. One major game changer would be to tax the income of a growing group of wealthy Bangladeshi citizens. The proceeds of this could be used to increase domestic resource mobilisation for sexual and reproductive health, or to introduce health insurance schemes that are affordable to those who have not yet been reached.

National guidelines for midwives provide the foundation for practical arrangements for midwife-led centres. However, policies around mother and baby friendly care do not exist. Furthermore, guidelines and programmes on respectful maternity care are absent. A significant concern that needs urgent attention at a policy and health systems level is the significant rise in caesarean section rates, especially in the private sector. This is an unintended consequence of the policy commitment to facility-based births, but also highlights that the health care sector still has gaps in the provision of quality care and that other factors are driving practice, such as financial rewards.

5.5. DISCUSSION

This policy and systems analysis of maternal and newborn health in Bangladesh with a focus on midwifery provided an overview of elements of progress and gaps in the health care systems and in areas that are not directly related to it. The application of the analytical framework developed by Van Lerberghe et al. (2014) was used to generate an understanding of the underlying policy and health systems issues in relation to midwifery and midwife-led care.

Bangladesh has invested in health and specifically in a pluralistic reform since the 1970s.The success in health sector reform in Bangladesh has not only focussed on governmental structures, but has also allowed non-governmental organisations such as the world's biggest NGO, BRAC, and private actors to flourish (Ahmed & French 2006; Das & Horton 2013). BRAC, with the support of donors, has played a key role in the development of midwifery and midwife-led care in Bangladesh (Bhuiya, Chowdhury & Zahiduzzaman 2015). BRAC has also started the first midwifery education programme and the first midwife-led centres in the private sector. The multiplicity of health actors did not create confusion. Instead, it created positive effects thanks to its pluralism. The programmes in both the private and public sector show how midwifery education and the provision of midwife-led care can be rolled out differently, with both strengths and weaknesses.

The Maternal and Child Health multi-sectoral programme that started in 1975 can be seen as the earliest policy that not only targeted maternal and child health, but laid the foundation for a multi-sectoral approach to health. Bangladesh was a unique case at that point in time. It did have an internationally recognised family planning programme, with positive impacts on the health of women and their children, but it also had several development programmes that went far beyond family planning. Microcredit and education for girls were two that had been successful in many communities and had received international recognition for their success, factors that were outlined in the description of the setting in Chapter 4.

Policies that were developed at the end of the 1990s, especially the 1998-2003 Health and Population Sector Programme (HPSP), were boosted by the International Conference on Population and Development (ICPD) that took place in Cairo in 1994 (Pelon et al. 1999). The effects of these efforts to improve sexual and reproductive health of the population can also be seen in the increased contraceptive prevalence and fertility decline from the 1990s to the year 2000 and up to recent years, as described in Table 16. (CPR: 40% in 1990, 62% in 2014 and 62% 2017-2018; TFR: 5 births per woman in 1990 to 2.3 in 2014 and 2.3 in 2017-2018).

In the light of the ending of the Millennium Development Goals and the foreseeable result that Bangladesh would not be able to achieve MDG 5 (Das & Horton 2013), Bangladesh and the donor and UN community invested in effective coverage in maternal and newborn health and also in the development of midwives. Sheikh Hasina's strong message to develop and deploy 3000 midwives by 2015 at the UN general assembly as part of the "Every Woman Every Child Campaign", together with commitments to invest in primary health care, can be seen a push towards midwife-led care from the highest political level. With a focus on midwives' education and strong advocacy for midwifery as an autonomous profession, separate from nursing, this effort to upscaling the workforce began. In this respect, there are parallels to the developments in Cambodia which strengthened midwifery and midwife-led care around the same time (Ith, Dawson & Homer 2012; Van Lerberghe et al. 2014). Investments in basic and comprehensive emergency obstetric and newborn care also provided at Union (primary) and Upazila (secondary) health care level formed the basis for midwife-led units, which were first established in 2016.

All the measures that were identified in this analysis to strengthen "steering and resource allocation", "access and uptake" and "effective coverage" need to be operationalized in order to be successful. The recently published operational standards by Stevens and Alonso (2021) consisting of 43 standards organized into 3 domains might provide a framework to move this forward.

5.6. CONCLUSION

Midwife-led care is a new concept in Bangladesh. Several factors relating to health policy strengthening and support have led to the creation of an environment which enabled the introduction of this model of care. Specific to Bangladesh is a multi-sectoral approach for improving maternal and newborn health. The introduction of a professional cadre, regulation for an autonomous profession and the creation of midwifery positions in primary and secondary facilities were the most important steps towards initiating a midwife-led model of care.

Midwife-led care alone will not be sufficient to improve maternal and child health and wellbeing. Firstly, further efforts in areas outside the health sector, as described earlier in the settings chapter, such as girls' education, women's employment, the reduction of poverty and improvements in the wider socio-economic sector have to be made. Cultural factors, such as the concept of purdah, need to be addressed. Secondly, investment needs to be made in the health care sector, especially in terms of coverage and quality of care. In particular, investments in the availability and accessibility of maternal and newborn health care are needed to create a supportive environment for midwife-led units. Bangladesh will need to scale up midwifery education and deployment and retention measures in midwifery to be able to expand this model of care to be able to reach effective coverage.

The findings and conclusions of this chapter will enrich the findings from the case study on the implementation of midwife-led care in Bangladesh, which will be presented in the next chapter.

CHAPTER 6. PHASE TWO: CASE STUDY – THE PROVISION OF MIDWIFE-LED CARE IN BANGLADESH

6.1. INTRODUCTION

The analysis of the case study has identified four themes (Figure 18). Each theme includes sub-themes that express how midwife-led care in Bangladesh is provided. The themes are based on the QMNC framework (Renfrew et al. 2014) but do not follow the categories strictly, as some issues overlapped and required reframing based on the themes and sub-themes that emerged from the analysis. The first theme, "Exploring the heart and soul of midwife-led care in Bangladesh", draws mainly on the QMNC categories of "values" and philosophy".

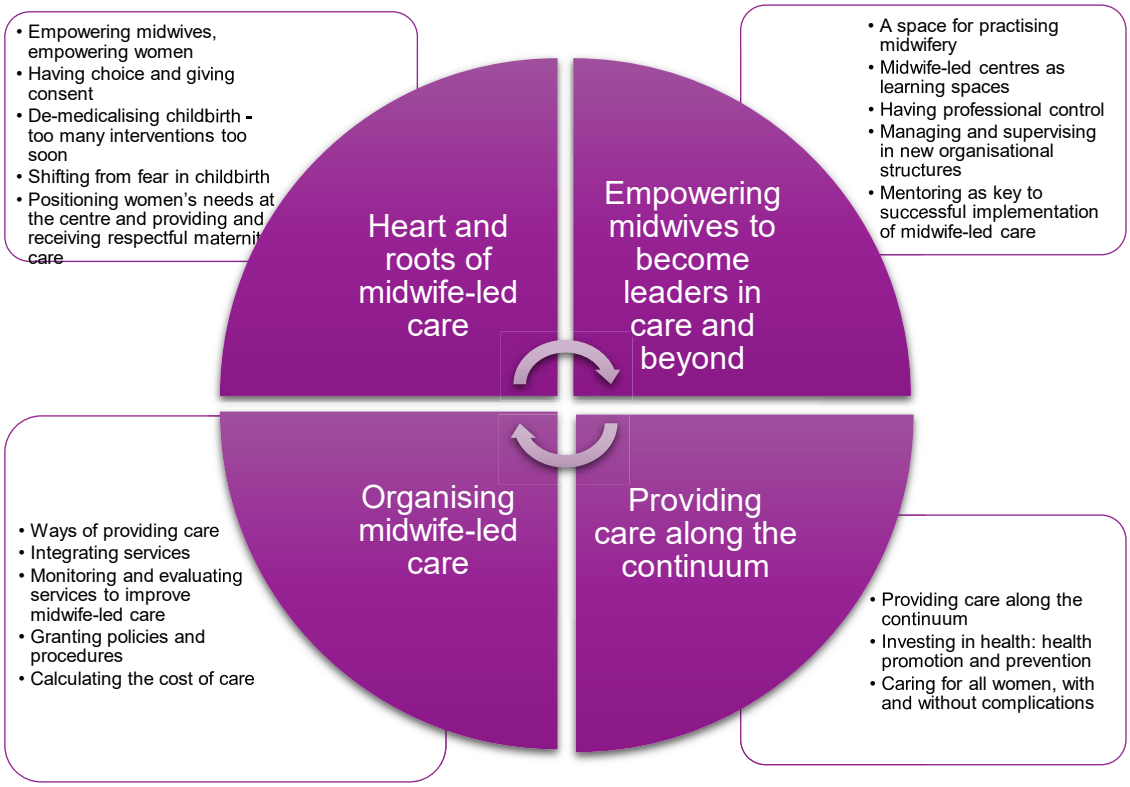
In the first section that presents the theme "exploring the heart and soul of midwife-led care in Bangladesh", issues relating to values and philosophy are described. The theme is based on "Philosophy" from the QMNC framework and contains issues around optimising processes and strengthening women's capabilities. The midwife-led model of care reflects these issues within the categories "choice and consent", "human rights in childbirth", "reducing fear in childbirth" and "empowering women". This theme also exemplifies "Values" from the QMNC framework and includes issues relating to respect, communication, community knowledge and understanding, and care tailored to women's needs. The Bangladeshi model of midwife-led care is described with the categories "woman-centred care", respectful maternity care and the "care around women's needs".

The next theme, "Empowering midwives to become leaders in care and beyond", is linked to the QMNC category "Care Providers". Based on the QMNC framework, this includes issues that reflect midwives' knowledge and skills, their competencies and the division of roles and responsibilities. The sub-themes from my findings in relation to these issues include "practising midwifery", midwife-led centres as "learning spaces" for midwives and midwifery students, having "professional control" and issues around "mentoring, supervision and management".

The third theme, “Structuring midwife-led care”, relates to the QMNC category “Organisation of care”. This section looks at the organisation of care used in the QMNC framework to describe available, acceptable and good quality services by a competent workforce and continuity and integration of services across the community and facility. Applied to the Bangladesh model, in my analysis this includes categories under the organisational aspects of “optimal care”, “integration of services”, “cost” and “procedures and evaluation of care and services”.

The last theme from my analysis is called “Providing care around the continuum”, which is partly linked to the QMNC “Practice categories”. This theme includes issues relating to education, information and health promotion; assessment, screening and care planning and promotion of normal processes, with all of these being relevant to all childbearing women and infants. For women and newborn infants with complications, first line management of complications and medical obstetric and neonatal services is included, according to the QMNC framework. In my analysis, these issues formed the categories “health promotion and prevention”, “referral” and “care for women and newborns with and without complications”.

Figure 18: Themes and sub-themes in the implementation of midwife-led care in Bangladesh



Throughout the findings, the analysis is first provided, followed by a quote derived from the interviews and focus group discussion to illustrate that particular finding. Quotes are identified as coming from the different groups, i.e. "woman", "programme manager", "expert", "midwife". Where place names or other identifying issues were mentioned, either a general name, such as "health care centre" was used, or the name was anonymised by using "xxx".

6.2. FINDINGS

6.2.1 PARTICIPANTS AND FACILITIES

In total, 26 interviews and five focus group discussions were conducted between 11 June 2018 and 20 November 2018 (Table 15). Of the 26 interviews, five took place using the video-conferencing service Skype, and one via telephone; the remainder were conducted face-to-face. The duration of the interviews varied between 12 minutes and 65 minutes. Of the five focus group discussions, three included midwives working in a private midwife-led unit (n=8 midwives), at a public midwife-led unit in a health care complex in a semi-urban area (n=3 midwives) and in a public midwife-led unit of a district health care centre in a rural area (n=5 midwives). The two focus group discussions conducted with women took place at a private midwife-led unit in an urban area (n=8 women) and at a private midwife-led centre in a rural area (n=7 women). The duration of the focus group discussions varied from 14 minutes, in which case women did not have much time to respond, to 43 minutes. Six interviews and focus group discussions were conducted in Bangla only, eight were a mix of Bangla and English and 17 were in English only. Of the interviews which were conducted in Bangla or in Bangla and English, all included an interpreter.

Table 15: Overview of interviews and focus group discussions (FGDs)

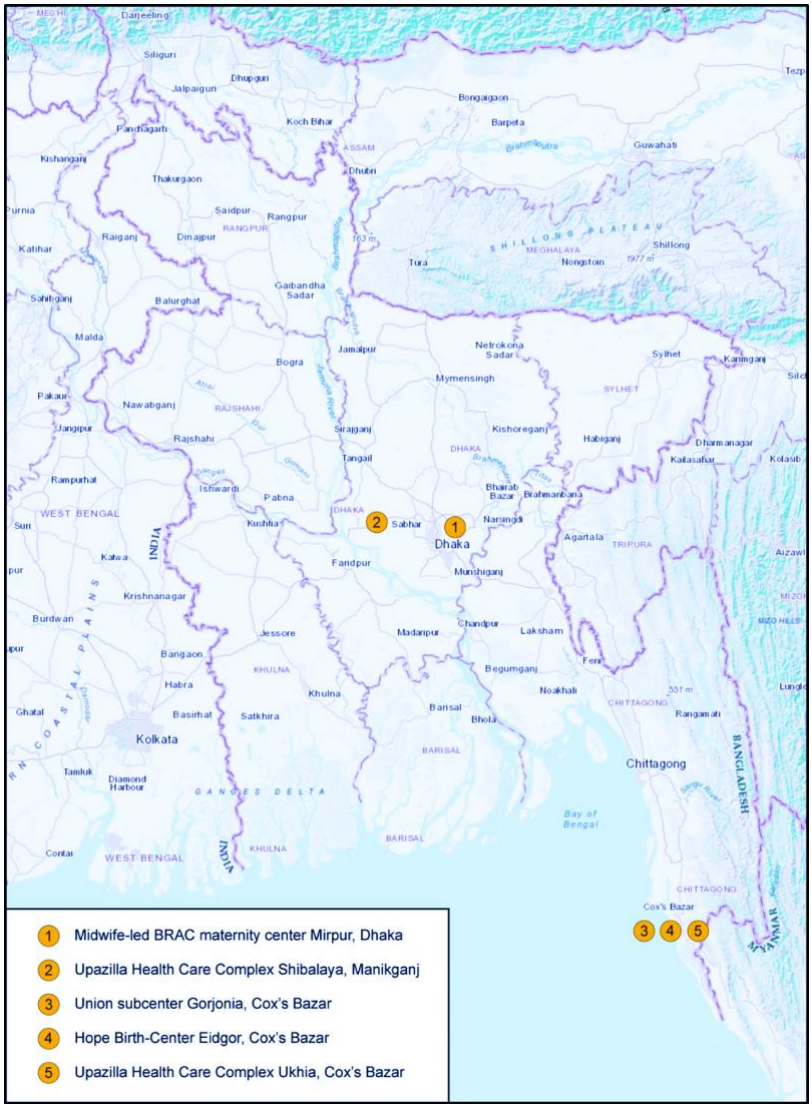
	No. of interviews	No. of FGDs	Number of people
Key stakeholders	16	0	16

	No. of interviews	No. of FGDs	Number of people
Medical and allied health professionals	4	0	4
Midwives	2	3 (3, 4 and 5 participants)	14
Women	4	2 (7 and 8 participants)	19
TOTAL	**26**	**5**	**53**

The group of key stakeholders were heterogeneous and consisted of midwifery, maternal and newborn health experts, heads of programmes, programme managers, government officials at various levels – from central level to local, representatives of midwives' associations, midwifery educators and academics. These were all individual interviews. The group of medical and allied health professionals consisted of medical doctors, obstetricians/gynaecologists and community health workers. Once again, these were all individual interviews. The group of midwives were mostly midwives who had graduated from the three-year, direct-entry Diploma in Midwifery programme. One midwife had graduated from the six-month post-basic Certificate in Midwifery programme for nurse-midwives. Some of the midwives, especially those who work at the Upazila Health Complexes (secondary level), held a government position and some were employed by NGOs such as BRAC, Hope and Save the Children. Midwives participated in both interviews and focus group discussions. The women had all

received care at one of the midwife-led centres visited, i.e. the midwife-led BRAC maternity centre in Mirpur (Dhaka), in the Hope-supported midwife-led centre based in the Union sub-centre (primary level) and the independent health centre at Gorjonia (Cox's Bazar), in the Hope Foundation's midwife-led birth-centre in Eidgor (Cox's Bazar) and the midwife-led unit at the Shibalaya Upazila Health Care Complex that is supported by UNFPA and Save the Children. They participated through interviews and focus group discussions. Sometimes, participants also call the midwife-led units "birthing centres".

Figure 19: Midwife-led models of care in Bangladesh in which data was collected



The way the five midwife-led centres operated varied. None of the public midwife-led centres offered postpartum care in the homes of women, whereas some of the private midwife-led units did, indicating that they provided continuity of care. The midwife-led BRAC maternity centre in Mirpur, in Dhaka, was the first midwife-led centre established in Bangladesh. Midwives provide antenatal, intrapartum and postpartum care and conduct regular outreach activities in the urban community. The centre also serves people from low-income groups from the nearby slum and Bihari community[16]. Midwifery students from BRAC University are placed at the centre for practical learning. The midwives work in three shifts and call each other when support is needed. The centre is managed by a manager without a medical background and also hosts community health workers, who conduct outreach activities such as nutrition counselling in the surrounding area. An obstetrician/gynaecologist attends the antenatal clinic once a week and provides ultrasound scans. If a referral is needed, the midwives inform the woman by phone (Table 16).

In the public Union-sub-centre in Goronja in the Cox's Bazaar district, the Hope Foundation has established a stand-alone midwife-led centre which employs one midwife. The Union sub-centre did not previously have a healthcare worker. The midwife working at the centre provides antenatal, intrapartum and postpartum care. The midwife has her own rooms at the centre, in which she lives together with an auxiliary midwife. If necessary, she refers women and newborns to the Hope Foundation's Hospital for Women and Children in Cox's Bazaar (Table 16).

The Hope Foundation's Eidgor birth centre in the Cox's Bazar district is a stand-alone private birth centre. Only one midwife works there, supported by an auxiliary midwife and a cleaner. The midwife lives at the centre and is able to refer clients to the Hope Foundation's Hospital for Women and Children in Cox's Bazaar. The midwives from Eidgor and Goronja telephone each other if peer support is needed.

[16] https://www.dw.com/en/the-neglected-bihari-community-in-bangladesh/a-50824994

The public midwife-led centre at the Upazila Health Care Complex Ukhia in Cox's Bazaar is an alongside midwife-led unit in which three midwives work in shifts. They provide antenatal, intrapartum and postnatal care (Table 16).

In the public Upazila Health Care Complex Shibalaya in Manikganj district, the alongside-midwife-led unit is supported by the NGO Save the Children, with funds from UNFPA. A mentor, a medical doctor, supports the activities of the five midwives who work there. Three of the midwives are employed by the government and two by Save the Children. An experienced midwife who has attended the six-month post-basic Certificate programme for nurse-midwives heads the team. An obstetrician/gynaecologist is on call in case problems occur. Several times a week the obstetrician/gynaecologist provides ultrasound scans, in addition to the antenatal care provided by the team of midwives (Table 16).

Table 16: Characteristics of midwife-led centres visited for data collection

Name of centre	Private or public	Stand-alone or alongside	Number of midwives	Supported by
Midwife-led BRAC maternity centre Mirpur (Dhaka)	Private	Stand-alone	4	BRAC
Union sub-centre Gorjonia (Cox's Bazar)	Public	Stand-alone (only pharmacy attached)	1	Hope Foundation

Name of centre	Private or public	Stand-alone or alongside	Number of midwives	Supported by
Hope birth centre Eidor (Cox's Bazar)	Private	Stand-alone	1	Hope Foundation
Upazila Health Care Complex Ukhia (Cox's Bazar)	Public	Alongside	3	None
Upazila Health Care Complex Shibalaya (Manikganj)	Public	Alongside	5	Save the Children (UNFPA)

6.2.2. THEME: EXPLORING THE "HEART AND SOUL" OF MIDWIFE-LED CARE

INTRODUCTION

Exploring the heart and soul of midwife-led care theme illustrates the essence or most vital part of midwife-led care in Bangladesh. It is linked to the various aspects relating to the two components of "philosophy" and "values" under the QMNC framework (Renfrew et al. 2014). The philosophy of midwife-led care reveals itself in the issues associated with empowerment and human rights in childbirth. These issues include choice and consent, both of which are new concepts in Bangladesh and affect the culture of birth. For example, welcoming birth companions with women is seen in the

midwife-led centres and the provision of respectful maternity care reported by the participants of this study is rooted in the philosophy of the midwife-led model of care. These aspects of care are not common in the usual, obstetric-led maternity services in the country. An expert describes the situation this way:

> *"I absolutely can see that cultural shifts that needs to happen and this has so many implication (...) but the heart and roots of it (MMS: midwife-led care in Bangladesh) very similar (MMS compared to midwife-led care in other countries)"* (Expert 6)

Respectful maternity care relates to the concept that women are bearers of rights who are protected from harmful practices, such as unnecessary interventions, such as caesarean sections. With regards to "values", two concepts are described in this chapter that characterise the purpose that underlines midwife-led care in Bangladesh. Several of these aspects, like the ability to choose, also appear in the philosophy category of the QMNC framework. Continuous support is described in the chapter on organisation of care.

The heart and roots of midwife-led care highlights how this model of care is based on women's needs. Ensuring the woman is placed at the centre of care is a novelty in Bangladesh. In midwife-led units, women are asked what they need and they are able to bring birth companions. Some women however, reported that their privacy could not be maintained in the midwife-led centres and that they therefore preferred to give birth at home. These issues are explained further in the next section.

SUB-THEME: EMPOWERING MIDWIVES, EMPOWERING WOMEN

The first sub-theme, "Empowering Midwives, Empowering Women" speaks to midwives as a female dominated profession caring for women in a patriarchal society. Empowerment of both in this context means taking control of a profession and women taking control of their bodies. Women in Bangladeshi society are often not the decision makers, even when their own health and well-being is concerned. Power structures in families allow husbands or mothers in law to make decisions about when and where women should seek care. This relates to the underlying concept of *purdah*, as

explained in Chapter 4. One strategy to address empowerment and decision-making in childbirth in Bangladesh has been the establishment of “mothers’ clubs” to gather women of childbearing age together. Midwives working in midwife-led centres attend recently established mothers’ clubs and provide health care information, for example:

> *“We have opened 10 to 12 mothers’ clubs in the facilities (midwife-led centres) to counter the idea of [traditional] decision-making. These mothers’ clubs include mothers and potential mothers or the girl who is going to marry soon” (Programme Manager 3)*

Midwives take the lead in creating a space for women’s empowerment. The midwives are women themselves, which traditionally provides them with easy access to other women, but also puts them in the position of role models. They work independently, usually taking decisions on their own or in teams. Therefore, midwives working in midwife-led centres were also seen as ideal professionals to support the empowerment of women. For example, an expert said:

> *“I think it’s a good idea I think that the midwives can fill the existing gaps that will not only keep women alive but make women more empowered and make women feel more respected and improve the quality of care I think the gaps these midwives can fill them.” (Expert 1)*

Midwives, as women in a non-academic profession in Bangladesh, are also disempowered. Like women who give birth in Bangladesh, midwives who have graduated from the Diploma in Midwifery programme are often young women. Being a woman and being young are attributes that are not traditionally associated with decision-making power in Bangladeshi society. Decision-making power is usually in the hands of (male-dominated) medical professionals. In the midwife-led model of care, midwives work in partnership with the woman and this responsibility means that women feel more empowered. Empowering midwives to be able to provide midwife-led services is seen as essential, as discussed by a programme manager:

"The women will consult with the doctors and this is one of the barrier the midwives cannot have the decision-making power" (Programme Manager 5)

When midwives are empowered and feel strong it is more likely that they can enable women to feel the same.

Empowerment of midwives is often addressed through the support of midwifery professional associations. In Bangladesh, the midwifery association helps ensure that the voices of midwives are heard and also facilitates midwives having a seat at the decision-making table.

The empowerment of midwives refers to the need to become emancipated from the male-dominated medical professionals in order to be able to make clinical decisions within their scope of practice. The latter point will be described in the theme "Empowering midwives to become leaders in care and beyond" in detail.

Midwife-led care addresses gender equity and the empowerment of women by changing the perspective of decision-making power in childbirth. Midwives were seen to be supporting women in innovative ways, such as by using "mothers' clubs" to empower women in decision-making. There was also a feeling that midwives 'empower lives' by being empowered themselves and thus also enabling women to take power.

SUB-THEME: HAVING CHOICE AND GIVING CONSENT

The second sub-theme was about women having choice and giving consent, both quite new concepts in Bangladesh. When women give birth in health facilities, as is now very much encouraged, they seem to be pushed towards giving birth by caesarean section. Some respondents felt that obstetricians "encourage" women to have a caesarean section. In contrast, it was reported that if women and their families chose midwife-led models of care, they knew they were more likely to give birth normally. This is especially true for women from lower socio-economic backgrounds who cannot afford a caesarean section, making a midwife-led model of care a good alternative. This is explained by a midwife who said:

"the consultants don't have time wait for a normal delivery because they so many things to do and they encourage patients to have a C-section[17] but the people of the rural community are not able to pay the cost of the caesarean section and they are keen to having normal vaginal delivery. (…) We need more midwifery led care in our country to encourage the normal vaginal delivery and decrease the numbers of C-section." (Midwives FGD 1)

It was evident that the midwives saw midwife-led care as providing women with a choice in terms of mode of birth.

Women's right to choose in childbirth is new in Bangladesh and increasingly, from the perspective of participants in this study, women are seen as holders of rights over issues relating to their bodies. This concept of respectful care and choice is part of the midwifery curriculum and was introduced in the midwife-led model of care in Bangladesh. Midwives working in this model of care were, at least theoretically, sensitised by values for respectful maternity care and women's choices in childbirth. A midwife who assisted a woman who gave birth in a public midwife-led unit explained that the woman was able to choose between birth positions (e.g. walking, upright position, lying down):

Interviewer: "When you provide care in the delivery room do the women always lie down?

Midwife 1: "The position is the preference of the pregnant women

Interviewer: "They choose?

Midwife 1: "she can walk around

[17] Caesarean section

Interviewer: "And for the delivery she always lay down or you suggest upright position?"

Midwife 1: "yeah, we support the upright position (…)

Interviewer: "Do you learn this all in your education? "

Midwife 1: "Yeah" (Midwives FGD 2)

The fact that she was talking about it shows that it was new and that giving women the choice was not commonplace. In a similar way, the choice of birthing positions also appeared in an interview with a programme manager of a private midwife-led centre. In these midwife-led units, there are options for women to choose to be mobile and birthing chairs are available in the birthing room of the midwife-led units. Again, this concept of providing women with alternatives to giving birth in a lithotomy position is new. These differences between midwife-led care and the obstetric model are explained by this educator:

"You have seen the chairs in different positions. In my country [Bangladesh] if anyone thinks of normal vaginal delivery she just thinks of lithotomy position in the hospital and if it's in home it is squatting position with bending legs and here (MMS: in the midwife-led unit) it is totally different for them (…) If I compare with the [midwife] led care centre the situation is worse in the obstetric (centre). They are giving the instructions for the (birth) position, that this the position you have to do." (Teacher 1)

Participants talked of the value of putting the needs of the women at the centre of care where midwives are able to make suggestions and propose several possibilities such as walking around, sitting and lying down. Women reported that they were able to decide what was best for them. They felt that the power of choice was in their hands and care is tailored to their needs and not the needs of the care provider. These exchanges highlight these issues. The first is about being able to choose

companionship in labour, again not a practice that is common in health facilities in Bangladesh:

> *Interviewer: "And who else? Did you bring somebody from your family? (…)*
>
> *Woman Interview 4: "My aunt"*

The second quote below reiterates that women cannot bring family members as companions during birth into the obstetric-led hospitals but they are able to in the midwife-led unit and this was part of changing the culture of birth. Male birth companions are not allowed into the birthing room in some of the midwife-led units, but in others they are allowed. Providing these options is seen as a benefit by a key stakeholder, who argues that offering a choice for companionship in the midwife-led model of care will increase the likelihood that women and their families seek midwife-led care, as stated by a midwifery educator from a private institution:

> *"In our country, relatives are not permitted into the birthing centre but it is only possible in the led care centre (MMS: midwife-led centre). In the hospitals, not even the women family members are allowed to enter in the service area. And the husband you cannot think about him to enter in the birthing centre (MMS: midwife-led centre) but we are ensuring this can happen in the led care centre (MMS: midwife-led centre). So, this is the way we can explain people why they will come to the midwife-led care centre and why it is much beneficial for them." (Teacher 1)*

Midwife-led units mean that women have exercised choice in the place of birth. Women hear from other women or their relatives about the option to give birth in midwife-led units. They can actively choose what is suitable for them. It was believed that this choice will increase in the future:

> *"(…) the mothers they choose the nearest district hospital and medical college hospital but when the people know that this the (midwife-led) model exists or*

the midwives are doing a good job, they will come to the Upazila Health Complex and this is a positive thing". (Expert 2)

The sub-theme relating to choice and consent as part of the "heart-and-soul" of midwife-led care in Bangladesh shows that while these concepts are new, they are highly valued. The choice for women to opt for normal birth seems to be an important issue for families in Bangladesh, with caesarean sections on the rise for those accessing facility-based births. The midwife-led model of care in Bangladesh provides an option to give birth normally within a safe environment. This environment also enables women to make choices around having a birth companion and the positions they adopt during labour and birth. The midwife-led model of care has choice and consent at its core value and philosophy.

SUB-THEME: DE-MEDICALISING CHILDBIRTH - TOO MANY INTERVENTIONS TOO SOON

Concerns over the increasing medicalisation of childbirth was a sub-theme and changing the culture around birth through midwife-led units was seen as a way to address this. As described earlier in the description of the "setting", caesarean section rates are rising in private hospitals, but also in the obstetric-led public facilities. As the rate of facility-based birth rises, interventions in childbirth rise. Establishing midwife-led models of care in facilities was one way to address this issue: by having a skilled provider at birth, women are able to give birth normally. One midwifery educator explained this by saying:

"So, we started thinking about the midwives. But while we posted them in the hospital and we have seen that they can't make their own decisions and they have been dominated by the doctors and they are not encouraging NVD [normal vaginal birth] and they are not supporting the midwives for doing the NVD and this thinking of separating the midwives into different facilities arose." (Teacher 1)

One of the driving factors for the introduction of midwife-led care was the political will to reduce the high rates of caesarean sections for women having facility-based births. The midwife-led model of care was seen as an opportunity for midwives to support women to have a normal birth. However, medical domination in hospitals was recognised as a major barrier to being able to avoid unnecessary intervention. For example:

> *"There are many (barriers). The doctors are the main barriers and they don't like the normal deliveries and they are looking [to do] quick caesarean sections. (…) In some of the areas the doctors are not willing to do normal deliveries and they force the mothers to get a caesarean and motivate them to do so and sometime they biased with some information so that the mothers will not dare to attempt a normal delivery. The doctors are higher in the position [the hierarchy] than the midwives so people trust on them and have the caesarean sections." (Government Official 1)*

The provision of normal birth is within the scope of practice of midwives. The midwife-led model of care was seen an opportunity to promote and enable normal births, as explained here by a programme manager:

> *"The doctors don't have enough time to be with the mother for 10 to 12 hours and midwives are expert on those areas. They should be there. They are the expert and they know how to deal with that and they don't know how to do caesarean section. So, there is no bias to do the caesarean section." (Programme Manager 2)*

It was observed by participants that midwives encourage women to give birth normally and this was appreciated by the women, for example:

> *"What I have seen is that the people are actually very happy the way the midwives encourage them (…). Midwives encourage them they say sit in the chair and how you can do it and they can say they give them time and*

encourage them walk especially the exercises they love and that is done by the midwives" (Programme Manager 6)

The midwife-led model of care was seen as an alternative to the medical model of care and there was a strong desire to extend the model throughout the country, as a strategy to reduce interventions.

In the "de-medicalising childbirth" sub-theme, midwife-led care is described as a model to address the highly medicalised area of childbirth in Bangladesh. The midwife-led model of care is more likely to support and promote normal vaginal birth, as described in the previous sub-theme. It also offers the possibility to separate, in terms of space, the obstetric-led model of care. Midwife-led centres in Bangladesh have been developed in both alongside and freestanding settings. The support of normal birth by midwives in midwife-led centres lies within their scope of practice and midwives encourage women to understand that giving birth normally is safe and possible.

SUB-THEME: SHIFTING FROM FEAR TO COURAGE IN CHILDBIRTH

A shift from being fearful of childbirth to having courage was seen as being needed and made up the next sub-theme. It was felt that women fear birth in an obstetric-led facility, as obstetricians suggest that they should have a caesarean section. This programme manager explained the issue of fear in childbirth:

"Like they are giving the instructions that this the (birthing) position you have to do and everybody has the fearfulness to give birth (there). What the doctors are suggesting like to do like this and this. Most of them have fear of normal delivery and they are going for C-section, they (MMS: the women) are thinking and decided to have a C-section." (Programme Manager 5)

This midwifery teacher has herself experienced this fear in childbirth and the issue that medical doctors are felt to force women into assisted births, although she herself wanted to give birth naturally. She said:

"I have fear to go to the hospital because they are not even trying for the normal delivery and I wish I have a natural delivery so I fear to go to a doctor and I fear to go to a hospital." (Teacher 1)

In contrast, women who sought care in a midwife-led centre reported that they did not have such fears. The midwife-led unit enabled them to have care from one of the midwives who they are familiar with and who they trust, i.e. experiencing continuity of carer. The midwife-led unit also created a friendly space, as explained here:

"The women can give preference for a particular midwife's service because they know each other. We are giving them the friendly environment." (Programme Manager 5)

In the midwife-led model of care, women are encouraged to give birth normally and naturally and the relationship and the environment seem to give them courage. This is in contrast to the obstetric-led model of care in which fear of childbirth is cultivated and women feel that they are pushed into having a caesarean section. One-to-one care with a known midwife is also offered in the midwife-led model of care in one of the private facilities and this midwifery continuity of carer was seen as very positive.

SUB-THEME: POSITIONING WOMEN'S NEEDS AT THE CENTRE AND PROVIDING AND RECEIVING RESPECTFUL MATERNITY CARE

Respectful maternity care made up the next sub-theme. One of the prerequisites for respectful maternity care is for women to be aware of their rights that need to be protected. The concept of respectful maternity care is interwoven into the underlying values of midwife-led care in Bangladesh. A programme manager explains this:

"The outcome is to make the people aware about women's rights, they can feel the pregnancy is not a burden and they will have the respectful maternity care (…) where the women can express all the feelings, all the demands and what they need." (Programme Manager 5)

Women who received care in a midwife-led model of care felt that they were treated by the midwives with respect. Women who were treated with respect within the midwife-led model of care shared their positive experience. This encouraged other women to seek care in a midwife-led unit, enhancing acceptability of care and thereby increasing the number of facility-based births. This woman felt that she received respectful maternity care and this made a difference to her attendance at the facility:

Woman Interview 2: "Yes, we received respectful care.

Interviewer: "Can you recommend other women to go to this facility?

Woman Interview 2: "Yes, everyone is going there."

A midwife working in a midwife-led unit highlighted the importance of providing respectful maternity care, but she felt that the space in which it is provided matters too:

"I think every facility should provide respectful maternity care in a nice environment." (Midwives FGD 2)

Privacy as part of respectful care was recognised as being important to women. Fears about a lack of privacy was seen as a major driver to stay at home during birth and not to seek care in a health facility. One government official said:

"The women living in the villages are not very interested to come to the hospital for their birth (…) they would like to give [birth] in a private place or their own place." (Government Official 2)

The provision of privacy in governmental obstetric-led facilities was seen as problematic, as many people (visitors) are able to access them. The opposite is the case in the midwife-led model of care, where women feel safe in a "homely" or private environment. A midwifery educator agrees, saying how important privacy was, for example:

"We also can explain the extra care that the midwives will provide in the [midwife-] led care centre and the issue of privacy will be managed and to maintain privacy in the hospital is difficult. There (MMS: in the hospital) (are) many visitors, here you can get homely environment and there (is) someone always besides you which you can't expect in a hospital." (Teacher 1)

What women want and need is a core value that is embedded in the provision of midwife-led care, and is therefore positioned at the centre, or the heart and soul of midwife-led care in Bangladesh. Midwife-led units were believed to provide care that placed women at the centre, as explained here:

"Where the women can express all the feeling, all the demands and what they need (…). I want that the government adopts this model all over the country" (Programme Manager 5)

In a private midwife-led centre, this private space was identified as important to women and was supported by the programme manager and the midwives working in the midwife-led unit. This was also communicated to women, as explained by a midwifery educator:

We also can explain the extra care that the midwives will provide in the midwife-led care centre and the issue of privacy will be managed. In the hospital to maintain privacy is difficult. There are many visitors. Here (MMS: in the midwife-led centre) you can get homely environment and there is someone always besides you which you can't expect in a hospital. (Teacher 1)

Respectful maternity care not only concerns the women, but is also important for the providers of care. In Bangladesh, nurses are not treated with respect and people are not even aware of midwives, which affects quality of care and the visibility of midwives. One expert explained this:

"Health sectors and education both suffering a lot because of the quality. understanding of the quality is missing, we treat our nurses badly and we don't even know the midwife exists." (Expert 6)

The provision of respectful maternity care is included in monitoring the quality in the midwife-led unit, which shows that programme managers understand the importance of the concept. For example, information about respectful maternity care is collected by the programme manager supervising the midwife-led BRAC maternity centre from the communities surrounding the midwife-led centre. Community members said that midwives were "friendly" in their interaction with women, and their families are regarded as "sister". They also said that midwives would make a difference to issues such as the high caesarean section (CS) rate. For example:

"These are the things the community people told me. They have been saying that the midwives are friendly and they talk to us and they like sisters. (…) We are documenting the numbers every month in a chart including family planning, care giving and ensure the provision of respectful maternity care and everything is recorded from the checklist." (Programme Manager 5)

Participants felt that midwives were the ideal professionals to provide respectful maternity care and it was part of the midwives' professional identity. The provision of respectful maternity care was seen as essential or "critical" and ensures that care goes "beyond" the reduction of maternal deaths. This is despite the fact that the current focus is still on the reduction of maternal mortality and morbidity, on issues around unnecessary interventions and the reduction of health care expenditure. This expert says:

"So, I have whole hearted(ly) supported midwives anywhere in the world to provide respectful maternity care for the women. For the provision of respectful maternity care, I don't see any option apart from midwives to do this and this is very critical to not only reduce the maternal mortality and reduce the C-sections and all those other things or reducing the healthcare expenditure as well but

also to go beyond to impact on maternal and newborn mortality and the morbidity." (Expert 6)

As mentioned earlier, the ability to provide respectful care is part of the professional identity of midwives. Through this ability, midwives are honoured and respected themselves by society, as mentioned by a midwife:

"This profession is honoured and respected and are providing maternal health care and feel proud of our profession." (Midwives FGD 1)

However, it was also recognised that midwives (especially in the government sector) need further training to be able to take care of women respectfully, for example:

"They (the midwives) (…) need to have some of the training for respectful maternity care" (Programme Manager 5)

In the sub-theme providing and receiving respectful maternity care, this specific value within the midwife-led model of care is described. Women stated that they received respectful care, including through the collection of their perspective by a programme manager and therefore the profession is honoured. The heart and roots of midwife-led care is the concept of respect by midwives towards women and also by communities paying respect to midwives. However, further training of midwives working in the public sector is needed, especially as these concepts are new and there are few role models in the obstetric-led services. In this sub-theme, women's needs are at the centre of care and the model is modified and designed around them. It was identified that efforts need to be undertaken to communicate that births in midwife-led models of care are safe and privacy can be maintained to ensure acceptability of care.

SUMMARY

The theme "the heart and roots of midwife-led care" shows the underlying philosophy and values that shape this model of care in Bangladesh. Midwife-led care values women's ability to empower themselves and make decisions about their own births.

The midwife-led model of care has the potential to address the patriarchal culture in the Bangladeshi society, as midwives put women's needs at the centre of decision-making. The female dominated midwifery profession will need to be empowered as well to act as role models and also to provide private spaces for women so that they are able to choose their preferences around childbirth and to be safe from harmful practices such as unnecessary interventions like caesarean sections. At the centre of midwife-led care is the woman, with her needs and rights which she is able to express and take care of. This means that midwife-led care is best placed to replace a medicalised model of care that currently dominates childbirth in Bangladesh and helps to turn fear to courage.

6.2.3. THEME: EMPOWERING MIDWIVES TO BECOME LEADERS IN CARE AND BEYOND

INTRODUCTION

The theme "Empowering midwives to become leaders in care and beyond" explores the status of midwives in the provision of midwife-led care. It is linked to the "care providers" category in the QMNC framework.

This theme shows the importance of midwife-led model of care as spaces in which midwives are able to develop their skills, apply their knowledge and try out roles and responsibilities of this new profession, while becoming leaders of the present and the future. Within this theme, sub-themes such as professional control and the ability to prescribe medication are evident, but support of the midwives through management, supervision and mentoring within a childbirth culture that is in transition were also evident from the data and will be described in detail.

SUB-THEME: A SPACE FOR PRACTISING MIDWIFERY

Midwives, either those certified from a post-basic nursing programme or graduates from a Diploma in Midwifery programme, are gradually being deployed in both public and private midwife-led centres, predominately at sub-district level. These newly

created spaces were sometimes created in existing structures, such as maternity wards in Union sub-centre Gorjonia (Cox's Bazar), Upazila Health Complexes such as the Upazila Health Care Complex Ukhia (Cox's Bazar), the Upazila Health Care Complex Shibalaya (Manikganj), or within the private sector in existing Manoshi centres such as the BRAC University midwife-led centre. Sometimes, these spaces were created in newly developed structures such as the Hope Foundation's Eidgor birth-centre (Cox's Bazar). In these spaces, midwives are able to provide midwifery services independently and autonomously. The development of skills and the ability to provide evidence-based care without the supervision of medical doctors has enabled midwives to practise midwifery.

Midwives working in a midwife-led governmental facility felt that they worked independently. In their view, the support they receive from an NGO through skills training and the deployment of a senior midwife has had a positive impact on the successful implementation of the midwife-led centre and specifically with providing midwifery services. Some of these midwives are employed by an NGO but placed in a governmental facility and receive support from the governmental health authorities. In the focus group discussion, they explained:

> *"We are working here independently. (…) The credit goes to XXX (an NGO) and without their support it is not possible run such place in such way. (…) The staff ignored us but after this Apa's (senior midwife) arrival, everyone is now listening to us." (Midwives FGD 2)*

A midwifery educator from a private organisation explained that they were inspired to introduce midwife-led care after seeing and hearing about midwife-led models of care in high-income countries. Midwifery skills, from her perspective, can only be developed when midwives are able to work independently and not under the supervision of medical doctors. The midwife-led model of care is therefore an ideal space for midwives to develop and grow their professional skills. She explained this here:

"We learned from the developed countries and [this] inspired us to have in our country [midwife-led care] to reduce the numbers of the CS and make it more popular among people. We think that if we stay under the doctor's supervision in the hospital the people would not be able to know about the service. The midwives also won't be able to show their skills if they remain under the doctors. This is how we establish this midwife led-care centre and now we are planning to establish more." (Teacher 1)

An expert emphasised that the midwife-led model of care is ideal for midwives to practice autonomously and independently. She said:

"So now the midwifery led care model is the good model for practising midwifery autonomously and independently as professionals. So, I think it is a good start for Bangladesh to initiate the midwifery model and gradually it will be more visible and more hopeful." (Expert 3)

Another programme manager explained the way midwives were working in the centres and how beneficial this was, for example:

"… the midwives are very good and they have been providing very good support round the clock. While the doctors are not available, the midwives are providing their services and they are very much cooperative." (Medical and allied health professional 1)

The midwife-led model of care provides an appropriate space for the newly introduced cadre to practise midwifery autonomously. This is in contrast to midwives or nurse-midwives who practise in obstetric-led models of care in which they are under the supervision of medical doctors. As midwifery is new in the Bangladeshi healthcare system, the midwife-led model of care is the right space for the midwives to 'claim' midwifery, by developing skills and knowledge without other medical professionals being able to interfere. This is similar to the next sub-theme, which will describe the

importance of midwife-led model of care and the centres that host this model as learning spaces.

SUB-THEME: MIDWIFE-LED CENTRES AS LEARNING SPACES

Participants described the role of midwife-led centres as being learning spaces. Previously, midwifery students were placed in medical college hospitals or in obstetric-led units. The government has now issued an order to all midwifery education institutions that they should plan to send their students to midwife-led centres for practical placements. Midwifery students from both, public and private educational institutions are now sent to public and private midwife-led centres to practise within a midwife-led model of care. A programme manager from an NGO described the importance of effective hands-on training for midwifery students to give them confidence to support women during normal births, but also to provide care in emergency situations. In the following quote, a programme manager discusses why midwife-led centre could be ideal places for learning:

> *"I think midwives are needed to give the scope to show their skills and expertise. (...) If midwives are not confident in the reality that will backfire and the patients ask what is the difference between the midwife and the traditional birth attendants." (Programme Manager 1)*

This is also supported by another programme manager, who stated:

> *"So, if the midwives are there and if we can create an enabling environment in that facility to provide midwifery led care and if we can start a midwifery led care only then people can come and see what is midwifery-led care. So, we have started working on that in Upazila health complexes" (Programme Manager 2)*

Only recently, midwifery students were able to spend their practical training phase in places where the midwife-led model of care exists. Midwifery students still mostly practise in medical college hospitals or obstetric-led units. In these environments, they

compete with other health professionals, including medical students, which diminishes their learning opportunities, for example:

> *"there is a lot of competition with the other professionals also medical students and students from the other organisation so they [midwifery students] are not getting not so much to get their clinical experience as much as required in our curriculum." (Expert 3)*

The issue of competition in hospitals makes midwife-led models of care ideal for learning. They provide an environment in which midwives and midwifery students gain ownership over their professional practice. These quotes highlight these issues:

> *"Many midwifery schools exist so they are also sending students to the medical college and district hospital so midwives students are less chance to get the labour cases or to get the cases to practice according to their curriculum. We would also like to make MLCs clinical practice sites and we have circulated one government order that all the institute should send their students to MLC sites." (Expert 2)*

A similar perspective, on the importance of experiencing midwife-led care during clinical placements, was also raised by a programme manager from a different organisation. Previously, midwifery students learned from watching videos of midwife-led models of care from other countries. The implementation of midwife-led centres based on international standards, alongside education of an international standard, in Bangladesh was seen as necessary for midwifery students, as highlighted by a programme manager:

> *"Now we are giving education to the students, now we are giving the imaginary like that and some of the international videos we are giving them as a resource but they didn't see type of model of care centre in our Bangladesh. It will very good thing if every centre will adopt, educational institute will adopt practice like*

this where their midwifery students are also brought up them like this as a midwife." (Programme Manager 5)

Midwifery educators identified the importance of focussing on "midwifery practice" and saw benefits in the placement of midwifery students in the midwife-led centres. In the midwife-led centre, midwives are able to practice within their own professional boundaries and students are able to learn what actually the 'heart' of their profession (midwifery practice) is. Midwifery teachers saw a value in providing a safe space in which their students were not disturbed to explore the content of their very own profession. For example:

"For my student's outcome (the benefit of being placed in a midwife-led centre is) that they are going there so can practice the core midwifery practices. There is no one to disturb or interrupt them no one says you cannot do this and they only practice the midwifery practices here" (Teacher 1)

The midwife-led centre offers a place for students to learn and for the educators to maintain their skills. Additionally, these educators from the college supervise the midwives working in the midwife-led centre. This is organised by the educational institution and the midwife-led centre. A midwifery educator describes this issue:

"They (the teachers) can also maintain their individual practices so that is how my involvement with the midwifery led care centre to ensure the quality of my students and my teachers." (Teacher 1)

It is not only students who benefit from access to midwife-led centres. Newly graduated midwives are also sent to the sub-centres for three-month internships. One expert explained this:

"I told you one example of one centre (…) now totally running by the midwives. There are no doctors so this sub-centre is under totally with the midwives. We are sending the midwives who are graduated for internship for three months.

950 already completed from July 3rd we will start another 3rd batch, another internship." (Expert 2)

It was evident from this sub-theme that midwife-led centres played a valuable and important role in supporting the learning of students and later, as new graduates. Educators are able to maintain clinical competence by regularly working in the midwife-model of care. The next issue to address was the scope of practice for the midwives, including being able to prescribe medication, as explained in the next theme.

SUB-THEME: HAVING PROFESSIONAL CONTROL

Doctors and nurses who provide childbirth care in the governmental health clinics have more professional power compared to midwives. In particular, the doctors had traditionally been the profession in control, although the nurses also have considerable influence. It seemed that it was mainly the nurses who opposed the midwives. A power struggle meant that nurses controlled the birth "territory" and were not willing to let midwives into the space they had claimed for themselves, as exemplified by this quote:

"The biggest barriers are to get support [for midwife-led care] is from other professionals such as the doctors and nurses who are seniors and working for a long time in the … health complexes. They are more the powerful persons. Because our country is medically dominated. There are some doctors who are willing to facilitate the midwives. the nurses are doing the same role so it will take time to hand over the midwifery responsibilities to them and maybe they are not now willing to do so." (Expert 3)

This control of midwives in midwife-led centres includes the control in clinical decision-making within childbirth, but also at a programmatic/administrative level. Senior nurses have the power in the public health system and the newly introduced midwives present a threat to this power. Official documents, issued and distributed in a "top-down" way, are used as a way to shift power from nurses to midwives, as explained here:

"Nurses who are senior and have worked a long time don't want to lose their power, they don't want release being in charge. We have been circulating a government order on the midwives that says they should be the in charge of the labour and operation theatre, labour OT and neonatal and neonatal ANC, PNC. (…) one reaction from the senior nurses is that they are afraid to shift the power to the midwives." (Expert 2)

Currently, clinical decision-making power lies with the medical doctors and it was felt that the community believed that the medical doctors are the main providers of care in childbirth. A transition of power will take time, as stated here:

"The barrier I feel at this moment is the midwives are not the decision makers for the mothers. (…). The community thinks that the doctors are the key providers of the care so it is a barrier and we are trying to meet up these barriers but it will not happen in a day it will take a long time." (Programme Manager 5)

It was evident in the data that as midwife-led care is new in Bangladesh, the division of roles and responsibilities based on needs, competencies and resources, as described in the "care providers" section of the QMNC framework of midwives in relation to obstetricians and nurses, are still not clear. This is one major barrier to also providing quality maternal and newborn care through the provision of midwife-led care in Bangladesh. Once all stakeholders involved are aware of the scope of practice and enough midwives are in place, the control of the midwife-led centres may shift to be in the hands of midwives, as stated by a programme manager of an NGO:

"They (MMS: the midwives) need to be dedicated and they need to be given entire control of the birthing unit (…) and enough of midwives need to be in place. In our health complex, 120 to 160 deliveries happen every month. You need round the clock midwives, four a day to cover it up (…) the role clarification needs to be very clear. That what the gynae [gynaecologist] and OBS [obstetric] specialist will do, what the nurses will do and what the midwives will do …. this broad clarification is not still there." (Programme Manager 1)

NGOs support the development of public midwife-led centres through mentorship programmes. Often, these mentors are medical doctors (often not obstetricians), as the hierarchy in the system allows them to give orders to nurses (who sometimes oppose the introduction of midwife-led care) who need to obey the medical doctors. This doctor explains:

> *"Obviously it is very important that she [the mentor] is a doctor because she can ask the nurses to act accordingly and the nurses have to obey her order." (Medical and allied health professional 3)*

The midwives' association recognised that midwives working under government structures need support from mentors who are medical doctors, as they support the midwives providing midwife-led care. At the moment, although midwives are able to lead, these medical mentors are needed, as the health care system does not yet recognise midwives. It was seen as a necessity during the time of transition, as inexperienced, senior midwives are working in the country thus far. An expert stated:

> *xxx [midwife working in midwife-led care] has a mentor and the mentor is the medical doctor. The midwives are leading but the mentor is behind her, so they are empowered, but in the government setting no one is behind us. (…) Yes, midwives are capable to leading the care as a midwife but in government situation, the environment is not positive to do everything by the midwives. So (we) need to support the midwife to be a leader" (Expert 5)*

Although the scope of midwifery practice is included in the midwifery standard operating procedure for midwifery care, one of the challenges to autonomy within a midwife-led model of care is the lack of power to prescribe medications, except for oxytocin in postpartum haemorrhage to actively manage the third stage of labour. This is seen as problematic, especially in emergency situations, for example, if a woman needs to be stabilised for transfer if an obstetrician is not available. One expert explained:

“Now we are fighting to figure out the process how the midwives can prescribe the drugs but it is still it is a problem. They can prescribe oxytocin but we are advocating in the emergency situation they can prescribe other kinds of drugs independently and in this situation where doctors are not available a midwife can prescribe the medicines before transfer for the lifesaving purpose” (Expert 4)

Women receive a prescription for micronutrients from the medical doctor before they leave the midwife-led centre. This prescription of vitamin, calcium, iron and a pain relief medication cannot be signed by the midwives.

These findings highlight the need for a shift of power to midwives as they are the lead health care professionals on the continuum for childbirth within a midwife-led model of care. It was clear that this shift will take time and requires policy support to happen. The way in which the centres are set up and run is also a challenge, as expressed in the next theme.

SUB-THEME: MANAGING AND SUPERVISING IN NEW ORGANISATIONAL STRUCTURES

The next sub-theme was about the importance of managing and supervising in the new organisational structures developed through having midwife-led centres. Some Upazila Health Complexes, in which the midwife-led centres are based, are run by medical doctors, but the midwife-led centres are managed by midwives. This is what is envisioned by most of the experts who advise government. However, this is not yet the norm. In many instances, nurses still run the maternity ward, including the midwife-led centres. In some of the NGO facilities, managers are neither nurses nor midwives but “just” managers who take care of the duty roster and represent the health facility. In other NGOs, especially at the primary care level, where there are no medical doctors or nurses are absent, midwives run the centre. In the government system, medical doctors run the secondary facilities, but midwives are in charge of the maternity ward, although supervised by a doctor.

In most of the midwife-led centres, midwives are not in control over clinical decision-making or the management of the centre. Nurses currently manage the maternity ward, but the vision of an expert is that a midwife will be in charge:

> *"This is the time to switchover from nursing to midwifery. We need nursing care and we don't have any conflict but the labour room in charge should be a midwife, ANC, PNC corners (MMS: post-natal wards) should lead by the midwives so that kind of differences we are expected and need that." (Expert 4)*

In other NGO centres, the managers are neither midwives nor nurses, but the clinical decision making is left in the hands of the midwives, for example:

> *"In the midwife-led care centre, we have a manager [who is not a midwife] just to do the official work and they are maintaining the duty roster. Midwives are receiving the women and making decision on all that is dealt by the midwives (…) (Midwives FGD 2)*

There were some who felt management should be a shared role between medical doctors and midwives, but midwives should be in charge of the labour room in the future.

In the two midwife-led centres that are on the Union sub-centre level, midwives work on their own. The midwife who is placed in the centre is also in charge. She also supervises assistant midwives and up to four fieldworkers. This programme manager explained:

> *"The midwife is the in-charge of the led care centre and she is the main responsible person. This means she is the operational lead and coordinates with the government representative and attends the weekly meetings or whatever the periodical meeting is. She is responsible of the reporting to (the NGO) and other government machinery when it is required so the midwife is the in-charge of the centre and under her there is an assistant midwife." (Programme Manager 3)*

Midwives lack leadership and management skills and so often feel unwilling or unable to assume these roles. Leadership and management are not part of their initial education and are not included in their competencies.

> *"Our students are very good skill wise in terms of service provision but [in] management there are a lack of skills." (Programme Manager 3)*

Overall, midwives working in midwife-led models of care are mostly not in charge of managing the centres they work in, such as the birthing room, the antenatal clinics and postnatal wards. This is despite the fact that a government order exists that provides the midwives with the authority to run their workplaces. If midwives work in settings in which they are on their own, they are also in charge of the centre and even supervise assistant midwives. The mentoring scheme that is described in the next sub-theme addresses this issue.

SUB-THEME: MENTORING AS KEY TO SUCCESSFUL IMPLEMENTATION OF MIDWIFE-LED CARE

Mentoring (sometime called supportive supervision) plays an important role in the successful implementation of the new model of midwife-led care and is the next sub-theme. After their initial education, midwifery graduates need support to change current practice and boost their confidence to be able to provide autonomous practice. Their mentors can be midwives themselves but often, they are medical doctors due to a lack of suitable midwives. Midwives are a new cadre that is not yet on an equal level in a medically dominated system. After the midwives are introduced in that system and become confident, the vision is that they will be able to lead the midwife-led centres which include the maternity ward and the labour room.

Mentoring was seen as a concept that goes beyond learning, as it enables people to change their behaviour. This perspective is shared by an expert:

> *"I don't think what they are studying it doesn't seem to cause radical change in behaviour in clinical sites. It seems to me from my observation of it that you*

need to have some mentoring in order to change people's behaviour." (Expert 1)

Another expert felt that mentoring midwives in midwife-led centres helps them to become confident in their profession. Mentoring enables them to become autonomous professionals, as they explained:

"[to be] confident they need initial support by the supervisor, mentor or someone from senior level midwives. they are not fully confident to work independently after completing their graduation." (Expert 3)

Mentoring was seen as the next important step in the successful implementation of midwife-led care in Bangladesh. Mentoring could provide support in clinical decision making, management and the process to become a midwife and create a professional identity, especially as this is a new profession in the country. Mentors were seen as critical in this change, as this programme manager said:

"we bring them (the mentors) on board because they will play a catalytic role" (Programme Manager 2)

Mentors have fought for the midwives to be placed and accepted in the hospitals or health centres. It was seen as important for the mentors to be medical doctors as they are able to give "orders" to the nurses (who do not want to let the midwives in), as explained by this obstetrician:

"This is fact that XXX is doing so much she is doing irrespectively their duty roster, knowledge and skill everything and she fought with the nurses and it is only because of the mentorship program the success is visible (…) for mentoring doctor is mandatory. (Obstetrician 3)

The perspective that the mentors of midwives should be medical doctors was also shared by a mentor who was a medical doctor herself. She provided an example of a public health district nurse whose role is to monitor the Upazila Health Complex but

who does not get the same acknowledgement or respect from medical personal who are in managerial and leadership positions. Medical domination in the system is visible in this example:

> *"There is one person district public health nurse and she is assigned to monitor the Upazila health complex but whenever she comes they are not given her that much importance because she is a nurse but whenever I came they always try to obey and whenever I talked to the Upazila Health & Family Planning Officer he is also a medical graduate so he is also accepting my views and the gynae consultant and the medical officers whoever I talk they accept me." (Medical and allied health professional 4)*

Existing medical hierarchies are used by experts advising the government to successfully implement the midwifery model of care. The Obstetric and Gynaecological Society of Bangladesh supports the introduction of the midwife-led centres in Bangladesh by providing mentorship opportunities. The aim of this programme is for midwives to lead the labour room and maternity ward, as this expert highlighted:

> *"We are focusing on the Obstetric and Gynaecological Society of Bangladesh (OGSB). So, the OGSB is putting the mentorship programme to initiate the midwifery-led services and the labour room protocol. (…) so, they are providing support so that the midwives can lead the labour room and maternity ward. so, I hope it will happen in the future." (Expert 3)*

Another expert provides a detailed explanation of why medical doctors are needed as mentors initially. First of all, the system is medically dominated and medical hierarchies exist in which medical doctors are able to talk to medical doctors equally. Midwives are a new profession and are not on the same level as medical doctors. Therefore, to introduce this new model of care and the new cadre, medical doctors play an important role as mentors. For example:

"The reason why to recruit the medical doctors and not midwives is this is new generation profession and the domination of medical doctors in our health profession. So, to enter the system we initially need the doctors to contact with the medical authority and our midwives will be prepared and later on we can recruit the midwives as mentor so this is the reason we have introduced the midwife led care" (Expert 2)

In other settings, midwives supervise and mentor the midwives working in the midwife-led centre. This supervisor who is also a mentor comes on a regular basis and can be addressed if the midwifery team has questions about issues they do not understand. This, however, is an exception.

Mentoring is key to successful implementation of midwife-led care in Bangladesh. Sometimes, the mentors who provide supportive supervision in the private sector are midwives themselves. In the governmental structure, public health nurses who come for monitoring visits are not respected by the health authorities who have a medical background. Therefore, mainly medical doctors have taken on mentoring positions to support the implementation of midwife-led care. Medical doctors are able to address issues relating to the implementation of midwife-led care within existing medical hierarchies, although the vision is to overcome these hierarchies and that at some stage in the future, midwives will be mentored by midwives in providing midwife-led care.

SUMMARY

In the theme "Empowering midwives to become leaders in care and beyond", several sub-themes provide evidence that the midwife-led model of care is a tool but also a reflection of the current status of midwives' empowerment. The midwife-led model of care provides an appropriate space for the newly introduced cadre to practice midwifery autonomously. It is the right space for the midwives to 'claim' midwifery, by developing skills and knowledge where interference from other medical professionals is absent. Similar to the aspect within midwifery practice, they are also spaces to

support the learning of students and new graduates. Educators are able to stay competent by working regularly in the midwife-model of care. Empowerment in this regard means being and becoming skilled and competent. While this is included in the midwifery standard of practice, one of the challenges for autonomy within a midwife-led model of care is the power to prescribe medications. The prescription example highlights the need to shift professional power to midwives, as they are the lead health care professionals on the childbirth continuum within a midwife-led model of care. Midwives working in midwife-led models of care are mostly not in charge of managing the centres they work in, such as the birthing room, antenatal clinics and postnatal care wards. Mentoring is regarded as a key tool for strengthening clinical decision-making and managerial leadership in midwife-led models of care, although the current systems that medical doctors mentor midwives can be seen as replicating a power imbalance within a medically-dominated system. Midwives will need to strengthen and assert their leadership skills within an enabling environment to become leaders in care and beyond.

In the following theme, organisational aspects of midwife-led care are examined.

6.2.4. THEME: ORGANISING MIDWIFE-LED CARE

INTRODUCTION

This theme highlights the way midwife-led is organised. This is linked with the category “organisation of care” in the QMNC framework and contains issues relating to services that are available, accessible, acceptable and of good quality and which are supported by adequate resources and provided by a competent workforce. These services should be provided along the childbearing continuum and integrated across community and health facilities.

SUB-THEME: WAYS OF PROVIDING CARE

The first sub-theme related to the aim of optimal care. Midwives working in midwife-led centres are able to give their full attention to women during labour and birth. A

midwifery educator overlooking the placement of midwifery students in private (NGO) midwife-led centres describes this care as “extra”, which differs from the care provided in the obstetric-led hospitals:

> *We also can explain the extra care that the midwives will provide in the midwife-led care centre (…) there someone always besides you which you can’t expect in a hospital. (…) one midwife for one mother. (Teacher 1)*

With regards to organising care, in contrast to the concept of one-to-one care in childbirth or specifically during individual counselling, the concept of group counselling is described as part of the midwife-led model of care in Bangladesh. Though it was only described by midwives and programme managers working in private (NGO) settings, it might be part of the public health system as well.

Group counselling is provided by midwives working in private midwife-led centres as part of a community outreach activity in which a group of “mothers” are gathered. This concept has already been described as a way to empower women. In this section, the model is described to show how care is organised. In these groups, information is provided, but care activities also take place. This concept is described by a midwife:

> *I am raising awareness in the mother’s club. Mother’s club means ten to fifteen mothers gathered in a place and I go there to provide family planning and ANC, PNC and childcare. (Midwife Interview 2)*

In another private midwife-led centre, midwives counsel groups of women in monthly meetings and provide them with information about childbirth.

> *We have monthly EDD meeting with the mothers who are expected and provide them counselling for the preparation of the birth and how do they do come up with in the centre and the need for the baby. (Programme Manager 5)*

In some of the health centres, especially if midwife-led centres are based in the Upazila health complexes, midwives work in teams. This is also promoted by experts advising government and government officials as well. In the midwife-led centres in Eidgor and Goronja On Union (primary) level, the tertiary level, midwives sometimes work as the only midwife. They are, however, part of a team comprising other health care providers.

A government official describes the staffing numbers as being four midwives in each midwife-led centre at the Upazila health complex (secondary level). In some private midwife-led centres, traditional birth attendants also join the teams and support the midwife of the centre. This has a positive side effect, as the inclusion of these traditional health workers also increases the acceptance of the midwives in the community. The midwife is in charge of the team that comprises a midwife-assistant and four field workers working in the midwife-led centre. This is outlined by one of the managers:

> *"They are not there are variety of people you are performing the duties, some of them are TBAs and these are aged women who have experience of conducting many deliveries. So we brought these women in the team and provide them with a respectful job so that they will not think that they are the competitors and some of them have joined our force.(…) So the midwife is in-charge of the centre and under her there is an assistant midwife so far we have the traditional people who used to be the assistant to the midwife now we call midwife assistant in each centre so if we take only one centre for example there are midwife, midwife assistant and four field workers in each of the facility." (Programme Manager 3)*

One of the public midwife-led centres has higher staffing numbers. Additionally, adding to the midwives who are appointed by the government, midwives employed by an NGO enrich the teams so that there are always two midwives per shift.

Midwife-led care is organised under different concepts, including one-to-one care that is tailored to individual women, but also group counselling. In the midwife-led centre where a sufficient number of midwives work, midwives are able to work in teams of four. This is the aim at the Upazila health complex level, but at the tertiary level, such as in Union sub-centres, midwives sometimes work on their own supported by a team of assistants. The next sub-theme described whose services are integrated in the midwife-model of care.

SUB-THEME: INTEGRATING SERVICES

The next sub-theme is about the provision of integrated services. This is apparent in the private, midwife-led centres but midwives in the public health services also expressed their desire to increase their skills, especially in the area of family planning, but also in cervical cancer screening and post-abortion care, which are activities that are within their scope of practice. Adolescent health is included in the outreach services of midwives working in a private midwife-led centre. The political vision is the provision of integrated services, especially at a primary health care level, that include issues which are part of the sexual and reproductive health package, including clinical management of rape cases, adolescent health, Visual Inspection with Acetic acid (ViA) and issues addressing violence against women. This is outlined by an expert advising the Government of Bangladesh:

> *"The midwives can work in the normal delivery, antenatal care, post-natal care, family planning items and not permanent but temporary items like the violence against women, clinical management of rape cases, the adolescent care, visual inspection of acetic acid VIA test all those things can be done by the midwives. So, in the primary level in the Upazila health complexes if the midwives are ready being provide this support and care" (Expert 3)*

Midwives working in midwife-led centres have a strong desire to strengthen competences that enable them to provide integrated services. Midwives working in a governmental health facility express this in the following quote:

> *"We know how to conduct deliveries but we would like to get training on family planning counselling, IUD, Injection, VIA test. Also post abortion care." (Midwives FGD 2)*

Midwives working in private (NGO) midwife-led centres have included services for adolescents on their outreach and in-house activities. They specifically target households with adolescent girls to address issues relating to sexual and reproductive

health, such as menstrual hygiene. One of the midwives working in such a team explained:

> *"During our visits in the community we are identifying households with adolescent girls and talk with them about the adolescent health care. We also encourage them to visit the clinic and take adolescent health care and counselling on menstrual hygiene, sanitary pad, iron tablets. We are providing a package including sanitary pad, iron pills and milk powder so that she can take care of her menstrual period and will be able to deliver a healthy baby while she got married in the future. If she will be healthy she will be able to deliver a healthy baby and most of the girls in the community are malnourished, we are providing counselling on nutrition and we make them aware how she can maintain her health through a proper diet and take care of her reproductive health." (Midwives FGD 1)*

Midwife-led care, especially when provided in the private sector, aims to integrate services in the community. This includes preventive measures such as counselling on health and nutrition, cervical cancer screening and also care for adolescents. Services relating to gender-based violence and clinical management of women who were raped are included in the integrated package provided in the midwife-led model of care. Midwives working in public midwife-led models of care expressed their desire to receive continuous professional development to be able to provide integrated services.

SUB-THEME: MONITORING AND EVALUATING SERVICES TO IMPROVE MIDWIFE-LED CARE

The next sub-theme highlights the importance of monitoring and evaluating midwife-led services in both the public and the private sector. As midwifery is a new profession, currently mainly public health nurses at the district level monitor the midwife-led centres. However, the government has started to deploy district public health midwives and is planning to expand this system around the country. In the private (NGO) sector, not only is facility-based data included in the monitoring and evaluation process;

women's voices also play an important role in the desire to improve services. The current system of monitoring by a district public health nurse is outlined by a mentor who supports a midwife-led centre in the government sector:

> *"There is one person district public health nurse and she is assigned to monitor the Upazila health complex" (Medical or allied health care provider 4)*

An official from the midwives' association describes the change in the system in which currently five district public health midwives are recruited and posted to monitor and supervise midwives working in midwife-led models of care. These public health midwives graduated with the six-month post-basic certificate in midwifery and are currently enrolled in a Bachelor of Science programme.

Monitoring and evaluation is different in the private sector, where women provide feedback about the midwifery services they received as part of regular monitoring and evaluation activities. The information is used to improve services and to report to the leadership team of the organisation. However, this information does not appear in official health statistics, as reported by a programme manager who coordinates the midwife-led centre of an NGO:

> *"I am the person who is coordinating I have things in my mind how it is running because BRAC authority wants feedback from me, so I have the query and go to the community and I talk with them as a general member and talk with people who has received services from the midwives and got very good feedbacks from the mothers. (…) They have been saying that the midwives are friendly and they talk to us and they like sisters. We are documenting the numbers every month in a chart including family planning, care giving and ensuring the respectful maternity care and everything is recorded from the checklist." (Programme Manager 5)*

Monitoring and evaluation activities, as essential organisational elements in the provision of midwife-led care, are scarce. Only a small number of district public health midwives have been deployed so far and further information about their roles and

responsibilities has not been shared. The private sector, however, has established monitoring and evaluation activities that also include the community perspective. Women who received care within the midwife-led model provide feedback that is used to improve future services. The next sub-theme describes how policies and procedures are part of the organisational structure.

SUB-THEME: GRANTING POLICIES AND PROCEDURES

An important part in the area of organisation of care are the rules and regulations for midwifery, i.e. the policies and procedures. In Bangladesh, these documents have been developed by the government with the support of international experts. These documents are issued by the highest health authority in the country and local health authorities and midwifery education institutes must follow these orders when providing midwifery services. Some stakeholders understood the positive aspect of these rules and regulations, i.e. midwives working in newly established midwife-led centres, functional centres that were headed by nurses in the past. Other stakeholders, such as the local health authorities, need to comply with government orders such as the 24 hour, seven day a week provision of midwife-led services, but still face a shortage of staffing.

One of the documents that underpins midwife-led services are the standard operating procedures, as mentioned by a government official:

> *"Already we have a book of standard operating procedures and job descriptions and all of the midwives received that." (Government Official 1)*

This is confirmed by the experts:

> *"A midwives' job description is already in approval and also SOP [standard operating procedures] midwives working and also the midwifery led care guideline" (Expert 5)*

Government orders that are issued on a top-down basis play an important role in the establishment of midwife-led centres. Midwives working in these acknowledged that such documents were helpful in organising the set-up of their facility, for example:

> *"We shifted the delivery room and there was a big fight with the labour in-charge (MMS: a nurse) (…) the civil surgeon came and told her that separating the labour ward is the government order and one senior midwife will be the in charge." (Midwives FGD 2)*

The government order that was centrally issued by the Directorate General for Health Services provides rules about staffing of midwife-led care centres. This government order is perceived to be problematic locally. The staffing of midwife-led centres at Upazila health complex level with midwives instead of nurses, although there is a lack of sufficient numbers of midwives, is perceived as problematic. A representative from the local health authority comments:

> *"The letter issued by the DGNM will create problem and it is mandatory to execute the order from higher authority and to follow the instructions of the letter will create a problem because we don't have 24/7 setup for the delivery unit and I need to get support from the staff nurses but this letter marked demarcation between midwives and senior staff nurses and having only three midwives is very difficult run a 24/7 service. So, the issues are problematic for the local management." (Government Official 2)*

The Government of Bangladesh holds an organising role and has issued another government order that ensures that midwifery students are sent to midwife-led centres during the practical part of their education.

> *"The government order (was issued) that all the institute should send their students. So, they should plan to send their student MLC sites." (Government Official 1)*

Midwives are allowed to open their own private midwife-led centre, as described by a midwifery educator working for an NGO:

> *"But the students are motivated and they want to do such things and willing to open their own clinics. The government is helping just they need to work in collaboration with other health professional but they can do it." (Teacher 1)*

Policies and regulations provide the organisational structure for the implementation of midwife-led care in Bangladesh. They help to set professional boundaries and provide the basis for the deployment of midwives working in midwife-led models of care. Government protocols allow the educational institutions to send their midwifery students to the midwife-led centres during their clinical practice. There is a shortage of midwives and local health authorities are therefore unable to staff the midwife-led centres as per the government orders. Midwife-led care not only requires policies for organising care. The resources needed to provide midwife-led care also need to be organised. The next sub-theme will provide evidence related to this issue.

SUB-THEME: CALCULATING THE COST OF CARE

Organisation of care also requires care to be adequately budgeted and costed, so that care is affordable for everybody in a society. In Bangladesh, care at childbirth is part of the essential health care package.[18] However, if women seek care in the private sector, out-of-pocket payments are needed. The high rates of out-of-pocket payments for health care services were described earlier. Woman and their families must cover part of the cost of midwifery services. For example: IUDs that are provided to women in private (NGO) facilities have to be paid by the women themselves, although the cost is small:

[18] Bangladesh Essential Health Care Package include maternal and newborn health services free of charge

"This is not free. Just minimum cost." (Programme Manager 5)

Low or no service fees for midwife-led services increase accessibility of services by midwives working for an NGO, which is thought to reduce maternal and newborn mortality. For example:

> *"Previously these mothers are unable to receive any treatment and in this service, it is located in the middle of their locality and here they can get many things/services free of cost especially free drugs during antenatal care and here they have get a free card of investigation as long as they need one until the completion of their pregnancy the whole cost will be bear by the NGO. This is the reason why the rate of maternal and child mortality is being reduced." (Medical or allied health professional 1)*

A similar perspective is provided by some midwives working in private (NGO) midwife-led services:

> *"Some of the community people doesn't want to come to this facility and we motivate them through counselling and inform them that home delivery is not safe and there is a community clinic available with low cost but good service. After [this] counselling they feel happy and comes to this facility to have a safe delivery. This is one of the good service in the midwifery led care centre I think" (Midwives FGD 1)*

However, women who received services in the NGO facility have heard that costs will increase, which hinders them from coming in the future and from recommending the services to others, as mentioned by a woman:

> *I would love to (MMS come back to receive services) but nowadays they have increased their service charge which is becoming costly for us and we have been looking for alternative facilities available. (Women FGD 1)*

Service fees that women cannot afford are identified as a barrier with regards to the accessibility of services by midwives. They make efforts to find the money for these women so that midwife-led care can be provided. This is explained by a midwife working for an NGO:

> *"In the beginning while the patients were not interested to visit the health centre I went to their home with our community field worker to motivate them and in some cases I have given them their required services at their doorstep. I also managed people who doesn't have money to buy the services and provide them free of cost care." (Midwife Interview 2)*

In the past, when nurses provided maternal health services in public facilities, they asked for irregular user fees.[19] Midwives working in a public midwife-led centre do not charge additional fees. Cost for care plays an important role in the midwife-led centres compared to physician-led centres, as described by a midwifery teacher:

> *"And if could explain the services she may be convinced and the low cost also attract her to get the service. Compared to the (care provided by) doctors services provided by midwives are cost effective." (Teacher 1)*

An example is provided that shows that caesarean sections are costly compared to normal vaginal births which is a reason why women and families push for the latter, as explained by a midwife:

> *They (MMS: doctors in hospitals) encourage the patients to have C-section but the people of the rural community are not able to pay the cost of the caesarean section and they are keen to having normal vaginal delivery" (Midwives FGD 1)*

[19] Usually, maternal health services in the public sector are covered within the essential health service package but some health care providers ask for extra money

Cost for care is an important organisational aspect that is linked with accessibility and quality of care. Midwife-led care provided in the governmental facilities is free of charge, as it is included in the essential benefit package. Although user fees that are usually part of the private midwife-led model of care might pose a barrier to access care, they are also seen as an expression of the quality of care. Caesarean sections are usually too expensive for people in rural communities, making midwife-led care that supports normal births a cost-effective alternative option.

SUMMARY

The "Organising midwife-led care" theme has described a number of elements, including the way care is arranged (one-to-one care, group or individual counselling and team or individual care). The midwife-led model of care is organised in accordance with the local situation and staffing numbers. To date, there are still insufficient numbers of midwives to ensure adequate staffing to be able to organise midwife-led care. Integration of services, cost, procedures and evaluation of care and services differ and depend on the service provider, with major differences between public and private (NGO) services. In the final theme, the midwife-led care that is provided along the continuum will be described.

6.2.5. THEME: PROVIDING CARE ACROSS THE CONTINUUM

INTRODUCTION

Providing care along the continuum relates to the concept of continuity of care as part of the midwife-led model of care in Bangladesh. It is linked to two of the categories in the QMNC framework; the "organisation of care" and the practice categories, in particular "education, information and health promotion". It comprises the findings about the care that is provided for all women and newborn infants along the continuum of antenatal, intrapartum and postpartum care.

First, the sub-theme "accompanying women across the continuum" is described. It is followed by the sub-theme "investing in health promotion and prevention", which is also

part of midwifery practice along the continuum and relates to the QMNC section on "education, information and health promotion".

SUB-THEME: PROVIDING CARE ALONG THE CONTINUUM

The midwives' scope of practice includes care along the continuum: from pregnancy, to labour, birth, and post-partum period, up to six weeks after birth. The scope of practice also includes tasks relating particularly to health promotion and education in sexual and reproductive health, pre-conception, antenatal and postnatal care, breastfeeding, family planning, infant health and other relevant areas of women's health. Midwives in Bangladesh are well-positioned to provide continuity of care and carers, both in the facility and in the community. As midwives are currently posted in the Upazila health complexes and Union sub-centres, they work close to where women are. A manager shares her perspective:

> *We have so much challenges in maternal mortality - the doctors are not ready to give time especially in the periphery region you will not get the skilled person so this care can be filled up by these midwives and they can provide and continuity of care (…)." (Expert 4)*

Women come to the midwife-led centre during their pregnancies to receive antenatal care. Sometimes, the same midwife is available and is able to provide the concept of continuity of carer. This woman provides insights:

> *"I met two people in two rooms. one was known to me and the other one was new" (Woman Interview 3)*

Women come to the midwife-led centres for at least four antenatal checks during their pregnancies. If they get to know a specific midwife in that period, they can ask her if she could come to assist her during labour and birth. The concept of continuity of care and carer is known and can sometimes be provided in the midwife-led centre that is run by an NGO. After giving birth in the midwife-led centres, women stay another 24

hours before they go home with their newborn. Here is how a manager describes their service:

> *"The women can give preference for a particular midwife's service because they know each other. We are giving them the friendly environment basically the women are preferring their mother to stay with them during the delivery" (Programme Manager 5)*

Continuity of carer cannot always be maintained in the midwife-led centres. Although women mention that it would be convenient for them, midwives apply for government positions and shift from the private to the public sector, which means women are not taken care of by the same midwife throughout the course of their pregnancies, labour, birth and postpartum period. A woman shares her experience:

> *"The midwives are being into rotation and we don't have the same person all the time during our visits which is bit inconvenient for us. The midwives are young in age and they are unmarried we are feeling shy to discuss our pregnancy with them. (…)*
>
> *Yes, and they have been disappearing within a month and a new face arriving." (Woman FGD 1)*

The concept of continuity of care and continuity of carer exist in the Bangladeshi midwifery model of care and it fits with the scope of practice of midwives. However, due to shortages in staffing and midwives shifting from the private to the public sector, the concept of continuity of carer cannot always be upheld.

SUB-THEME: INVESTING IN HEALTH: HEALTH PROMOTION AND PREVENTION

The second sub-theme relates to the importance of health promotion. Midwives who work in midwife-led centres in Bangladesh provide care along the continuum, which also includes health promotion and prevention. These midwives engage in outreach

activities, but also provide preventive care in the centres. Midwives target specific groups, such as adolescent girls who are vulnerable. Midwives also provide information about menstrual health and sexual and reproductive health. They address issues about nutrition and support women who breastfeed. In the pregnancy period, midwives provide antenatal care which includes forms of screening. During childbirth, midwives working in midwife-led centres are able to prevent post-partum haemorrhage.

One of the areas in which midwives are involved is family planning. A midwife working in a private MLC underlines this:

> *All kind of family planning services including short term pills, condoms. As the midwives we provide pill, condom and injectable (Woman FGD 1)*

A programme manager working for an NGO explains that in the area of health promotion, midwives not only provide family planning, but also contribute to counselling in healthy eating. The midwives are able to target vulnerable groups such as adolescents and talk about menstrual health and reproductive health:

> *"Midwives provide nutrition counselling and we have session for the adolescent girls and we are making aware on the menstrual and reproductive health and also family planning." (Programme Manager 5)*

A midwife describes the health promotion and prevention activities in the community in detail. During home visits, midwives target adolescent girls to talk about their health, with a focus on menstrual hygiene and nutrition. Health education is seen as important, as adolescent girls in the community do not have access to education. The connection between the investment in these preventive measures and the healthy outcome of the woman's future childbirth is clearly stated:

> *During our visits in the community we are identifying household with adolescent girls and talk with her about the adolescent health care. We also encourage them to visit the clinic and take adolescent health care and counselling on*

menstrual hygiene, sanitary pad, iron tablets. (…) If she [is] healthy she will be able to deliver a healthy baby and most of the girls in the community are malnourished" (Midwives FGD 1)

Midwives working for an NGO received training to provide family planning and nutrition counselling, but also supported other preventive measures such as breastfeeding support and vaccination.

Health promotion and prevention along the continuum of women's and newborns' health is part of midwives' scope of practice and is included in the midwife-led model of care. This is, according to the QMNC framework, is an aspect of care that is needed for all childbearing women and infants. However, activities related to health promotion and prevention have mainly been implemented in private sector midwife-led models of care. The next sub-theme describes how care is organised once complications occur and referral is needed.

SUB-THEME: CARING FOR ALL WOMEN AND INFANTS, WITH AND WITHOUT COMPLICATIONS

The next sub-theme is about the provision of care for all women, not just those who are low risk or do not have any complexities. Midwives working in midwife-led centres have to refer women during childbirth before or when complications occur to a comprehensive emergency maternal and newborn care facility (CEmONc). In this context, midwives rely on well-established referral mechanisms. A line of communication is important and midwives sometimes take the decision together with a midwifery colleague or obstetrician and collectively make decisions about the mode of transportation. Communication with the facility is also important, so that the health workers at the receiving facility can prepare for the woman or newborn. With regards to transport, there are various ways such as ambulances (cars) and Tom Tom walas (*a battery run three wheelers*). Sometimes, midwives working in midwife-led centres join the woman or newborn during transfer, but often they do not, depending on the

staff who are available to continue to the midwife-led centre. None of the midwives mentioned that they would be able to stay with the woman in the facility once referred. A programme manager working in an NGO described their referral process in detail:

> *"Yes, normally the referral system is like this we have three ambulances and all of the centres are having important phone numbers like nearest government hospital, our hospital (…) There are five numbers of TomTom wala (a battery run three wheeler) and these three wheelers is being used to transport nearby facilities and if the midwives assess the case critical obstetric case then we refer with the ambulance to the XXX (…) The facility once informed about the patients is coming they prepare themselves even middle in the night." (Programme Manager 3)*

A programme manager from another NGO explains that the medical doctor or manager of the midwife-led centre provide instructions and documents to establish the referral process:

> *"Before referring we have to follow a procedure and should follow the instruction of the doctor and the manager. It is also needed some documentation." (Midwives FGD 1)*

In one of the midwife-led centres that is run by an NGO, medical doctors are always on call so that midwives are able to consult with them if complications occur and a transfer might be necessary. This is documented and used for analysis in the future. The next level facility receives the woman or newborn through a contact person the NGO provides in each of the three possible referral facilities. Transport is arranged by the NGO as well. The manager explained:

> *"When they (the midwives) are referring from this centre to another centre they have to document why they are doing so. (…) we have strong collaboration with the referral centre. Then they report us on what is happening and keep the record." (Programme Manager 5)*

Another programme manager from the same NGO provided more details on their referral mechanisms from the midwife-led centres.

> *"They always call them and the manager and their regional manager have interactions so what is happening (…) also the rule of referral how the in-laws of the mother will support and how the phone number will be used." (Programme Manager 6)*

Midwives working in the alongside midwife-led model of care in Upazila health complexes contact the obstetrical consultant before referral. In some of the Upazila health complexes, all CEmONc signal functions, including the possibility to conduct a caesarean section, are available and referral from the midwife-led centre to another facility is not necessary, for example:

> *Some health complexes have the facility (MMS: to conduct caesarean sections) but most of the Upazila based on the data we have collected the midwives are conducting the normal deliveries and increase the number of the normal deliveries. (Government Official 1)*

Health authorities felt that referral from the Upzila health complex (secondary facility) to the medical college hospital (tertiary facility) could be avoided if CEmONc functions were available and an obstetric consultant were present at the facility. Once patients and their families realise that referral to another level of care is necessary, they might avoid the facility in the future and stay at home or seek care directly in the tertiary facility. This is a concern, as explained here:

> *"The consultants are far away from the community and there are not available in the sub district. With a simple health complication, I have to refer them to the district of medical college hospitals (…) If this is happening, I am losing many of the service receivers and I am not fully ready to provide all the necessary care for them is the truth." (Government Official 2)*

An expert who advises the Ministry of Health works on the issue of referral from midwife-led care in secondary facilities to tertiary facilities. Often women who are transferred from an Upazila health complex to the medical college hospital die on the way and measures are therefore taken to stabilise the woman in order to transport her safely to the next level hospital. The expert said:

> *"Doctors also doesn't want to take the risk and they are also referring to the nearby hospital or medical college but on the way we lost many cases so we are trying through the MNC to manage the 24/7 service and also emergency stabilisation so the PPH and eclampsia management is not still happening we cannot manage but I think we are trying our best to establish this emergency stabilisation." (Expert 2)*

Midwife-led care is provided for all women. Most women and their newborns need only the midwife to receive essential care, but a few women and their newborns, especially if there are complications, also need to be seen by an obstetrician or paediatrician. In the midwife-led centres, however, midwives are often not able to stay with women during referral and never when care in the next level facility is needed.
Midwives feel that they are prepared to deal with critical cases that can occur during birth, but continuous professional education is necessary to stay competent. Here is how a midwife expresses this issue:

> *"I think I am prepared but I must have training on dealing with critical cases, if I can solve critical cases I may be very happy. I need more trainings." (Midwives FGD 1)*

Midwives working in midwife-led centres collaborate with medical doctors if complications appear. So far, the newly graduated midwives are not regarded as being competent enough to make clinical decisions about the management of a complex woman, as explained by a midwifery educator:

Still now the midwives need to consent from the doctors and in case of any complication you have to take advice from the doctors and if the midwives wanted to deal with the complicated cases she has to take permission from the doctor. (…) Our midwives are also new so they can't take any decision independently. They are trying and they are doing great gradually." (Teacher 1)

Once midwives identify complications in childbirth, continuity of care by a known midwife or a team of midwives is no longer possible. Care that is needed for childbearing women and infants with complications usually ends the provision of midwife-led care and often, as gynaecologists are not present in Upazila health complexes where some of the alongside midwife-led models of care are located, women are transferred to a tertiary facility. During the referral, the midwives are usually not present.

SUMMARY

The provision of care along the continuum is a major part of this new model of midwife-led care in Bangladesh. Midwives reach out to the communities and provide care that includes wider sexual and reproductive health issues such as adolescent health, family planning, breastfeeding and others. The role of the midwife in these health promotion and health education activities is regarded as crucial for reaching the most vulnerable populations. Before or when complications occur, midwives need to refer women or newborns from the midwife-led centre, which is usually a basic emergency obstetric and newborn health care centre, to the next level of care. Continuity of care or carer is usually not maintained from the moment of referral.

Overall, midwives can, and should, provide care along the continuum but still there is a workforce shortage which leaves continuity of care and carer as a vision for the future.

6.3. SUMMARY OF FINDINGS

Midwife-led care in Bangladesh is in a transitional process. The findings from this case study provide an in-depth description of the implementation of midwife-led care in the

country and explain how midwife-led care has been provided in one lower middle-income country.

It was evident from the findings that care providers working in the midwife-led model of care in Bangladesh are currently developing and expanding their skills and competencies and defining their professional roles and responsibilities. The basics, such as pre-service education and also the regulatory framework in place, are essential for developing and facilitating competent midwives. In midwife-led centres, these competencies and roles can be developed further. In the future, aside from core midwifery competencies, this will include also management and leadership skills and roles.

The philosophy of midwife-led care in Bangladesh is developing strongly: Midwife-led care in this context includes the application of human rights aspects in childbirth, such as enabling and supporting women‘s choice and consent. Midwife-led care in Bangladesh represents women’s empowerment, the reduction of fear in and the de-medicalisation of childbirth. This philosophy has the potential to become the essence for a movement to fill the current gaps in the health and wellbeing of women and their newborn infants in the country. The woman is at the centre of care. Her needs form the basis for the organisation of care and the provision of respectful maternity care is the goal.

The midwife-led model of care in Bangladesh provides care in a number of different ways, including continuity of care and carer, one-to-one care, group care and through counselling. The integration of services is recognised as being important and procedures have been developed according to the local contexts. The cost of midwife-led care varies and has implications for the accessibility and acceptability of care. Some midwife-led centres have included monitoring and evaluation processes but in this area, there is still room for improvement.

Midwife-led care in Bangladesh focusses on health promotion and prevention for all women and newborn infants in the country. This includes various aspects of midwifery and wider SRH services. Before or when complications occur, referral mechanisms are in place, but the role of midwives, especially in making clinical decisions

independently and initiating first-line management, is not yet clear. Further clarification as to the competencies and roles of midwives is needed and their position needs to be strengthened. Midwives working in midwife-led centres never seem to continue their care once a woman or newborn infant is referred to another facility and this is another area for future consideration.

6.4. DISCUSSION

APPLICATION OF THE QMNC FRAMEWORK

The QMNC framework (Renfrew et al. 2014) was used as a basis for data collection (interview and focus group discussion guides) but also as a structure to analyse the data and report the findings. While this approach is fairly new, others are starting to use the framework in this way. For example, Symon et al. (2018, 2019) adapted the QMNC framework to evaluate models of antenatal care in Scotland. This research found that it was feasible to use the QMNC framework as a data collection tool and as a lens to analyse data. The adaptation of the QMNC framework helped to find out what worked for whom and why, which enabled an assessment of the effectiveness of models of care. The application of the QMNC allowed for a comparison of the experience and perceptions of women with different models of care in the UK (Symon et al. 2018, 2019). The research team used the QMNC framework to explore the qualities of midwife-led continuity of care in Australia and came to a similar conclusion: the application of the framework was useful to detect barriers and facilitators to the provision of care (Cummins et al. 2020). My PhD study has taken the work by Symon et al. (2018, 2019) and Cummins et al. (2020) and extended it by also including a range of stakeholders such as policy makers, programme managers, service providers and service recipients who provided insights into the provision of midwife-led model of care in Bangladesh.

In my research, the QMNC framework was applied during coding of the data with data analysis software to organise the data according to the categories. The approach by Ritchie et al. (2013) was then used, first to detect elements, then key dimensions, and

finally to order the findings according to the five categories of the QMNC framework. Similarly to Symon et al. (2018), my study found that the themes that emerged were interconnected and that not all categories which appeared during data analysis were included in the QMNC framework before. My study found additional categories, such as management, supervision and mentoring within the "care provider" category, human rights in childbirth in the "philosophy" section and issues relating to team or individual care, one-to-one care and monitoring and evaluation of care and services in the "organisation of care" category, which might exemplify the specific situation of midwife-led care in Bangladesh.

WOMEN PROVIDING AND RECEIVING CARE FOR WOMEN IN A PATRIARCHAL SOCIETY

Midwifery is an exclusively female profession, providing care for women in a patriarchal society, and this was also highlighted through my study. Global work has shown that gender norms pose barriers to midwives providing quality care in low- and middle-income countries (Filby, McConville & Portela 2016; WHO 2016). Various socio-cultural concepts that are gender-related are prevalent in Bangladesh, such as "purdah" and "dowry", and these have implications in midwifery as women join the labour force and take on decision-making power in one area of society. As described earlier, female employment in Bangladesh lags behind (UN Women 2020) and therefore midwives working in rural areas employed by the government or an NGO are not the norm.

The gender dimension in midwife-led care in Bangladesh was also mentioned in a study by Bogren, Erlandsson & Byrskog (2018). In this research, midwifery students describe concerns about having to work outside their homes at night. One of the prerequisites of a successful implementation of midwife-led care in Bangladesh should therefore be, first and foremost, a focus on safety for midwives and midwifery students, as women providing care for other women. The issue around safety of midwives working in patriarchal societies has been revealed in studies on midwifery care in Afghanistan as well, where traditional attitudes towards women impact on midwives'

work, especially in rural areas (Turkmani et al. 2013; Wood et al. 2013). Social barriers to gender structures exist in Bangladeshi society, as explained here: “This influenced entry into midwifery education, carrying out midwifery work safely, and the development of the profession. These social and economic barriers were further enhanced by professional barriers due to the midwifery profession not yet being fully established or acknowledged in the health system” (Hasne Ara Akther MSc & Zohra Khatoon MSc 2019, p. 19).

Women as service recipients also face barriers in accessing midwife-led care in Bangladesh. Gender-based inequities in accessing midwifery services were not only reported by interview partners in this study, but also in earlier studies conducted in Bangladesh (Betron et al. 2018) and India (McFadden et al. 2020). While gender plays an important role in health care seeking behaviour in Bangladesh, economic status is the major contributor to health care seeking behaviour (Amin, Shah & Becker 2010). The limited economic status of women in Bangladesh is likely to impact on the capacity to access the midwife-led centres.

MEDICAL DOMINATION IN THE HEALTHCARE SYSTEM

Male domination in Bangladeshi society is replicated in the Bangladeshi health care system. The medical, male-dominated hierarchy in Bangladesh is clear and visible throughout the system: medical doctors are more likely to take on leadership and higher managerial roles compared to nurses and midwives (Joarder et al. 2021). Only medical doctors are able to run tertiary and secondary hospitals or health facilities. Medical doctors are able to prescribe drugs, with nurses and midwives not having this capacity. Medical doctors give the orders and nurses carry them out. Medical doctors outnumber nurses and midwives in Bangladesh (World Health Organization 2016a). As midwifery in Bangladesh originates from the nursing profession and “separated” from it, its perception is rooted in (male) medical domination over the (female) nursing and midwifery profession and this is highlighted as an ongoing challenge. Another issue that is rooted in the legacy or in midwifery originating from nursing is that nurses are seen as coming from lower social classes (Joarder et al. 2021).

Another issue that arose around the medical domination, aside from the gender aspect, is the issue of medicalised childbirth in Bangladesh and the contrast midwife-led care represents by supporting normal births. The medical domination has led to unnecessary interventions, such as excessive use of caesarean section, especially in the private sector. Midwives, in contrast, try to keep births normal and are seen as providing care in a respectful way. Women realise that institutional births often are interventional births, as outlined by the participants of this study. Medicalisation of childbirth practised in Bangladeshi facilities might pose a barrier to women seeking care in the facilities, as described in an earlier study conducted in rural Bangladesh (Afsana & Rashid 2001). The authors argue that "fear of hospitals and surgical instruments, and the stigma of being seen to be 'sick' and have *angohani* (a defective body) also influenced women's decision whether to seek birthing care in a facility" (Afsana & Rashid 2001). This notion seems not to have changed 20 years after the study and is now supported by the high rates of unnecessary caesarean section rates in Bangladeshi health facilities.

CONCLUSION

In this case study, the application of the QMNC framework (Renfrew et al. 2014) and its application (Cummins et al. 2020; Symon et al. 2018, 2019) and extension provided insights into the provision of midwife-led model of care in Bangladesh. The successful implementation of midwife-led care in Bangladesh will depend on addressing socio-cultural norms of women providing care for women in a patriarchal and a medical-dominated society. If these barriers are addressed, midwife-led care might be a game-changer in reducing the rates of unnecessary medical interventions and reducing fear. The outcome will be that higher rates of women will seek care in a safe clinical environment, receiving care provided by midwives. In the next chapter, the findings from the two reviews, the policy and health care analysis and case study will be brought together.

CHAPTER 7. BRINGING IT ALL TOGETHER: ENABLING THE PROVISION OF MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES

7.1. INTRODUCTION

This chapter first of all reminds the reader of the aim and objectives of the study and gives an overview of the method used and summarises the purpose of this research. It then presents a synthesis of the findings and discusses their implications that will provide a description of how midwife-led care has been implemented in low- and middle-income countries.

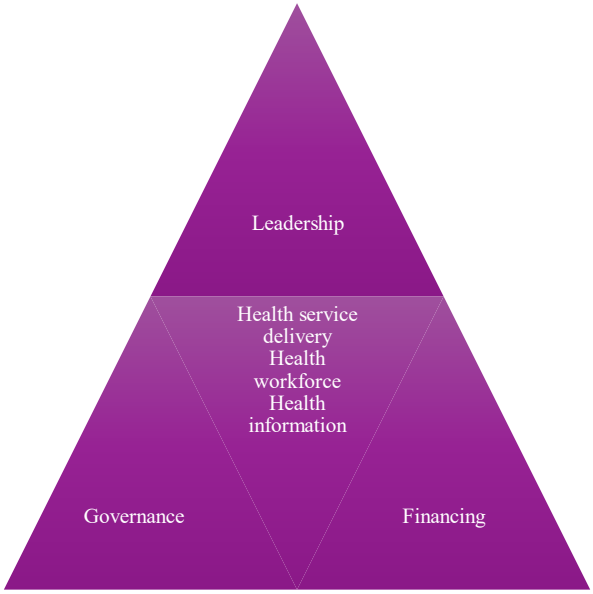
7.2. THE RESEARCH

7.2.1. PURPOSE

The aim of this research was to explore how midwife-led care is being implemented in LMICs. This chapter brings the findings of all three objectives together: what the outcomes of midwife-led care are; how this model of care has been provided; what the policies and health system efforts related to midwife-led care in a low-and middle-income country are and how midwifery care in low- and middle-income countries has been implemented.

7.2.2. USING THE COMPLEX ADAPTIVE SYSTEM APPROACH

Figure 20: Elements of the complex adaptive systems of midwifery care within a health system, adapted from Renfrew et al. (2014); Van Lerberghe et al. (2014)



For this study, a complex adaptive systems approach was used. According to this approach, the system, in this case midwife-led care in low- and middle-income countries, is made up of a variety of agents or elements within a health system. Overall, the behaviour of the system is not driven by decisions that the agents take. The agents interact in nonlinear ways and are defined by the relationships or patterns of interaction, not of its different components. These different components are emerging and are related to each other and cannot be reduced to the behaviour of a specific component. The interaction is constantly changing, it is dynamic and is constantly evolving (Sturmberg & Martin 2013). The complex systems approach takes a holistic perspective, assuming that the whole is greater as the sum of its parts (Byrne 1998).
The relationship and interconnectedness of the components or system blocks was described in the methods section (Chapter 4). The framework on quality maternal and newborn care framework developed in the Lancet Series on Midwifery (Renfrew et al. 2014) consists of elements such as service delivery, health workforce and health information. Additionally, elements on health system strengthening such as leadership,

governance and financing, as described in Paper 3 of the Lancet Series on Midwifery (Van Lerberghe et al. 2014), will be included as elements of the complex adaptive system framework as well. These building blocks are ultimately connected through the interactions of people within this system (Figure 20).

This chapter will bring the findings from the literature reviews and Phases 1 and 2 together and combine them according to the complex adaptive systems approach. First, the findings will be listed separately, before being synthesised according to the sections of the CAS framework, i.e. health service delivery, health workforce, health information, leadership, financing and governance.

7.2.3. THE FINDINGS

This thesis has looked into existing evidence on MLC in LMICs. The literature review of the evidence in LMICS showed:

- 1.a. Scoping review: Mainly positive outcomes of midwife-led care
  I. Midwife-led care might be cost-effective
  II. Midwife-led care might improve maternal mortality and morbidity, could reduce interventions and might improve Quality of Care
  III. Midwife-led care increases women's satisfaction, empowerment and meets the needs of the population
  IV. Some aspects within midwife-led care, such as pre-birth interventions to reduce fear of childbirth, seem promising whereas others such as respectful maternity care and newborn resuscitation need further attention

- 1.b. Integrative review: Implementation of midwife-led care varies extensively across LMICs
  I. Mainly midwives and nurse-midwives provide MLC, sometimes in collaboration with other professionals
  II. MLC is provided in a variety of settings: urban and rural; in primary, secondary or tertiary facilities; in the private and public sector; in free-standing or alongside midwife-led centres; midwives work alone or in teams

III. Midwives are not involved in policy dialogues about MLC

IV. Workforce shortages exist and impact the provision of MLC

V. Standards of practice for midwives such as education, regulation and training influence quality in MLC

VI. Supportive environments are important for MLC to thrive

A policy and health system analysis in Bangladesh showed that there had been considerable support to establish midwifery in Bangladesh. This included:

- 2.1. Steering and resource mobilisation
    I. Commitment at highest political level in the international arena paramount
    II. Political will needs to be translated in policy documents (e.g. strategic direction in midwifery, updated nursing and midwifery act, job description)
    III. Multiple donors align to support government's priorities
    IV. Domestic resources around midwifery will bring return of investment
- 2.2. A commitment to improving access and uptake of midwifery

    I. National Midwifery Strategy 2009 and 2014 update (upskilling and scaling-up of midwifery by both public and private sector)

    II. Workforce needs assessed 2013 > 18,400 and 25,000 diploma midwives are needed by 2029

    III. Creation of 1200 midwifery posts in 2015

    IV. Introduction of MLC in 2016 > 5 sites; 2019: 43 sites

    V. Barriers to access exist

    VI. Gap in the provision of basic and comprehensive emergency obstetric care

- 2.3. A commitment to improving effective coverage of maternal and newborn health services

    I. Health, population and nutrition sector plan aims to attain 65% of birth by skilled birth attendants

II. Improved vaccination coverage, increased contraceptive prevalence and fertility decline

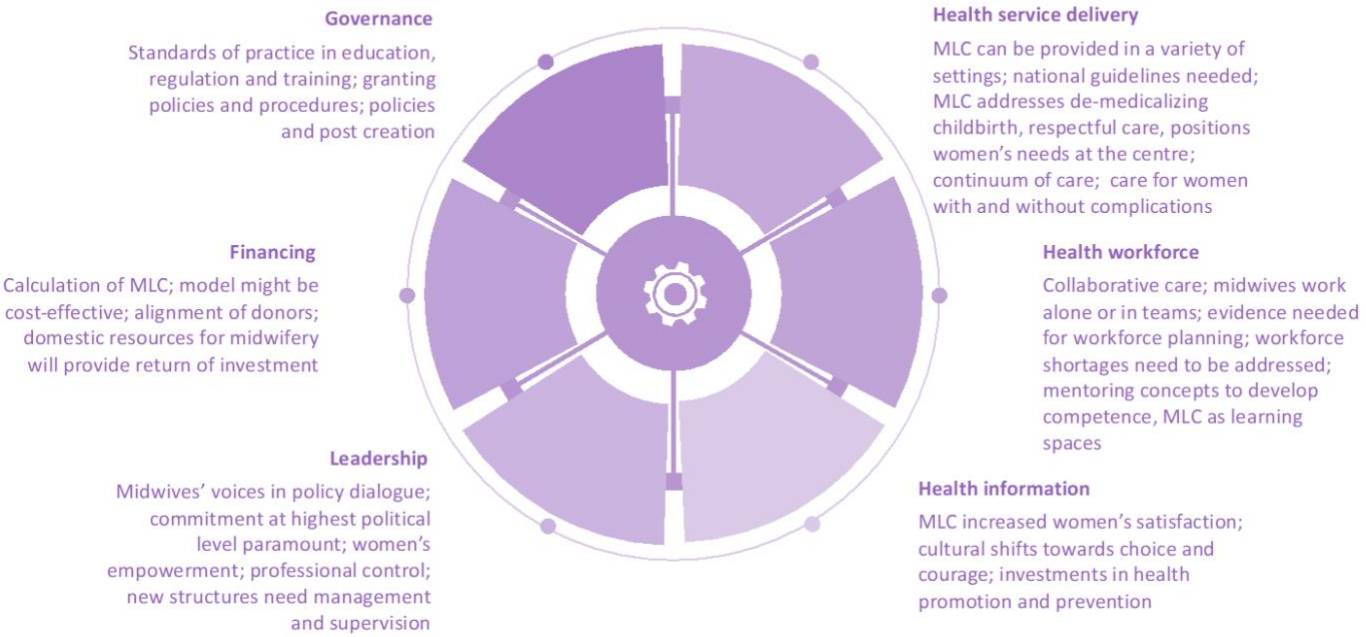
The empirical part of the research was a case study that looked at midwife led centres in Bangladesh. The themes were:

- 3.1. The heart and roots of midwife-led care
    I. Empowering midwives, empowering women
    II. Having choice and giving consent
    III. De-medicalising childbirth - too many interventions too soon
    IV. Shifting from fear in childbirth to courage
    V. Providing and receiving respectful maternity care
    VI. Positioning women's needs at the centre and providing and receiving respectful maternity care
- 3.2. Empowering midwives to become leaders in care and beyond
    I. A space for practising midwifery
    II. Midwife-led centres as learning spaces
    III. Having professional control
    IV. Managing and supervising in new organisational structures
    V. Mentoring as key to successful implementation of midwife-led care
- 3.3. Organising midwife-led care
    I. Ways of providing care
    II. Integrating services
    III. Monitoring and evaluating services to improve midwife-led care
    IV. Granting policies and procedures
    V. Calculating the cost of care
- 3.4. Providing care along the continuum
    I. Providing care along the continuum
    II. Investing in health: health promotion and prevention
    III. Caring for all women, with and without complications

7.2.4. ENABLING MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES: A CONCEPTUAL MODEL

This section is the synthesis of the data from the findings of all parts of the study according to the complex adaptive systems framework that consists of the six agents (Figure 21). For this synthesis, the data was clustered according to these six headings in a table (Annex 19).

Figure 21: Essential elements of midwife-led care in low- and middle-income countries



7.3. ESSENTIAL ELEMENTS FOR MIDWIFE-LED CARE IN LOW- AND MIDDLE-INCOME COUNTRIES

An essential element of midwife-led care that runs through all phases of this research is the importance of an enabling or supportive environment within the health system (Annex 19). An enabling or supportive environment runs across service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership to governance (WHO 2007). All other essential elements (Figure 21) will be described in detail in the following section and discussed with existing literature in the field. The first section looks at issues related to health service delivery and the importance of putting women's need at the centre of midwife-led care and the health care system in general.

7.3.1. HEALTH SERVICE DELIVERY: PROVIDING MIDWIFE-LED CARE IN A VARIETY OF SETTINGS - PUTTING WOMEN'S NEEDS AT THE CENTRE

This study shows that the concept of midwife-led care in low- and middle-income is tailored towards two groups: midwives and women. Health services and systems, however, are often not structured in this way, meaning that the midwife-led model of care needs to be flexible and adaptable.

Midwife-led care in low- and middle-income countries can be provided in a variety of ways, depending on the setting and context. It is provided in primary, secondary or tertiary facilities, or at the homes of women and their families. Midwife-led care can be provided in the public or in the private sector and can be free-standing, independent from other health facilities, or alongside, at a facility in which obstetric-led care is also provided. There is a push in low- and middle-income countries to provide services for childbirth in secondary or tertiary facilities (Roder-DeWan et al. 2020; WHO 2005). Midwife-led care which is provided on the premises of a hospital or health centre has shown important benefits, particularly in settings where referral systems do not function well and

access to care in a timely fashion is challenging (Long et al. 2016). Many women in low- and middle-income countries, however, prefer to give birth in primary care facilities (Mocumbi et al. 2019) or to stay in their homes, as indicated by one women who was interviewed in this study: “It is privilege for home delivery and a space where people from outside are not allowed and we can keep the pregnancy in secret”. The ability to remain flexible in terms of the location where midwife-led care is provided is currently an important factor during the Covid-19 pandemic, as outlined in reports from Indonesia and the Philippines (Cruz Bakani 2020; UNFPA 2020). An article from UNFPA Asia and Pacific emphasises this point: “Locked down and pregnant: Clinics are no longer the safe places they used to be, so what can be done?” (UNFPA 2020). Midwife-led care can be provided in the public or in the private sector.

The concept of midwife-led care along the continuum is recommended by the WHO (World Health Organization 2016b). Internationally, midwives’ scope of practice includes care along the continuum: from pre-pregnancy to pregnancy, to labour, birth, and post-partum period, up to six weeks after birth (International Confederation of Midwives 2018). In Bangladesh, the scope of practice also includes tasks that relate particularly to health promotion and education in sexual and reproductive health, pre-conception, antenatal, postnatal, breastfeeding, family planning, infant health and other relevant areas of women’s health. With this wide range of aspects along the continuum of care, midwives are seen as well-positioned for providing continuity of care, in the facility and in the community. Based on the findings of the integrative review on the provision of midwife-led care in low- and middle-income countries (Michel-Schuldt et al. 2020), midwife-led care was provided along the continuum in most of the settings. These settings are often located in primary or secondary facilities or in the communities. The push towards centralisation of services to hospitals in low- and middle-income countries (Roder-DeWan et al. 2020) could, however, disrupt the concept of care along the continuum, as mentioned by Hanson & Schellenberg (2019). Fragmentation of midwife-led care was reported in several studies from low- and middle-income countries, but also from high-income countries (Michel-

Schuldt et al. 2020), highlighting the need to address the importance of providing midwife-led care along the continuum.

Midwife-led care is seen as a model in which respectful care is at the heart of its philosophy and values. However, women-centred or baby-friendly policies do not exist in Bangladesh, as shown by the policy analysis conducted. However, while these policies are not present, services delivered by midwives in Bangladesh are provided respectfully. Women in the Bangladeshi case study state that they received respectful care. The heart and soul of midwife-led care is the concept of respect by midwives towards women and also by communities paying respect to midwives. Studies on midwives' understanding of respectful maternity care from Ghana show that midwives had some idea of what respectful maternity care is, as they included non-abusive care, consented care, confidential care, non-violation of childbearing women's basic human rights and non-discriminatory care in their responses. There is a divide between what these midwives knew and what care they provided, as there is evidence of "disrespectful and abusive practices such as hitting, pinching, and implicitly blaming childbearing women for mistreatment" (D-zomeku et al. 2020, p. 1). In a study conducted in Mozambique, women who experienced disrespect and abuse in primary facilities did not want to recommend care in these facilities to family members (Mocumbi et al. 2019).

Women's empowerment, the reduction of fear in and the de-medicalisation of childbirth, including fewer interventions, is central to midwife-led care in low- and middle-income countries, as shown by this study. Midwife-led care that counteracts medicalisation of childbirth needs to focus on care that is culturally sensitive. Midwife-led care supports women to give birth without medical interventions such as regional analgesia and instrumental vaginal delivery. This has already been a finding in the systematic review by (Sandall et al. 2016) that included studies from high-income countries. In studies from other low- and middle-income countries, the introduction or strengthening of midwife-led care was regarded as an intervention to de-medicalise birth and to reduce unnecessary caesarean sections, such as in Iran (Ardakani et al. 2020)

Over-medicalisation in low-and middle-income countries has been regarded as costly on health systems where financial resources are scarce and where the burden on maternal and newborn mortality is high (Miller et al. 2016). As Miller et al. (2016) suggest in their study, midwife-led care, either alongside hospitals or in a freestanding format, could be the most cost-effective option to reduce unnecessary caesarean sections in low- and middle-income countries, a finding that is based on evidence from the Lancet Series on Midwifery (Renfrew et al. 2014). This aspect, based on rigorous evidence, has the potential to serve as a policy argument if linked to the reduction of interventions and therefore increased cost-effectiveness. This would be especially true if midwife-led care could be part of the essential package in low- and middle-income countries.
In this research, findings from the case study suggest that midwife-led care is based on women's needs. Woman-centred care is at the core of midwife-led care. However, the midwife-led model of care has not been able to achieve privacy for women. Efforts need to be undertaken to communicate that births in midwife-led models of care are safe and that privacy can be maintained to ensure acceptability of care.

A study conducted in Uganda revealed that interpersonal aspects of quality of perinatal care and service delivery tailored around women's needs is lacking. The main aspects which are negatively reported relate to interactions between the women and the providers (Sarkar, Bunders-Aelen & Criel 2018). However, the authors of this Ugandan study "expose the central, yet often-unheeded, role of perinatal women's agency in their own health seeking behaviours and overall well-being, as well as that of underlying practical norms surrounding health worker attitudes and behaviours." (Sarkar, Bunders-Aelen & Criel 2018, p. 82). The first part addresses the issues, i.e. that perinatal women are often disempowered, highlighting the fact that decision-making power of women lags behind. In this study, several issues that contribute to this disempowerment were discovered, including socio-economic status and gender norms. In Bangladesh, where socio-economic status is a major determinant in health-seeking behaviour

(Amin, Shah & Becker 2010) and gender norms in the society and family influence the decision-making power of women, listening to women's voices and encouraging them to speak to express their needs should be central to midwifery education, training and clinical practice. However, closing the gaps in gender equality in a society is wider than midwife-led care. The second issue that was mentioned by Sarkar, Bunders-Aelen & Criel (2018) are health workers' attitudes and behaviour towards women's health care needs. In this study, the findings on midwives' attitude towards women were mixed. Another area in which midwife-led care showed a similar level of positive results in low-and middle-income countries is the satisfaction and empowerment of women. While the studies by Kaye (2000) and also by Sheferaw et al. (2017) Kanengoni, Andajani-Sutjahjo & Holroyd (2019) have limitations, as discussed earlier, they report disrespectful behaviour and abuse are negatively affecting clients' satisfaction. Promising examples from recent research are the Palestinian (Mortensen, Diep, et al. 2019; Mortensen, Lieng, et al. 2019; Mortensen et al. 2018) and the Kenyan (Onchonga et al. 2020) studies which highlight that women-centred, continuous midwife-led care interventions have positive effects on women's satisfaction and put women's needs at the centre.

Aside from care along the continuum, midwife-led care in this study focusses on health promotion and prevention for all women and newborn infants. This includes various aspects of midwifery and wider SRH services. In Bangladesh, before or when complications occur, referral mechanisms are in place but the role of midwives, especially to independently make clinical decisions and initiate first-line management is not yet clear. Further clarification is needed, in which the competencies and roles of midwives is strengthened. Midwives working in midwife-led centres never continue their care once a woman or newborn infant is referred to another facility. Only a couple of studies from high-income countries provide perspectives from women and midwives when transfer from a midwife-led model of care to an obstetric-led model of care occurs (Geerts et al. 2014; Kuliukas et al. 2017; Sosa, Crozier & Stockl 2018). The studies from the

Netherlands and the UK report that midwives do not continue with care after the women are transferred, whereas the Australian study reports that continuity of care and even carer is maintained. Tensions between midwives in other medical staff are described and stress is reported by both the midwives and the women (Sosa, Crozier & Stockl 2018).

Apart from health service delivery and its setup, the health workforce plays an important role in the execution of these services. The next section elaborates on health workforce issues.

7.3.2. HEALTH WORKFORCE: CALCULATING THE NUMBER OF MIDWIVES AND TARGETING INDIVIDUAL MIDWIVES' WORKING MODALITIES

Midwives working in midwife-led models of care sometimes work in teams or on their own (Michel-Schuldt et al. 2020). However, quality care is provided in collaboration with other health care providers and ideally in teams. Working in collaboration is central to the midwife-led model of care in low- and middle-income countries.

As just discussed, midwives sometimes work on their own as many low- and middle-income countries have severe workforce shortages. Gaps in workforce planning exist and, as reported in the State of the World's Midwifery Report, "comprehensive, disaggregated data for determining the availability, accessibility, acceptability and quality of the midwifery workforce" (UNFPA 2014, p. 5) that could be placed in midwife-led models of care is not available. Similar findings were compiled from the regional midwifery reports in the Sub-Saharan African region where key data was missing (Arias et al. 2017), in the Arab States region where several countries had difficulties providing workforce data (Nove et al. 2015), in the Eastern and Southern African region where all participating countries reported challenges collecting workforce data (UNFPA 2017) and in small island Pacific nations where at the point of data collection, only half of the countries had workforce registers (Homer, Turkmani & Rumsey 2017),

Scaling-up midwifery care could reduce maternal mortality, newborn mortality and stillbirths (Homer et al. 2014; Nove et al. 2020). Currently, midwives in Bangladesh are still low in number, which is hampering the implementation of midwife-led care across the country. An estimated 18,400 to 25,000 diploma midwives are needed by 2029 to cover the needs in Bangladesh (Laski et al. 2013). However, this target is unlikely to be reached. Currently (as per the BMNC data sheet from the 20th of November 2020[20]), there are around 6000 midwives who were educated according to international standards, including 4396 Diploma midwives who have graduated from the 3-year direct-entry programme and 1592 nurse-midwives who have completed the six-month post-basic midwifery training. Several studies from lower middle-income countries show positive results of midwife-led care such as women's satisfaction with the midwifery-led model of care and improved access to skilled care. However, some of the studies highlight that scaling up the number of midwives alone is insufficient to provide quality care that is accepted and valued by women (Lowe & McCauley 2019; ten Hoope-Bender et al. 2014).

Working modalities that affect the individual midwife are also linked to social and gender norms in societies. One such aspect that influences the implementation of midwife-led care is that midwives who are posted in midwife-led centres have recently graduated and are young. Although some communities have integrated these young women as part of their community ("sisters"), the aspect of midwifery personnel being young and single has appeared in studies rural Nigeria, Niger and Ghana before and has led to social isolation of midwives (Filby, McConville & Portela 2016).

The concept of mentoring was positively regarded by midwives and managers alike and was seen as a factor to successful implementation of midwife-led care. Similar findings from low- and middle-income countries on mentoring or

[20] http://bnmc.portal.gov.bd/sites/default/files/files/bnmc.portal.gov.bd/page/4ccb8b5f_4b8a_486a_8f1d_66e23a7dcb8b/2020-11-30-16-23-7c135b3d91722a3c6a9cb1013d40e81b.jpg

supportive supervision to improve quality of care and to support the health workforce were reported in previous studies conducted in Liberia (Michel-Schuldt et al. 2018), Pakistan (Sayani et al. 2017), Tanzania (Baker et al. 2018) and Uganda (Kaye 2000). Compared to the midwife or nurse-midwife professional backgrounds in these studies, the mentors in the case study in Bangladesh were often medical doctors.

Midwifery students are placed in midwife-led models of care to become competent midwives. Midwife-led models of care were seen as places to practice 'midwifery', to create a professional identity, to provide an optimal learning environment for midwifery students and to try out 'innovations' (Michel-Schuldt, Homer & McFadden 2020). Evidence for midwife-led models of care to be excellent learning spaces and in which midwifery students care was positively rated by parents was derived mainly from high income countries, such as the UK (Norris & Murphy 2020), Australia (Carter et al. 2015; Tickle, Gamble & Creedy 2020), Norway (Aune, Dahlberg & Ingebrigtsen 2012) and New Zealand but were described in a middle-income country as well. In the Indonesian province of North Aceh, midwifery students accompanied women throughout the course of their pregnancy, birth and post-partum period within a midwife-led model of care (Rildayani et al. 2020).

The following section will provide the synthesis of health information and discuss the findings in relationship to the existing literature.

7.3.3. HEALTH INFORMATION: SHIFTING FROM FEAR TO COURAGE AND CHOICE AND HARVESTING THE BENEFITS OF HEALTH PROMOTION AND PREVENTION

Investment in health promotion and prevention is key to successful implementation in midwife-led care in low- and middle-income countries.

Several studies from Angola, China, Iran, Palestine and Pakistan included in the first scoping review on outcomes of midwife-led care reported increased satisfaction of women with midwife-led care (Anwar et al. 2014; Cheung et al. 2011a, 2011b; Gu et al. 2013a; Mortensen, Diep, et al. 2019; Moudi et al. 2014;

Pettersson, Svensson & Christensson 2001). In the case study on midwife-led care in Bangladesh, women report that they were satisfied with the care and that they would recommend it to others.

The choice for women of opting for normal birth seems to be an important issue for families in Bangladesh, with caesarean sections on the rise for those accessing facility-based births. The midwife-led model of care in Bangladesh offers an option to give birth normally within a safe environment. This environment also allows women to decide two more issues within childbirth: a birth companion and the position during labour and birth. The possibility to choose within childbirth is, however, traditionally not part of the Bangladeshi culture. As described earlier, men dominate household-decision making with regards to health expenditure, especially in the area of reproductive health. Where men make decisions about the household expenditure, there are lower rates in antenatal care and skilled attendance at birth (Story & Burgard 2012). In a study on perceptions of antenatal care, women report that decisions around their care were made by their mothers-in law (Nisha et al. 2020). The midwife-led model of care has included choice and consent in its core value and philosophy. Similar findings from a midwife-led model was reported in a high-income country in which women indicated that they had a better choice (Butler et al. 2015)

Health promotion and prevention along the continuum of women's and newborns' health is part of midwives' scope of practice and is included in the midwife-led model of care in low- and middle-income countries. This is, according to the QMNC framework, an aspect of care that is needed for all childbearing women and infants. However, activities related to health promotion and prevention have mainly been implemented in private sector, according to the findings from the case study conducted in Bangladesh. Breastfeeding has positive short- and long-term effects on the health and well-being of infants, making it one of the most effective measures in the investments in health (Horta 2019; Horta & Victora 2013). In the study on midwife-led care in Palestine, the authors conclude that there is an association between receiving midwife-led continuity of care and increased duration of exclusive breastfeeding (Mortensen, Diep, et al. 2019).

Similar findings for positive effects of midwife-led care on exclusive breastfeeding could be found in high-income countries such as Japan (Iida, Horiuchi & Nagamori 2014) and Ireland, where midwife-led care was more effective in relation to breastfeeding (Butler et al. 2015). In a Greece study, midwife-led antenatal breastfeeding education had positive effects on knowledge and self-efficacy, attitudes towards breastfeeding, and perceived barriers of breastfeeding (Iliadou et al. 2018).

In the next section, the importance of leadership is brought together from the findings of this research and discussed.

7.3.4. LEADERSHIP: COMMITMENT FROM HIGHEST POLITICAL LEVEL AND INCLUDING MIDWIVES' VOICES IN THE POLICY DIALOGUE

Leadership is part of the essential building blocks of an enabling environment (WHO 2018). The involvement and/or influence of a midwifery association in past or current policy processes was not mentioned in any of the papers, although some highlighted that they are currently invisible in leadership and policy but their involvement would be essential for the advancement of midwife-led care (Michel-Schuldt et al. 2020). In only two countries did midwives oversee the midwife-led models of care within a clinic or ward. In Bangladesh, midwives working in midwife-led models of care are mostly not in charge of managing the centres they work in, such as the birthing room, the ANC and PNC wards. This is despite the fact that a government order exists that provides the midwives with the authority to run their workplaces. If midwives work in settings in which they are on their own, they are also in charge of the centre and even supervise assistant midwives. Leadership within the clinical environment, such as managers or supervisors within midwife-led models of care, was sometimes seen as supportive. However, sometimes midwives were also humiliated by their managers and were not skilled enough to carry out their tasks (Michel-Schuldt et al. 2020).

The policy analysis in this study revealed that the highest political commitment to support midwife-led care is important. This kind of commitment is needed so that

investments can be made in education, regulation and the deployment of midwives to be able to provide midwife-led care. In Bangladesh, the prime minister's statement was essential to the development of midwifery as an autonomous profession in Bangladesh (Bogren, Begum & Erlandsson 2017; Bogren et al. 2015). It fostered accountability and helped to align donors to support maternal and child health through midwifery in the country. As stated by Bogren et al. (2015), who looked into the professionalisation of midwifery in Bangladesh, working towards a common goal was fostered by the Strategic Directions of the MoHFW in 2008 to use the existing nurse-midwifery workforce and up-skill them in midwifery to improve maternal and newborn health and wellbeing. In the analysis by Van Lerberghe et al. (2014), the authors describe that in all four countries, namely Morocco, Burkina Faso, Indonesia and Cambodia, the commitment of political leadership formed a basis to foster investments in steering and resource mobilisation, which was mainly used to scale-up midwifery.

Findings from this research have shown that midwife-led models of care are ideal for midwives to practise and learn to become competent, autonomous professionals. However, it also shows that midwives are not yet fully empowered and in professional control, as they are not practising within their full scope and are often supervised and mainly mentored by medical doctors. As outlined earlier, midwife-led care is often surrounded by a medically dominated system within patriarchal structures. Midwifery in low- and middle-income countries is predominantly a female profession providing care for other women in patriarchal societies. Gender norms pose barriers to midwives providing quality care in low- and middle-income countries, as described by Filby, McConville & Portela (2016); WHO (2016).

Issues around financing midwife-led care have been merged from the findings and will be presented in the next section.

7.3.5. FINANCING: CALCULATING THE COST OF CARE AND BENEFITING FROM THE RETURN OF INVESTMENT

Evidence around cost-effectiveness of midwife-led care are rare. The scoping review revealed that midwife-led care in low- and middle-income countries might be cost-effective (Rana et al. 2003). The Palestinian study by Mortensen, Lieng, et al. (2019) concludes that midwife-led care reduced the rates of caesarean sections and other interventions and reduced the maternal and newborn mortality rates and might therefore reduce hospital and social cost. These two studies from low- and middle-income countries are the few examples on potential cost-effectiveness of midwife-led care in similar settings. This is in line with the findings of the systematic review by Sandall et al. (2016) which found a trend towards a cost-saving effect for midwife-led continuity care compared to other care models of care. In a study recently conducted in the United States of America, midwife-led care was over $US2000 less expensive compared with obstetric-led care (Attanasio, Alarid-Escudero & Kozhimannil 2020). The main cost-saving derived from fewer episiotomy rates and preterm births. Studies conducted in Canada (Koto et al. 2019) and Belgium (Isaline et al. 2019) also showed that midwife-led care was more cost-effective compared to other models of care.

Calculation of cost for scaling-up midwifery was conducted in Bangladesh (Chilvers, Look & Hoope-Bender 2014), which revealed that the strategy to upskill and scale up midwifery over nine years until 2021 would could $US160 million, but could avert 188,197 neonatal deaths, 12,467 maternal deaths, and 401,143 intrapartum deaths in this nine-year period.

As outlined above, investment in midwife-led care therefore might bring a return on investment. In the State of the World's Midwifery Report (UNFPA 2014, p. 5) the case for midwifery as the 'best buy' in primary health care has been made: "investing in midwifery education, with deployment to community-based services, could yield a 16-fold return on investment in terms of lives saved and costs of caesarean sections avoided."

According to the Paris declaration on aid effectiveness (Bissio 2013) and as outlined in the UN Secretary General's Strategy for Women's and Children's Health (Ki-Moon 2010), donor alignment is key, including in the area of investment in midwife-led care in low- and middle-income countries. If the political will to support midwifery and midwife-led care exists, it is key that donors align and support national governments. Aside from the findings in this study, where multiple bi- and multilateral donors aligned and supported the strategies to strengthen midwifery in Bangladesh, similar examples exist in other low- and middle-income countries. In Afghanistan, multiple donors invested in midwifery education and community midwives have been deployed in health sub-centres since 2006 (Dalil et al. 2014). In Indonesia, multiple donors aligned to support the village midwife programme from 1993 onwards(Hull, Rusman & Hayes 1998). Frustration is expressed when donors fail to align behind national strategies, as outlined in a study from South Sudan (Sami et al. 2018). Donor support was seen as an essential part also in the country analysis on the strengthening of health systems and deployment of midwives in countries with high maternal mortality by Van Lerberghe et al. (2014).

In the following, governance as another essential element of midwife-led care in low- and middle-income countries is described and discussed.

7.3.6. GOVERNANCE: PROVIDING STANDARD OF PRACTICE AND CREATING AND SUPPORTING MIDWIFERY POSTS

Similar to the high-level evidence of midwife-led care in high-income countries (Renfrew et al. 2014; Sandall et al. 2016), research on the provision of midwife-led care in LMICs included in the integrative review as part of this study (Michel-Schuldt et al. 2020), indicate some promising results but have also highlighted specific challenges. Midwives felt competent to provide midwife-led care when standards of practice such as quality education, regulation, training and a supportive environment exist in which midwife-led models of care are able to thrive (UNFPA 2014 (WHO 2019). However, professional barriers to provide quality midwifery care in low- and middle-income countries in all areas, namely

education, training, regulation, staffing, working conditions, facility management and transportation (Filby, McConville & Portela 2016)

As outlined in the case study on midwife-led care in Bangladesh, policies and regulatory issues provide the organisational structure for the implementation of midwife-led care. Professional boundaries are set and provide the basis for the deployment of midwives working in midwife-led models of care. Government protocols allow educational institutions to send their midwifery students to the midwife-led centres during their clinical placement.

In Bangladesh, standard operating procedures for midwife-led models of care exist in both the public and private sector. However, an accreditation mechanism that uses these standards for quality assessments does not exist yet.

Based on a global consultation process, operational standards for midwifery centres which provide midwife-led care were piloted in low- and middle-income countries (Stevens & Alonso 2021). In this process, 43 standards were defined and agreed upon, with the overall aim to improve quality of care. This set of standards has been able to be used as a benchmark for quality standards of midwife-led models of care in low- and middle-income countries.

Policies and regulatory issues are essential for creating the organisational structure for the implementation of midwife-led care in Bangladesh. They help to provide professional boundaries via midwifery legislation, scopes of practice and strategies. They are tools for governments to steer and coordinate the development of midwife-led care to optimise quality maternal and newborn health in a country. In their research conducted in Nepal and Bangladesh, Bogren & Erlandsson (2018) identified similar findings, as they outlined that even more than global policies and strategies, the development of national policy and strategy documents was important for building professional midwifery.

Workforce policies provide the basis for the deployment of midwives working in midwife-led models of care. Government protocols allow the educational institutions to send their midwifery students to the midwife-led centres during their clinical practice and ensure that organisational structures support management and supervision in midwife-led models of care. There is a shortage of midwives

and local health authorities are therefore not yet able to staff the midwife-led centres as per the government orders. The next sections conclude the chapter on essential elements for midwife-led care in low- and middle-income countries.

7.4. CONCLUSION

This synthesis of all phases of the study provided an overview of the essential agents for midwife-led care in low- and middle-income countries.

An enabling environment that supports midwives to be able to provide midwife-led woman-centred care seems essential in low resource settings. Midwives need continuous professional development, not only in emergency skills but also in respectful maternity care. Midwives need support in their health facilities that are sufficiently supplied and equipped and a health care system and society that values their services. All of these seem to be important factors to successful implementation of midwife-led care in lower-middle income countries.

The final chapter draws a conclusion and highlights implications from this research.

CHAPTER 8: IMPLICATIONS AND CONCLUSIONS

8.1. CONTRIBUTION OF THIS THESIS

This study provided the first systematic overview of outcomes and the implementation of midwife-led care in low- and middle-income countries. Based on the findings from existing evidence, this study developed a two-pronged approach to apply these to a lower middle-income country. A policy and health systems analysis was conducted to provide insights into the political context in which midwife-led care was embedded. This helped to set the scene for a case study by providing a contextualised description and in-depth insights into the system that surrounds midwife-led care but also provided a perspective from within, including the voices of women as service users and midwives. This study synthesised the general findings with a specific case – making it a unique example from which similar settings might be able to learn.

The study used various methods to enhance validity. First of all, at various stages in the research process, the supervisors and peer researchers were included to reflect upon decisions taken. This enhanced transparency in the research. In the scoping and integrative reviews, the research team discussed which studies would be included and excluded in the reviews. When decisions were not clear, a consensus was sought. The findings from the literature reviews informed the development of the policy analysis and case study. The reflective diary and regular reflective sessions with the supervisors, especially during the data collection and analysis of the case study, helped to enhance the credibility of the study. One major strength of this study is the inclusion of the peer data analysts who are not familiar with the field to analyse the data hermeneutically. As I am a midwife who has positive experience with midwife-led care and has worked in low- and middle-income countries to support and strengthen maternal and newborn health through midwifery, the inclusion of outsiders in the data analysis process was important to reduce bias and enhance the credibility of the findings.

One encouraging finding of this study is the increased attention on midwife-led care in lower middle-income settings, as shown by the number of research

projects conducted in the last four years, as revealed by the scoping review. In particular, it was encouraging to see the high-quality research conducted in Palestine (Mortensen, Diep, et al. 2019; Mortensen, Lieng, et al. 2019; Mortensen et al. 2018) but also the promising intervention to reduce fear in childbirth within a midwife-led care setting in Kenya (Onchonga et al. 2020). The emergence of these studies shows an interest in the topic which may lead to more investments in midwife-led care in LMICs and research that accompanies it.
The next section will discuss the limitations of this study.

8.2. LIMITATIONS

Like all studies, this study had several limitations, which will be addressed in the following section.

Several studies from the scoping review included a mix of different cadres, from doctors and auxiliary nurse-midwives to health visitors, nurses and midwives. The midwifery care showed mainly positive outcomes such as cost-effectiveness, enhanced professional recognition and higher rates in the provision of respectful maternity care. However, limitations such as limited resources and competences to provide quality care and negative outcomes such as disrespectful care were mentioned as well. All studies lacked generalisability due to their study designs.

Language issues might have been a limitation of the health policy and systems analysis as there may have been documents in Bangla I was unable to access. In the case study, language was also a limitation. Conducting in-depth interviews and focus group discussions amongst women who experienced midwife-led care but also midwives who worked in midwife-led models of care in Bangla meant that an interpreter was necessary. The original plan, to engage a female interpreter who was familiar with the topic but not related to the study participants and to prepare her prior to the interviews and focus groups to have an active role in the research process to enhance the “flow” (Pitchforth & van Teijlingen 2005), was not possible most of the time. Often, project managers who joined the field

visits provided interpreting support. Though it was possible to provide them with the interview and focus group guides in advance, they did not take on an active role and could not serve as bilingual researchers. This might have influenced the depth of the study. The relationship of the interpreter as managers or coordinators of the midwifery centres or support projects could have influenced the responses of the women and midwives. This might have created a response bias by inflicting social desirability, as participants might have answered with what they thought the interpreter would like to hear (Polit & Beck 2008). The translation by such a manager or coordinator who provided support in interpretation could have also been biased, as his or her own perspective could have been included in the translation. This bias was minimised by using a Bangla speaker-to transcribe the data and to translate the Bangla parts to English at the same time. Differences in participants' responses between the translation by the interpreter (project manager) and translator (transcription) were discussed and adjusted.

As well as the language barrier that might have created a bias, the fact that I was an outsider could have distorted the findings. While I was familiar with the context, I remained an outsider who was not embedded in Bangladeshi culture and society. The findings that I presented might not represent the truth. Particularly due to time constraints, I was unable to find a co-researcher in Bangladesh to conduct this research. Therefore, this research has another limitation: as an outsider, coming from a dominant group that holds white privilege (Racine & Petrucka 2011), I told their story. Another option would have been for them to tell their story themselves, or we might have jointly told the story of midwife-led care in Bangladesh. As a way to decolonise research, I should have joined a group of Bangladeshi researchers to review documents for the policy and health systems analysis and conducted interviews and focus group discussions together. This would not have completely decolonialised the research process, but it would have included diversity in the research process.

While women's views were included in the study, interviews and focus group discussions were sometimes short and women seemed shy in sharing their

perspectives. This can be seen by a limited number of quotes from women compared to the wealth of information provided by experts, programme managers and midwives in the case study on midwife-led care in Bangladesh. Further research is needed to address this gap.

Another limitation of this study is that not all midwife-led centres were able to be visited due to time and resource constraints. Out of 36 public and private midwife-led centres, only five were visited. The selection of centres was recommended by the advisory group, but only sites for which permission had been granted by the Directorate General of Health Services were able to be visited. These sites were all receiving some support from NGOs and the UNFPA. Most of the sites included a mentoring component. This might have distorted the findings and most probably mainly positive examples were picked. Negative cases of midwife-led centres are therefore not included in the study. Another fact that limited the data collection was the time needed to travel to the sites. These requirements in turn limited the time that was available for the interviews and focus group discussions. In particular, data derived from the focus group discussions and interviews with women might have been richer if I had had time for participants to become familiar with my presence, develop trust and open up to share their experience and perspective.

What might have also skewed the findings towards an overly positive result favouring the implementation of midwife-led care was the fact that I am a midwife dedicated to the provision of quality care for women and newborns. Participants of this study, especially other midwives, experts of programme managers were often aware of this and might have told me things that I wanted to hear.

The study has described the specific context of midwife-led care in Bangladesh, one lower-middle-income country. This setting is unique and may not be able to be transferred to other contexts. What could be transferred though to similar settings are the essential elements. These could be used and applied to midwife-led care in other countries as a basis for an analysis and discussion.

The next section will discuss the implications for policies and practice.

8.3. IMPLICATIONS FOR POLICIES AND PRACTICE

Midwife-led care has the potential to substantially improve maternal and neonatal mortality, and decrease stillbirths in low- and middle-income countries (Nove et al. 2020). The evidence available suggests that investment in midwife-led care in low- and middle-income countries has a similar effect on the health and wellbeing of the women and newborns as vaccination does (UNFPA 2014). The section will present three main sub-sections including implications for the global health community, implications for policy makers and programme managers and implications for midwives and women.

8.3.1. IMPLICATIONS FOR THE GLOBAL HEALTH COMMUNITY

It is important for the global health community to develop tools and standards, and to provide technical support for LMICs in planning, implementation and evaluation of midwife-led models of care. Investments are necessary to support the midwifery workforce and to create enabling environments.

These investments are necessary for midwife-led models of care to thrive. As shown in this research, midwife-led care in LMICs is not always sufficiently supported with resources (human resources, finance, governance structures). Investments in and around midwife-led care in LMICs are likely to bring returns not only in health, but also in gender equity, quality education and decent work and economic growth. In times where health systems face severe resource constraints and are burdened with the COVID-19 pandemic, investments in essential health services such as midwife-led care are likely to have ripple effects. As care delivered by midwives are projected to be able to save more lives than many other interventions (Nove et al. 2020), these investments could have secondary effects on women's and children's lives and ultimately in their societies as well. If multilateral organisations, bilateral donors and philanthropic organisations support midwife-led care in low- and middle-income countries, their investments are evidence-based and effective.

Collaborative approaches to build midwifery capacity in LMICs, as outlined by Dawson et al. (2014), could be strengthened by the global health community. These include collaborations and partnerships within LMICs or between LMICs and high-income countries.

8.3.2. IMPLICATION FOR POLICY MAKERS AND PROGRAMME MANAGERS

Every context is different – but midwife-led care is a model that is adaptable, as shown in this research. To adjust midwife-led care to a specific context, it is essential to include women's and midwives' perspectives in the development, implementation and evaluation of midwife-led care. The model needs to be developed to provide a space in which midwives as main providers of care in and around childbirth are able to thrive.

In a systematic review which included several primary studies from low- and middle-income countries, women state that they want a positive experience around childbirth, which includes safety and psychosocial wellbeing as well (Downe et al. 2018). Women's personal and socio-cultural beliefs and expectations should be the basis for the design of a maternity system. To ensure that women's perspectives are included during the development or revision process of midwife-led care in low- and middle-income countries, policy makers must include evidence of what women in specific contexts want.

Similar to recommendations from the study conducted in Ghana, findings from my study suggest that further training of midwives in respectful maternity care is needed. Such training exists and has been provided in LMICs. In one example, 280 health care providers, mainly midwives from Afghanistan, Chad, Ghana, Tanzania and Togo, participated in training for respectful maternity care (Lowe & McCauley 2019). However, little is known about whether these workshops made a difference, highlighting the need for further research on the impact of such training sessions. Additionally, the provision of respectful maternity care should be included in faculty development, educational programmes, regulation (e.g. ethics for midwives) and should be addressed in standards of practice and other

national guidance documents. Midwives, and specifically midwife-led care, are rightly placed to improve acceptability of care by providing respectful maternity care.

To ensure that midwife-led care is provided in an evidence-based way and respectfully, especially to increase acceptability of care and cost-effectiveness, low- and middle-income countries could consider introducing mother-baby friendly birthing facilities initiatives. The criteria of the initiative could be part of the accreditation system of facilities and could include the following considerations: mobility and positions of preference for labour and birth; privacy; choice of birth partner; non-discriminatory policies for the treatment of women with HIV, youth, minorities, etc; no physical, verbal, emotional, or financial abuse; affordable or free maternity care; no practices used routinely that are not evidence-based; non-pharmacological and/or pharmacological pain relief as required; and promotes immediate skin-to-skin mother–baby care and breastfeeding (International Confederation of Midwives et al. 2015).

8.3.3. IMPLICATIONS FOR MIDWIVES AND WOMEN

Implications for both midwives and for women are included in this section. This is driven by one recommendation that clearly comes out of this research: midwives and women are a partnership when it comes to the provision of midwife-led model of care. This partnership is essential for effective outcomes of the model itself. A woman-centred, midwife-led continuity model of care would therefore be the ideal concept for LMICs. The collaboration between midwives and women is also essential to overcome socio-cultural barriers that affect the provision of quality care (Filby, McConville & Portela 2016). Gender inequalities in societies affect both midwives and women and therefore a collaboration between the two groups is important.

Both woman and midwives need to become involved in wider policy dialogues in which decisions on resource allocation in the health care sector are made. Collaborative efforts between professional midwifery associations and women's groups should be sought. These alliances in civil society are needed to hold

governments accountable and to change socio-cultural norms that hold women back from thriving. Positive examples of such alliances and joint advocacy exist in low- and middle-income countries, such as the White Ribbon Alliance, a movement for reproductive, maternal and newborn health and rights, in civil society advocacy efforts for maternal and newborn health in Nigeria (Uzochukwu et al. 2020) or in the involvement in social accountability fora in Malawi (Butler et al. 2020) .

The midwife-led model of care has great potential for midwives to practise midwife-led care, to develop skills and become competent and competent, to educate students, to test and evaluate innovations and to provide respectful and woman-centred maternity care. Overall, midwife-led care provides an important role in the process of professionalisation of midwifery in Bangladesh. What is important in this process is to take ownership in the process, so that midwives are able to lead in care and beyond in order to create safe spaces for women and newborns.

The next section will provide conclusions and outline ideas for future research.

8.4. CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

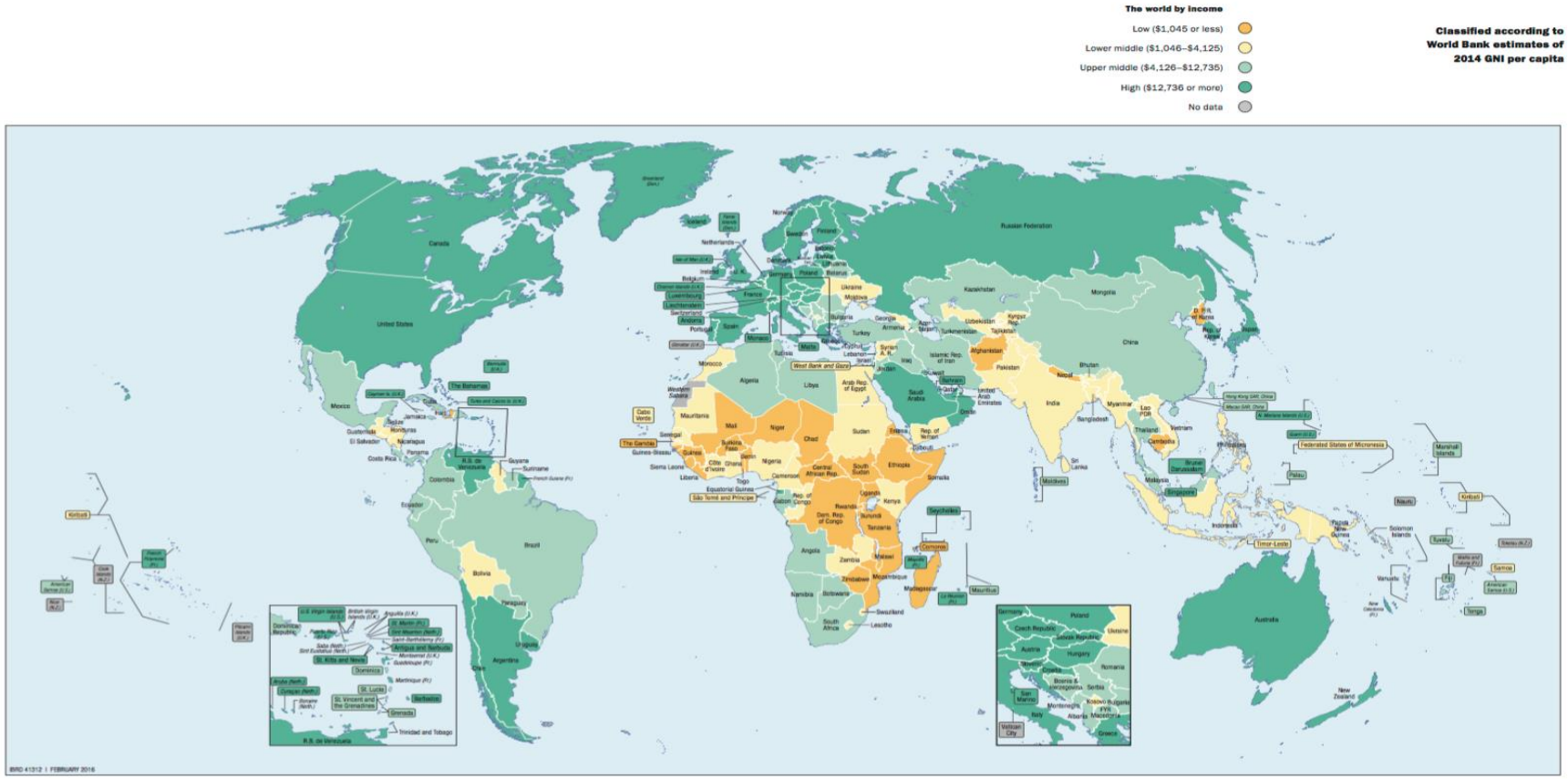
This research shows that midwife-led care in LMICs has the potential to improve outcomes in maternal and newborn health and might be cost-effective. The implementation of midwife-led care varies and overall, the need to invest in supportive systems is key to its success. In this research, essential elements to successful implementation have been explored and could be applied to similar contexts.

In this research, several gaps in the evidence of midwife-led care in low- and middle-income countries have been detected. One of them is the urgent need to evaluate cost-effectiveness of midwife-led care in low- and middle-income countries. Research on women's and midwives' perspectives of the transfer of women from midwife-led care to obstetric-led care in low- and middle-income countries is also missing, highlighting the need to further investigate whether the concept of continuity of carer exists and how it can be strengthened or

implemented. In this regard, research is also needed on the specifics of different ways of providing midwife-led models of care, such as alongside versus freestanding services. This research revealed that research is needed on midwife-led continuity care in midwifery education in low- and middle-income countries. Another research gap that has been relevant and could not be covered by this study is an in-depth perspective of women who receive midwife-led care in low- and middle-income countries.

Investments in implementation and research are necessary to provide further evidence on the potential MLC might have in similar contexts. Research on this model of care should include randomised controlled trials using individual- or cluster-randomisation methods of midwife-led care versus other models of care. The same primary and secondary outcomes as in the meta-analysis by Sandall et al. (2016) could be measured so that research on midwife-led models of care conducted in low- and middle-income countries could be compared to studies in similar settings or even globally. The need to evaluate the effectiveness of midwife-led care when compared to other models of care across various settings, particularly in rates of foetal and infant death, preterm birth and low birthweight has been highlighted before (Kennedy et al. 2016) and a call to action exits (Kennedy et al. 2018). This study highlights the potential of midwife-led care in low and middle-income countries and re-emphasises the need for rigorous research.

ANNEX 1: THE WORLD BY INCOME



ANNEX 2: SEARCH STRATEGY

Database	Search terms	results
Pubmed including filter (year of publication)	(midwife or midwives or midwifery or midwife-led or midwifery-led) AND (low-income country or low-resource country or developing country or middle-income country or low-and middle-income country) AND (outcome OR outcomes)	434 (435)
Google Scholar including filter (year of publication)	(midwife or midwives or midwifery or midwife-led or midwifery-led) and (low-income country or low-resource country or developing country or middle-income country or low-and middle-income country) AND (outcome or outcomes)	7 (29)
CINAHL including filter (year of publication, geography)	(((midwife OR midwives OR midwifery OR midwife-led OR midwifery-led)) AND (low-income country OR low-resource country OR developing country OR middle-income country OR low-and middle-income country)) AND (outcome OR outcomes)	169 (153)
Pro Quest (Health & Medicine) including filter (year of publication, document type, location)	(midwife or midwives or midwifery or midwife-led or midwifery-led) AND (low-income country or low-resource country or developing country or middle-income country or low-and middle-income country) AND (outcome or outcomes)	64308 (first 100) (64615 (first 100)
All databases		710 (717)

ANNEX 3: TABLE OF EVIDENCE – SCOPING REVIEW

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
LMIC: Midwife-led care cost-effective								
Rana et al. 2003	Nepal	Low	Non-matched comparison	988 women (550 at Birthing Centre, 438 at consultant-led Maternity Unit)	Evaluate Nepal's first independent midwifery unit, the Patan Hospital Birthing Centre as a model for training and service provision for	Midwife-led care versus consultant-led care	Intrapartum care for low risk deliveries is effectively provided by midwives. The Birthing Centre model should be considered throughout the developing world, particularly as a site for training of skilled attendants.	Midwifery care is provided by auxiliary nurse-midwives supervised by nurse transferability

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
					low-risk deliveries			
LMIC: Midwife-led care improves maternal mortality and morbidity, reduces interventions and improves quality of care								
Kaye 2000	Uganda	Low-income	Cross-sectional descriptive	One regional hospital, one district hospital, two health centres and four dispensaries, all health units in the district.	To determine the quality of care provided by midwives in Soroti district; and specifically, to identify training needs, gaps in knowledge and other	Participatory observation, midwife and client interviews, records review, facility assessment and focus group discussions	Many midwives were providing care of poor quality for both antenatal and delivery of care due to their inability to identify and manage women with or at risk of pregnancy complications.	Different cadres were assessed but findings were not reported as per cadre, small sample size, data analysis techniques not mentioned

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
					barriers to accessibility of emergency obstetric care	with clients and patients.		
Iyengar & Iyengar 2009	India	Lower-middle	Descriptive	2,771 women in labour and 202 women with maternal emergencies who were not in labour were attended by nurse-midwives.	Explore outcomes of care	Introduction of care provided by auxiliary nurse-midwives	Educated nurse-midwives can significantly improve access to skilled maternal and neonatal care in rural areas of India. Also, if the health professionals were trained, life-threatening maternal complications could	Further research necessary, auxiliary nurse-midwives assessed

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							be managed with and without the need for referral.	
Cheung et al. 2011a, 2011b	China	Upper-middle	Retrospective cohort and a questionnaire survey (part of a major action research project)	Urban hospital with 200-3000 deliveries per year, outcomes of the first 226 women accessing the MNBU were compared with a matched retrospective cohort of 226 women accessing standard care. In total, 128	To report the clinical outcomes of the first six months of operation of an innovative midwife-led normal birth unit (MNBU) in China in 2008, aiming to facilitate normal birth and enhance		MNBU provides an environment where midwives can practise as per their full scope of practice, high vaginal birth rates > potential that midwife-led care can reduce obstetric interventions and increase women's satisfaction	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				participants completed a satisfaction questionnaire before discharge.	midwifery practice.			
Gu et al. 2013	China	Upper-middle	Two-group RCT	110 women	To explore and describe Chinese midwives' experience of providing one-to-one continuity of care to labouring women	Midwife-led antenatal care	Decrease in caesarean section rates and increased the rates of vaginal births compared to the control group, who received antenatal care by obstetricians and obstetrical nurses, women felt able to choose and were in control of birth	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
Walker et al. 2013	Mexico	Upper-middle	Cluster-randomised trial	2254 pregnancies, 27 clinics in 2 states with high maternal mortality; Twelve non-physician providers (obstetric nurses (4) and professional midwives (8)) were randomly assigned to clinics; 15 clinics served as control sites. Over an 18-	Evaluation of the relative strengths of adding an obstetric nurse or professional midwife to the physician-based team in rural clinics.	Addition of non-physician skilled birth attendants to rural clinics in Mexico where they independently provided basic obstetric services compared to clinics without.	Improved care and higher coverage	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				month period in 2009–2010.				
Hofmeyr et al. 2014	South Africa	Upper-middle	Audit	Routinely collected data	Evaluate the impact of establishing an Onsite-Midwife-Led-Birth-Units at Frere Maternity Hospital in East London, South Africa, on maternity services	Onsitemidwife-Led birth unit versus hospital obstetric unit	Number of births in hospital obstetric unit dropped after introduction of new model, reduced number of maternal and perinatal deaths, new model more cost-effective	Bias due to observational design, lack of credibility of findings
Mortensen et al. 2019 (a)	Palestine	Lower-middle	Observational case-control	Women with singleton pregnancies,	Did MLC influence women's	Midwife-led continuity model of care	The midwife-led model was associated with a	The limitation of the study was due to its

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				who had registered for antenatal care at a rural governmental clinic in the West Bank, were between 1 to 6 months after birth invited to answer a questionnaire rating satisfaction with care in 7-point Likert scales	satisfaction with care, during antenatal, intrapartum and postnatal period.	with regular maternity care	statistically significant higher satisfaction with care during antenatal, intrapartum and postnatal period, with a mean sum-score of 5.2 versus 4.8 in the group receiving regular care. The adjusted mean difference between the groups' sum-score of satisfaction with care was 0.6 (95% CI 0.35 to 0.85), $p<0.0001$. A statistically	design relying on registry data that was not available at an individual level

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							significant higher proportion of women who received the midwife-led continuity model of care were still exclusively breastfeeding at the time point of interview, 67% versus 46% in the group receiving regular care, an adjusted OR of 2.56 (1.35 to 4.88) p=0.004.	
Mortensen et al. 2019 (b)	Palestine	Lower-middle	Register-based,	2201 singleton births between January 2016	Aim to analyse the relationship	Midwife-led model of care	Statistically significant fewer women receiving the	The limitation of the study is based on its

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
			retrospective cohort design	and June 2017 at Nablus governmental hospital. Data from rural women, with singleton pregnancies and mixed risk status, who either lived in villages that offered the midwife-led continuity model and had registered at the governmental clinic, or who	between the midwife-led model and maternal and neonatal health outcomes.		midwife-led model had unplanned caesarean sections, 12·8% vs 15·9%, adjusted risk ratio (aRR) 0·80 (95% CI 0·64-0·99) and postpartum anaemia,19·8% vs 28·6%, aRR 0·72 (0·60-0·85). There was also a statistically significant lower rate of preterm births within the exposed group, 13·1% vs 16·8, aRR 0·79 (0·63-0·98),	observational, retrospective design comparing groups with potential unmeasured confounders but randomisation was not an option

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				lived in villages without the midwife-led model and received regular care, were compared.			admission to neonatal intensive care unit, 7·0% vs 9·9%, aRR 0·71 (0·52-0·98) and newborn with birth weight 1500 g and less, 0·1% vs 1·1%, aRR 0·13 (0·02-0·97).	
Mortensen et al. 2018	Palestine	Lower-middle	Non-randomised intervention design based on registry data only available at cluster level, 2	Setting: All 53 primary healthcare clinics in Nablus and Jericho regions were stratified for inclusion.	Impact on use and quality indicators of maternal services after 2 years' experience	Midwife-led care	Number of antenatal visits increased by 1.16 per woman in the intervention clinics, while they declined by 0.39 in the control clinics, giving a statistically	The observational design of the study is open to bias due to a gap in data around confounders.

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
			years before (2011 and 2012) and 2 years after (2014 and 2015) the intervention		with midwife-led care		significant difference in change of 1.55 visits (95% CI 0.90 to 2.21). A statistically significant difference in number of referrals was observed between the groups, giving a ratio of rate ratios of 3.65 (2.78-4.78) as number of referrals increased by a rate ratio of 3.87 in the intervention group, while in the control the rate ratio was only 1.06. Home visits increased	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							substantially in the intervention group but decreased in the control group, giving a ratio of RR 97.65 (45.20 - 210.96)	
Mistry et al. (2018)	Zambia	Lower-middle	Observational study	Seventy-eight participants were enrolled into the study (13 physician anaesthesiology residents, 13 paediatric residents, and 52 midwives)	To measure the competencies of clinical practitioners responsible for newborn resuscitation.	none	Newborn resuscitation skills among health care professionals are varied. Midwives lead the majority of deliveries with anaesthesiologists and paediatricians only being present at operative or high-risk births. It is therefore common for	The observational study design used implies a risk of bias which the authors discuss. Also, midwives might not be used to fidelity simulation scenarios. In

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							midwifery practitioners to initiate resuscitation. Despite this, midwives perform poorly when compared to anaesthesia and paediatric residents.	general, the study only looked at one aspect of specialised care and it is not possible to generalise the poor quality that was revealed in midwife-led care in Zambia in general.
Khriesat et al. (2017)	Jordan	Upper-middle	Observational study	Observation of 118 midwives from National Health Service hospitals in the	To evaluate the skills of midwives in newborn resuscitation	none	The results highlighted the lack of appropriate performance of the eight necessary	Observational design is open to information and a

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				north of Jordan who performed basic newborn resuscitation for full-term neonates. A structured checklist of 14 items of basic skills of resuscitation was used.	in delivery rooms in Jordan		skills at birth by midwives. About 17.8% of midwives had performed the core competencies at birth (i.e. assessing breathing pattern/crying, cleaning airways) appropriately and met the standard sequence. Less than half of midwives assessed skin colour (40.7%) and breathing pattern or crying (41.5%) appropriately with or without minor	confounding bias

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							deviations from standard sequences. Of the six skills that had to be performed by midwives at 30 seconds up to five minutes after birth, four skills were not performed by about one-quarter of midwives.	
Okeke et al. 2016	Nigeria	Upper-middle	Survey	7,104 women with a birth within the preceding five years across 12 states in Nigeria	Effects of the Midwives Service Scheme (MSS), a public sector programme in Nigeria that	Comparison of changes in birth outcomes in Midwifery Service Scheme (MSS) communities to	The main measured effect of the scheme was a 7.3-percentage point increase in antenatal care use in programme clinics and a five-	Secondary outcome (maternal complications) might be biased

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
					increased the supply of skilled midwives in rural communities for pregnancy and birth outcomes.	changes in non-MSS communities over the same period.	percentage point increase in overall use of antenatal care, both within the first year of the programme. We found no statistically significant effect of the scheme on skilled birth attendance or on maternal delivery complications.	
LMIC: Midwife-led care increases women's satisfaction, empowerment and meets the needs of the population								
Anwar et al. 2014	Pakistan	Lower-middle	Qualitative descriptive exploratory approach using semi-	10 women	Perceptions and experiences of women in		Women felt satisfied and empowered as a result of midwife-led care, showing the	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
			structured interviews.		midwife-led model of care		described link between midwife-led and woman-centred care. However, the authors mentioned that women were often not aware of this new model of care and that marketing strategies are suggested to be implemented	
Pettersson et al. 2001	Angola	Low	Descriptive design, lived-experience	Three maternity units, 11 midwives	Autonomous midwives working in Angolan midwifery-led maternity units.	Midwifery-led units	Rough working conditions, connected to the communities, available for homebirths, midwives viewed	Authors stress possibility of applying the model of autonomous midwives working in

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							themselves as independent, strong professional sentiments, cure more important than care, partograph and continuous learning seen as important	midwifery-led maternity units to other countries
Cheung et al. 2011a, 2011b	see above							
Gu et al. 2013	See above							
Moudi et al. 2014	Iran	Upper-middle	Mixed-method research	Routinely collected data of 22,753 low risk women who gave birth in the two health care	To assess experience and outcomes of midwife-led model and	Ten-year period about safe-delivery-posts (SDPs) in Zahedan province in	Since the introduction of the model, the number of women who accessed the facility increased steadily.	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
				posts in phase 1 and conducted qualitative interviews in phase 2.	reasons of women's choice	Iran which provided midwifery-led care	The authors concluded that the midwifery-model of care met the needs of the local population. Women preferred to give birth in a standard-delivery posts compared to a delivery in a hospital because of the lower costs of giving birth	
Mortensen et al. 2019a	See above							

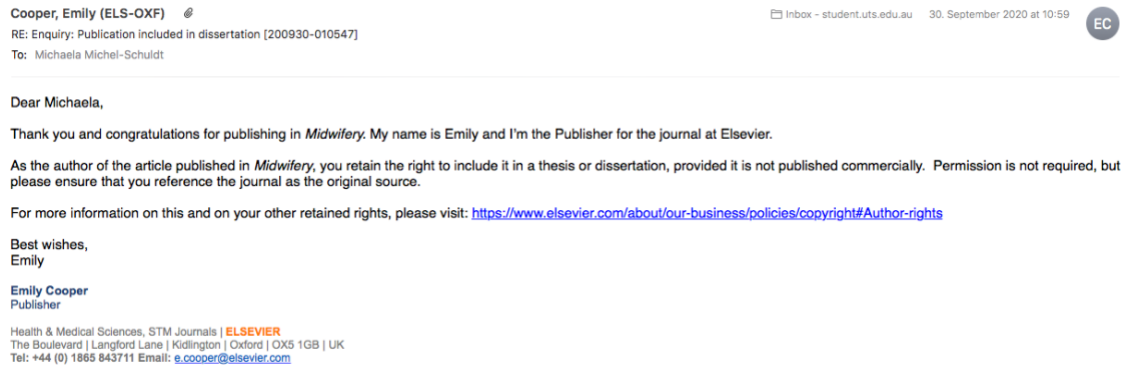
Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
Onchonga et al. (2020)	Kenya	Lower-middle	Qualitative interviews and thematic analysis	33 women who had experienced high and severe fear of childbirth, and had completed midwife-led integrated pre-birth training were interviewed one month after giving birth	The study aimed to explore women's experience from midwife-led integrated pre-birth training and its impact on the fear of childbirth	Midwife-led integrated pre-birth training	85% (n = 29) of the participants stated that midwife-led integrated pre-birth training enhanced their expectations for birth processes. They demonstrated readiness and preparedness for this process, which would lead to improved childbirth outcomes.	Qualitative research methodology does not intend to explore causal relationships. Also, the selection of participants was limited to those who visited the hospital and were screened for fear of childbirth.

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
Sheferaw et al. 2017	Ethiopia	Lower	Cross-sectional study design (observational)	Trained external observers assessed care provided to 240 women in 28 health centres and hospitals during labour and childbirth using structured observation checklists.	Description of prevalence of respectful maternity care (RMC) and mistreatment of women in hospitals and health centres, and identification of factors associated with occurrence of RMC and mistreatment of women	none	Women on average received 5.9 (66%) of the nine recommended RMC practices. Health centres demonstrated higher RMC performance than hospitals. At least one form of mistreatment of women was committed in 36% of the observations (38% in health centres and 32% in hospitals). Higher likelihood of performing high level	Observational design has an increased risk for confounding bias

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
					during institutional labour and childbirth services.		of RMC was found among male vs. female providers ([Formula: see text], p = 0.012), midwives vs. other cadres (p = 0.002), facilities implementing a quality improvement approach, Standards-based Management and Recognition (p = 0.003), and among labouring women accompanied by a companion (p = 0.003). No factor was associated with	

Reference	Country	World Bank classification (income)	Research methodology	Sample/ participants	Aims/ Objectives	Interventions	Findings	Limitations
							observed mistreatment of women.	

ANNEX 4: LETTER OF PERMISSION TO REPRODUCE A PAPER



Cooper, Emily (ELS-OXF)
RE: Enquiry: Publication included in dissertation [200930-010547]
To: Michaela Michel-Schuldt

Inbox - student.uts.edu.au 30. September 2020 at 10:59

EC

Dear Michaela,

Thank you and congratulations for publishing in *Midwifery*. My name is Emily and I'm the Publisher for the journal at Elsevier.

As the author of the article published in *Midwifery*, you retain the right to include it in a thesis or dissertation, provided it is not published commercially. Permission is not required, but please ensure that you reference the journal as the original source.

For more information on this and on your other retained rights, please visit: https://www.elsevier.com/about/our-business/policies/copyright#Author-rights

Best wishes,
Emily

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ANNEX 5: FIELD ACCESS BANGLADESH

Government of The People's Republic of Bangladesh
Directorate General of Health Services
Mohakhali, Dhaka-1212

Memo no: DGHS/ 229

Date: 07 November 2018

To
The Civil Surgeon
Cox's Bazar/Manikganj

Subject: Data collection.

This is to inform you that DGHS is implementing "Midwifery led Reproductive Health" with UNFPA's Support to 4th HPNSP through DGHS.

In that aspect Michaela Michel, Centre for Midwifery, Child and Family Health, Faculty of Health, New South Wales, Australia will collect data from different Upazilla Health Complex of Cox's Bazar and Manikganj district.

You are requested to cooperate her for data collection process.

Thanks for cooperation.

Dr. Mowla Baksh Choudhury
Assistant Director- Coordination &
Project Manager(Acting),
UNFPA's Support to 4th HPNSP through DGHS

Copy for information (Not According to seniority):

1. Director General, Directorate General of Health Services, Mohakhali, Dhaka (Attention: Assistant Director –Coordination)
1. Additional Director General(Admin), Directorate General of Health Services, Mohakhali, Dhaka
2. Line Director-MNC & AH, DGHS, Dhaka
3. Director-Health, Chittagong Division, Chittagong
4. Deputy Director-PHC and Program Manager-Maternal Health, MNC &AH, DGHS
5. Deputy Program Manager (EOC), Maternal Health-MNC &AH, DGHS
6. UHFPO----------, Cox's Bazar/Manikganj
7. Dr. Sathya Doraiswamy, Chief-Health, UNFPA
8. Md. S Zaman, Project Technical Officer-RH,UNFPA
9. Office copy

ANNEX 6: APPROVAL BY INTERNAL REVIEW BOARD BRAC UNIVERSITY

BRAC SCHOOL OF PUBLIC HEALTH
JAMES P GRANT

BRAC UNIVERSITY
Inspiring Excellence

TO BE THE LEADING GLOBAL PUBLIC HEALTH INSTITUTE FOR THE WORLD'S CRITICAL HEALTH CHALLENGES AFFECTING DISADVANTAGED COMMUNITIES

Date: 13.08.2018

IRB References No. (Please quote this ref on all correspondence)	2018-021-ER
Project Title:	Midwife-led care in low- and middle-income countries – case study Bangladesh
Principal Investigator:	Dr. Caroline Homer

Thank you for your application, which was considered by the Institutional Review Board (IRB) of the BRAC James P Grant School of Public Health, BRAC University. The following documents were reviewed:

1. Protocol
2. IRB Checklist
3. Consent Forms (Bangla and English)
4. Qualitative tools (Bangla and English)

The Institutional Review Board approves this study from an ethical point of view. The researchers have satisfactorily addressed the concerns raised by the IRB members and the reviewers.

Approval is given for one year. Projects, which have not commenced within one year of original approval, must be re-submitted to the IRB. You must submit project progress and completion report.

Serious adverse events or significant changes in connection with this study must be reported immediately to the IRB.

Approval is given on the understanding that the 'Guidelines for the BRAC JPGSPH IRB' will be adhered to.

Yours sincerely,

Malay Kanti Mridha
Chairperson of Institutional Review Board
James P Grant School of Public Health
BRAC University

BRAC JPG School of Public Health
68 Shahid Tajuddin Ahmed Sharani, 5th Floor (Level-6), icddr,b Building, Mohakhali, Dhaka-1212, Bangladesh
Phone: 880-2-9827501-4; Fax: +880 2 58810383; **Web: www.bracjpgsph.org**

ANNEX 7: UTS HIGHER RESEARCH ETHICS COMMITTEE APPROVAL

From: Research.Ethics@uts.edu.au
Subject: HREC Approval Granted - ETH17-1241
Date: 2. August 2017 at 01:19
To: Caroline.Homer@uts.edu.au, Michaela.Michel-Schuldt@uts.edu.au, Research.Ethics@uts.edu.au

Dear Applicant

Thank you for your response to the Committee's comments for your project titled, "Midwife-led care in low- and middle-income countries". Your response satisfactorily addresses the concerns and questions raised by the Committee who agreed that the application now meets the requirements of the NHMRC National Statement on Ethical Conduct in Human Research (2007). I am pleased to inform you that ethics approval is now granted.

UTS HREC approval is conditional upon the receipt of evidence of approval from the Bangladesh Medical Research Council (BMRC) and the Liberia's National Review Ethics Board (NREB) once obtained. UTS HREC approval is also conditional upon the receipt of evidence of support from all participating health centres and hospital sites prior to data collection.

Your approval number is UTS HREC REF NO. ETH17-1241.

Approval will be for a period of five (5) years from the date of this correspondence subject to the provision of annual reports.

Your approval number must be included in all participant material and advertisements. Any advertisements on the UTS Staff Connect without an approval number will be removed.

Please note that the ethical conduct of research is an on-going process. The National Statement on Ethical Conduct in Research Involving Humans requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually from the date of approval, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

You should consider this your official letter of approval. If you require a hardcopy please contact Research.Ethics@uts.edu.au.

To access this application, please follow the URLs below:
* if accessing within the UTS network: https://rm.uts.edu.au
* if accessing outside of UTS network: https://vpn.uts.edu.au , and click on " RM6 – Production " after logging in.

We value your feedback on the online ethics process. If you would like to provide feedback please go to:
http://surveys.uts.edu.au/surveys/onlineethics/index.cfm

If you have any queries about your ethics approval, or require any amendments to your research in the future, please do not hesitate to contact Research.Ethics@uts.edu.au.

Yours sincerely,

Associate Professor Beata Bajorek
Chairperson
UTS Human Research Ethics Committee
C/- Research & Innovation Office
University of Technology, Sydney
E: Research.Ethics@uts.edu.au

ANNEX 8: TOPIC GUIDE FOCUS GROUP DISCUSSION - SERVICE PROVIDERS: MIDWIVES AND NURSE-MIDWIVES

Focus group discussion topic guide
Service providers: midwives and nurse-midwives

Information sheet

Hello, my name is Michaela Michel-Schuldt and I am a student at the University of Technology, Sydney, Australia.

I am conducting a study on midwife-led care in low- and middle-income countries. This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally, this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

I have invited you to participate because you are working as a midwife or nurse-midwife in a midwife-led centre. Your contact details were obtained from the head of the centre. This discussion will take approximately one hour of your time. I will ask some questions and would like to encourage all of you to share your ideas.

The project has been approved by the Human Research Ethics Committee of UTS. Please note that your participation in the interview is entirely voluntary, and you can choose to discontinue your involvement in the study at any time. I will not be collecting nor recording any personally identifiable information on you or your working environment. Results will be reported in the aggregate. But it would be helpful if I could have your permission to tape record our conversation so I don't have to be distracted by taking notes.

Is that okay with you? Do you have any questions?

A) Outcomes of midwife-led care

1. Can you tell me about your centre and how you provide care here?
2. How do you think the care your centre provides impact on women and their babies?
3. How do women respond to the care your centre provides?
4. Do you feel that the model of care you work in has influence on your professional role?
5. Is there anything else you want to tell?

B) Framework in which midwife-led care is provided

6. Could you please describe how the care you provide is organised?
7. Could you describe if there are specific values and the philosophy of midwife-led care? What are these?

C) Barriers and facilitators to midwife-led care and potential to scale up

8. What has made it possible to put midwife led care into practice?
9. What has worked and helped?
10. What have made it hard or difficult?
11. How do you think this model of care could be made available to more women, newborns and their families?

D) Further questions

12. What is important to report back to the government/healthcare professionals about providing care during pregnancy, birth and postnatally?
13. What would you tell your family or friends about care during pregnancy, birth and postnatally?

ANNEX 9: TOPIC GUIDE FOCUS GROUP DISCUSSION - WOMEN

Focus group discussion topic guide

Service recipients: women

Information sheet

Hello, my name is Michaela Michel-Schuldt and I am a student at the University of Technology, Sydney, Australia.

I am conducting a study on midwife-led care in low- and middle-income countries. This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally, this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

I have invited you to participate because you have given birth in a midwife-led centre. Your contact details were obtained from the head of the centre. This discussion will take approximately one hour of your time. I will ask some questions and would like to encourage all of you to share your ideas.

The project has been approved by the Human Research Ethics Committee of UTS. Please note that your participation in the interview is entirely voluntary, and you can choose to discontinue your involvement in the study at any time. I will not be collecting nor recording any personally identifiable information on you or your working environment. Results will be reported in the aggregate. But it would be helpful if I could have your permission to tape record our conversation so I don't have to be distracted by taking notes.

Is that okay with you? Do you have any questions?

A) Outcomes of midwife-led care

1. Can you tell me about your experience giving birth here?
2. How do you feel about the care you received in this centre? How did it make you feel?
3. In your previous births, did you receive care anywhere else. What was it like? How was it different?

B) Framework in which midwife-led care is provided

4. How did the midwives care for you and your newborn during pregnancy, birth and in post-partum period?
5. How was this care organised?

C) Barriers and facilitator to midwife-led care and potential to scale up

6. What was good about your care
7. What was not so good
8. How could it have been improved?
9. Where there any issues that made it difficult for you to access this kind of care?
10. How do you think this care led by midwives could be available to more women, newborns and their families?

D) Further questions

11. What is important to report back to the government/healthcare professionals about providing care during pregnancy, birth and postnatally?
12. What would you tell your family or friends about care during pregnancy, birth and postnatally?

ANNEX 10: TOPIC GUIDE SEMI-STRUCTURED INTERVIEW TOPIC GUIDE - KEY INFORMANTS: POLICY MAKERS, EDUCATORS, MANAGERS, ADVISORS

Semi-structured interview topic guide

Key informants: policy makers, educators, managers, advisors

Information sheet

Hello, my name is Michaela Michel-Schuldt and I am a student at the University of Technology, Sydney, Australia.

I am conducting a study on midwife-led care in low- and middle-income countries. This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally, this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

I have invited you to participate because have contributed or are contributing to the development and organisation of midwife-led care in your country. Your contact details were obtained from an in-country advisory team. This interview will take approximately 30-45 minutes of your time. I will ask some questions and would like to encourage you to openly share your ideas and thoughts.

The project has been approved by the Human Research Ethics Committee of UTS. Please note that your participation in the interview is entirely voluntary, and you can choose to discontinue your involvement in the study at any time. I will not be collecting nor recording any personally identifiable information on you or your working environment. Results will be reported in the aggregate. But it would be helpful if I could have your permission to tape record our conversation so I don’t have to be distracted by taking notes.

Is that okay with you? Do you have any questions?

A) General questions
    1. Please describe your role related in the development and/or organisation of midwife-led care in this country
    2. In which period have you been involved in the development/organisation of that model of care
    3. Can you describe which other stakeholders have been or are involved in the development and/or organisation of midwife-led care?
    4. What were the reasons to develop/organise midwife-led care in your country?
B) Outcomes of midwife-led care
    5. Are you aware of any outcomes of the care led by midwives? Please describe?
C) Framework in which midwife-led care is provided
    6. Could you please describe how the model of care is organised?
D) Barriers and facilitator to midwife-led care and potential to scale up
    7. Could you please describe what facilitated/facilitates to the provision of midwife-led care?
        - These isuses will be raised if needed:
            - Steering and resource mobilisation (recognition of priority)
            - Improving access and uptake of midwife-led care (removal of barrier to access)
            - Effective coverage (effective and safe interventions and skills)
    8. Could you please describe what barriers hinder/hindered the provision of midwife-led care?
        - These isuses will be raised if needed:
            - Steering and resource mobilisation (recognition of priority)

- Improving access and uptake of midwife-led care (removal of barrier to access)
- Effective coverage (effective and safe interventions and skills)

9. Do you think that midwife-led care should be scaled up? If so, how?

E) Further questions

10. What is important to report back to the government/donors/implementing partners about providing care during pregnancy, birth and postnatally?

ANNEX 11: TOPIC GUIDE SEMI-STRUCTURED INTERVIEW TOPIC GUIDE - RELATED HEALTH PROFESSIONALS (MEDICAL DOCTORS, AUXILIARY MIDWIVES, NURSES, COMMUNITY HEALTH WORKERS ETC.)

Semi-structured interview topic guide

Related health professionals (medical doctors, auxiliary midwives, nurses, community health workers etc.)

Information sheet

Hello, my name is Michaela Michel-Schuldt and I am a student at the University of Technology, Sydney, Australia.

I am conducting a study on midwife-led care in low- and middle-income countries. This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally, this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

I have invited you to participate because you are working as a provider of care related to a midwife-led birth centre. Your contact details were obtained from the head of the midwife-led centre. This interview will take approximately 30-45 minutes of your time. I will ask some questions and would like to encourage you to openly share your ideas and thoughts.

The project has been approved by the Human Research Ethics Committee of UTS. Please note that your participation in the interview is entirely voluntary, and you can choose to discontinue your involvement in the study at any time. I will not be collecting nor recording any personally identifiable information on you or your working environment. Results will be reported in the aggregate. But it would be helpful if I could have your permission to tape record our conversation so I don’t have to be distracted by taking notes.

Is that okay with you? Do you have any questions?

F) General questions

11. Please describe your role as a care provider
12. In what way are you working in relation to the midwife-led centre? Could you please describe the nature of interaction with the midwives in the midwife-led centre?

G) Outcomes of midwife-led care

13. Are you aware of any outcomes of the care led by midwives? Please describe?
14. Do your think there any difference of midwife-led care compared to the care you provide? If so, please describe.

H) Framework in which midwife-led care is provided

15. Could you please describe how the model of care is organised?
16. How does this impact on your practice?

I) Barriers and facilitator to midwife-led care and potential to scale up

17. Could you please describe what facilitated/facilitates to the provision of quality midwife-led care?

- These issues will be raised if needed:
    - Steering and resource mobilisation (recognition of priority)
    - Improving access and uptake of midwife-led care (removal of barrier to access)
    - Effective coverage (effective and safe interventions and skills)

18. Could you please describe what barriers hinder/hindered the provision of midwife-led care?

These issues will be raised if needed:

- Steering and resource mobilisation (recognition of priority)
- Improving access and uptake of midwife-led care (removal of barrier to access)
- Effective coverage (effective and safe interventions and skills

19. Do you think that midwife-led care should be scaled up? If so, how?

J) Further questions

20. What is important to report back to the government/healthcare professionals about providing care during pregnancy, birth and postnatally?
21. What would you tell your family or friends about care during pregnancy, birth and postnatally?

ANNEX 12: PARTICIPANT INFORMATION SHEET – FOCUS GROUP WITH SERVICE PROVIDERS

Centre for Midwifery, Child and Family Health
Faculty of Health
Jones St, Ultimo 2007 (PO Box 222)
New South Wales, Australia

PARTICIPANT INFORMATION SHEET

- **Focus group discussion for service providers -**

WHO IS DOING THE RESEARCH?

My name is Michaela Michel-Schuldt and I am a PhD Midwifery student at the University of Technology Sydney in Australia. My supervisor is Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia

WHAT IS THIS RESEARCH ABOUT?

This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

FUNDING

Funding for this project has been received from the International Confederation of Midwives.

WHY HAVE I BEEN ASKED?

You have been invited to participate in this study because you are working as a midwife or nurse-midwives in a midwife-led centre. Your contact details were obtained by/from the head of the centre.

IF I SAY YES, WHAT WILL IT INVOLVE?

If you decide to participate, I will invite you to participate in a focus group discussion with a group of 6-9 other midwives. I will ask you some questions and the group discussion will last about an hour. The discussion will be audio-recorded so that I can listen back later and I will take notes.

ARE THERE ANY RISKS/INCONVENIENCE?

Yes, there are some risks/inconvenience. You might feel uncomfortable to share your experience working in a midwife-led centre and be concerned that information you share might be shared with others which could affect your employment or re-registration/re-licensing. I can ensure you that you can stop the interview at any point and if you like will be able to continue. The information you share will be kept confidential. This means that only the researcher will be able to link your person with the information you provided.

DO I HAVE TO SAY YES?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part.

WHAT WILL HAPPEN IF I SAY NO?

If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason, by contacting Michaela Michel-Schuldt (phone number Liberia/Bangladesh).

If you decide to leave the discussion, we will not collect additional personal information from you. You should be aware that data collected up to the time you withdraw will form part of the research project results.

CONFIDENTIALITY

By signing the consent form you consent to the research team collecting personal information about you. All this information will be treated confidentially and your name will not be shared with anyone else. Information you have given will be de-

identified so that your name will not appear in connection to the findings. Information will be stored on a password-protected device and on the university server so it is secure. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

We plan to publish the results in academic journals and at conferences. In any publication, information will be provided in such a way that you cannot be identified.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact us on

Researcher's Contact Details: Michaela Michel-Schuldt, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia, Telephone, Email

Supervisor's Contact Details: Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia

Please also note that if you have concerns you can share them with a local contact person

Dr. Selina Amin
Head, Midwifery Education Programme &
Project Director, Developing Midwives Project
James P Grant School of Public Health, BRAC University
5th Floor, (Level-6), icddr,b Building,
68 Shahid Tajuddin Ahmed Sharani, Mohakhali, Dhaka-1212, Bangladesh

Sabina Faiz Rashid, PhD
Dean and Professor
James P Grant School of Public Health, BRAC University
5th Floor, (Level-6), icddr,b Building,

68 Shahid Tajuddin Ahmed Sharani, Mohakhali, Dhaka-1212, Bangladesh

NOTE:

This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. The approval number is UTS HREC REF NO. ETH17-1241

If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au], and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

ANNEX 13: PARTICIPANT INFORMATION SHEET – SEMI STRUCTURED INTERVIEWS WITH HEALTH PROFESSIONALS

Centre for Midwifery, Child and Family Health
Faculty of Health
Jones St, Ultimo 2007 (PO Box 222)
New South Wales, Australia

PARTICIPANT INFORMATION SHEET

- Semi-structured interviews health professionals -

Midwife-led care in low- and middle-income countries

WHO IS DOING THE RESEARCH?

My name is Michaela Michel-Schuldt and I am a student at the University of Technology Sydney in Australia. My supervisor is Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia

WHAT IS THIS RESEARCH ABOUT?

This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

FUNDING

Funding for this project has been received from the International Confederation of Midwives.

WHY HAVE I BEEN ASKED?

You have been invited to participate in this study because you are working as nurse, medical doctor or traditional birth attendant alongside the midwives in the midwife-led centre. Your contact details were obtained by/from the head of the centre.

IF I SAY YES, WHAT WILL IT INVOLVE?

If you decide to participate, I will invite you to participate in an interview in which you will discuss with you your experience working with midwives in a midwife-led centre. I will ask you a set of questions and will last about 30-45 minutes. The interview will be audio-recorded so that I can listen back later and I will take notes.

ARE THERE ANY RISKS/INCONVENIENCE?

Yes, there are some risks/inconvenience. They are that you might feel uncomfortable to share your experience working in relation to midwives in a midwife-led centre and that information you share might be shared with others which could affect your employment or in general working relationships. I can ensure you that you can stop the interview at any point and if you like will be able to continue. The information you share will be kept confidential. This means that only myself will be able to link your person with the information you provided.

DO I HAVE TO SAY YES?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part.

WHAT WILL HAPPEN IF I SAY NO?

If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason, by contacting Michaela Michel-Schuldt (phone number Liberia/Bangladesh).

If you decide to leave the discussion, we will not collect additional personal information from you. You should be aware that data collected up to the time you withdraw will form part of the research project results.

CONFIDENTIALITY

By signing the consent form you consent to the research team collecting and using personal information about you for the research project. All this information will be treated confidentially. Information you have given will be de-identified so

that your name will not appear in connection to the findings. Information will be stored on a password-protected device and at the university server. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

We plan to publish the results in academic journals and at conferences. In any publication, information will be provided in such a way that you cannot be identified.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact us on

Researcher's Contact Details: Michaela Michel-Schuldt, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia.

Supervisor's Contact Details: Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia.

Please also note that if you have concerns you can share them with a contact person in Bangladesh

Dr. Selina Amin
Head, Midwifery Education Programme &
Project Director, Developing Midwives Project
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NOTE:

This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au], and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

ANNEX 14: PARTICIPANT INFORMATION SHEET – SEMI STRUCTURED INTERVIEWS WITH KEY INFORMANTS

UTS
UNIVERSITY OF TECHNOLOGY SYDNEY

PARTICIPANT INFORMATION SHEET

- Semi-structured interviews key informants -

Midwife-led care in low- and middle-income countries

WHO IS DOING THE RESEARCH?

My name is Michaela Michel-Schuldt and I am a PhD student at the University of Technology Sydney in Australia. My supervisor is Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia.

WHAT IS THIS RESEARCH ABOUT?

This research is to firstly find out about how midwife-led care is being implemented in selected low- and middle-income countries and secondly to describe the outcomes from this model of care. The study will also examine how this model of care has been provided and assess the facilitators and barriers to successful implementation of this model of care. Finally this study will examine whether such a model of care could be implemented or scaled-up more widely in other countries.

FUNDING

Funding for this project has been received from the International Confederation of Midwives.

WHY HAVE I BEEN ASKED?

You have been invited to participate in this study because you have been or currently are involved in the development or management of midwife-led centres. Your contact details were obtained from the national advisory committee of this study.

IF I SAY YES, WHAT WILL IT INVOLVE?

If you decide to participate, I will invite you to participate in an interview in which you will discuss with you your experience working around the development or implementation of midwife-led centres. I will ask you a set of questions and will last about 30-45 minutes. The interview will be audio-recorded and the researcher will take notes.

ARE THERE ANY RISKS/INCONVENIENCE?

Yes, there are some risks/inconvenience. They are that you might feel uncomfortable to share your experience working around the development or implementation around midwife-led centres and that information you share might be shared with others which could affect your employment or in general working relationships. I can ensure you that you can stop the interview at any point and if you like will be able to continue. The information you share will be kept confidential. This means that the researcher will be able to link your person with the information you provided.

DO I HAVE TO SAY YES?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part.

WHAT WILL HAPPEN IF I SAY NO?

If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason, by contacting Michaela Michel-Schuldt.

If you decide to leave the discussion, we will not collect additional personal information from you. You should be aware that data collected up to the time you withdraw will form part of the research project results.

CONFIDENTIALITY

By signing the consent form you consent to the research team collecting and using personal information about you for the research project. All this information will be treated confidentially. Information you have given will be de-identified so that your name will not appear in connection to the findings. Information will be stored on a password-protected device and at the university server. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

We plan to publish the results in academic journals and at conferences. In any publication, information will be provided in such a way that you cannot be identified.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact us on

Researcher's Contact Details: Michaela Michel-Schuldt, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia.

Supervisor's Contact Details: Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia.

Please also note that if you have concerns you can share them with a contact person in Bangladesh

Dr. Selina Amin
Head, Midwifery Education Programme &
Project Director, Developing Midwives Project
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NOTE:
This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. Approval number is UTS HREC REF NO. ETH17-1241
If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au], and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

ANNEX 15: CONSENT FORM ENGLISH

CONSENT FORM

Midwife-led care in low- and middle-income countries

I _____ *[participant's name]* agree to participate in the research project *"Midwife-led care in low- and middle-income countries"* being conducted by the PhD Midwifery student Michaela Michel-Schuldt and her supervisor Professor Caroline Homer, Faculty of Health, University of Technology Sydney, Jones St, Ultimo 2007, (PO Box 222), Australia. I understand that funding for this research has been provided by *the International Confederation of Midwives.*

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research as described in the Participant Information Sheet.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time without affecting my relationship with the researchers or the University of Technology Sydney.

I understand that I will be given a signed copy of this document to keep.

I agree to keep confidential all information including all conversations and discussions, materials and methods provided to me by the UTS research team.

I agree that the research data gathered from this project may be published in a form that:

☐ Does not identify me in any way

I am aware that I can contact the PhD Midwifery student Michaela Michel-Schuldt on Telephone XXXX and her supervisor Professor Caroline Homer on XXXX if I have any concerns about the research.

Please also note that if you have concerns you can share them with a local contact person.

Dr. Selina Amin
Head, Midwifery Education Programme &
Project Director, Developing Midwives Project
James P Grant School of Public Health, BRAC University
5th Floor, (Level-6), icddr,b Building,
68 Shahid Tajuddin Ahmed Sharani, Mohakhali, Dhaka-1212, Bangladesh

Sabina Faiz Rashid, PhD
Dean and Professor
James P Grant School of Public Health, BRAC University
5th Floor, (Level-6), icddr,b Building,
68 Shahid Tajuddin Ahmed Sharani, Mohakhali, Dhaka-1212, Bangladesh

_____ ____/____/____
Name and Signature [participant] Date

_____ ____/____/____
Name and Signature [researcher or delegate] Date

NOTE:

This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au, and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

ANNEX 16: PARTICIPANT INFORMATION SHEET BANGLA

সেন্টার ফর মিডওয়াইফারি, শিশু ও পরিবার স্বাস্থ্য
স্বাস্থ্য অনুষদ
জোন্স স্ট্রিট, আলটিমো ২০০৭ (পি ও বক্স ২২২)
নিউ সাউথ ওয়েলস, অস্ট্রেলিয়া

নিম্ন ও মধ্যম আয়ের দেশগুলোতে মিডওয়াইফ সেবা

অংশগ্রহণকারীদের জন্য তথ্য কণিকা

সেবাপ্রদানকারীদেরসাথে দলীয় আলোচনার জন্য

কে এই গবেষণা করছেন?
আমার নাম মিশায়েলা মিশেল-সুলেতে এবং আমি UTS–এরএকজন শিক্ষার্থী। আমার সুপারভাইজারের নাম অধ্যাপক কেরলাইন হমার, স্বাস্থ্য অনুষদ, ইউনিভার্সিটি অফ টেকনোলজি সিডনি, জোন্স স্ট্রিট, আলটিমো ২০০৭ (পি ও বক্স ২২২), নিউ সাউথ ওয়েলস, অস্ট্রেলিয়া। টেলিফোন-+ ৬১২ ৯৫১৪ ৪৮৮৬, মোবাইল- ০৪ ১৮ ৪৬৬ ৯৭৪

এই গবেষণার উদ্দেশ্য কি?
এই গবেষনার উদ্দেশ্য হচ্ছে নির্বাচিত নিম্ন ও মধ্যম আয়ের দেশগুলোতে কি ভাবে মিডওয়াইফ সেবা প্রদান করা হচ্ছে এবং এর ফলাফল কিরূপ তা অনুসন্ধান করা। এই অধ্যায়নের মাধ্যমে আমরা আরও যা জানতে পারব তা হল কিভাবে এই সেবার মডেলটি বাস্তবায়ন করা হচ্ছে। সেবাদান কারীর মান কি ভাবে পরিমাপ করা হয়। সফলতার সাথে এই সেবাদানে বাধা গুলো কি কি।পরিশেষে আমরা জানতে চাই এই ধরনের সেবার মডেলঅন্যান্য দেশে আরও ব্যাপক ভাবে বাস্তবায়ন সম্বভ কি না।

অর্থায়ন কে করছে?
গবেষণাটি পরিচালনার জন্য অর্থায়নকরেছে ইন্টারন্যাশনাল কনফেডারেশন অফ মিডওয়াইভস।

আমাকে কি ভাবে নির্বাচিত করা হল?
আপনাকে এই গবেষনায় অংশগ্রহনের জন্য আমন্ত্রন জানানো হয়েছে কারণ আপনি একজন মিডওয়াইফ বা নার্স-মিডওয়াইফ হিসেবে মিডওয়াইফারি সেবার সাথে জড়িত আছেন। আপনার সাথে যোগাযোগের বিস্তারিত তথ্য আপনার ঊর্ধ্বতন কতৃপক্ষ এর কাছ থেকে সংগ্রহ করা হয়েছে।

আমি আংশগ্রহনে সম্মত হলে আমাকে কি করতে হবে?
আপনি যদি অংশগ্রহন করতে ইচ্ছুক হন তাহলে আপনাকে আমরা আমন্ত্রন জানাবো দলীয় আলোচনার জন্য যেখানে ৬-৯ জন মিডওয়াইফ অংশগ্রহণ করবেন। আমি আপনাদেরকে কিছু প্রশ্ন করবো এবং এই আলোচনাটি ১ ঘণ্টার মত চলবে। সাক্ষাৎকারটি অডিও রেকর্ডিং করা হবে যাতে পরে আমি শুনতে পারি এবং আমি নোট নিবো।

অংশগ্রহন করলে কোন ঝুঁকি/অসুবিধা আছে কি?
হ্যাঁ, কিছু ঝুঁকি বা অসুবিধা আছে। মিডওয়াইফারি সেবাদান ইউনিটে কাজ করার অভিজ্ঞতার কথা আলোচনাকালে আপনার অস্বস্তি লাগতে পারে এবং আপনার মনে হতে পারে যে সকল তথ্য আপনি আমাকে দিচ্ছেন তা যদি আপনার সহকর্মীরা জেনে ফেলে তাহলে চাকরিক্ষেত্রে কিংবা লাইসেন্স পুনঃনিবন্ধনের সময়ে তা অসুবিধার সৃষ্টি করতে পারে। আমি আপনাকে নিশ্চিত করছি যে, আপনার প্রদত্ত সকল তথ্য গোপনীয়তার সাথে সংরক্ষণ করা হবে এবং আমি ছাড়া আর কেউ তা জানতে পারবে না। আপনি চাইলে যেকোনো সময় সাক্ষাৎকার বন্ধ করে দিতে পারেন এবং চাইলে পুনরায় তা চালিয়ে যেতে পারেন।

অংশগ্রহণ কি বাধ্যতামূলক?
অংশগ্রহন সম্পূর্ণ স্বেচ্ছামূলক। আপনি এই গবেষণায় অংশগ্রহন করবেন কি না তা একান্তই আপনার ইচ্ছার উপরে নির্ভর করে।

আমি যদি অংশগ্রহন করতে না চাই তাহলে কি হবে?
গবেষণাটি শুরু হওয়ার মাঝখানে আপনি যদি অংশগ্রহন প্রত্যাহার করতে চান তা আপনি যে কোন সময় বিনা কোন অজুহাত প্রদর্শন করে তা করতে পারবেন। এ ক্ষেত্রে আপনি মিশায়েলা মিশেল-সুলেতের সাথে যোগাযোগ করতে পারেন। (ফোন নাম্বার বাংলাদেশ----------) আলোচনার মাঝখানে অংশগ্রহন প্রত্যাহার করে নিলে আপানার ব্যক্তিগত তথ্য আর ব্যাবহার করা হবে না তবে অংশগ্রহন প্রত্যাহারের পূর্ব মুহূর্ত পর্যন্ত যে সকল তথ্য প্রদান করেছেন তা এই গবেষণা প্রকল্পের ফলাফলের অংশ হিসেবে পরিগণিত হবে।

ANNEX 17: CONSENT FORM BANGLA

স্বাস্থ্য অনুষদ
জোন্স স্ট্রিট, আলটিমো ২০০৭ (পি ও বক্স ২২২)
নিউ সাউথ ওয়েলস, অস্ট্রেলিয়া

সম্মতি ফরম

নিম্ন ও মধ্যম আয়ের দেশগুলোতে মিডওয়াইফ সেবা

আমি----------(*অংশগ্রহনকারীর নাম*) "নিম্ন ও মধ্যম আয়ের দেশগুলোতে মিডওয়াইফ সেবা" শীর্ষক গবেষণায় অংশগ্রহন করতে সম্মত হয়েছি। গবেষণাটি পরিচালনা করছেন অধ্যাপক কেরলাইন হমার, স্বাস্থ্য অনুষদ, ইউনিভার্সিটি অফ টেকনোলজি সিডনি, জোন্স স্ট্রিট, আলটিমো ২০০৭ (পি ও বক্স ২২২), নিউ সাউথ ওয়েলস, অস্ট্রেলিয়া। গবেষণাটি পরিচালনার জন্য অর্থায়ন করছে ইন্টারন্যাশনাল কনফেডারেশন অফ মিডওয়াইভস।

আমি অংশগ্রহনের পূর্বে গবেষণা সম্পর্কিত তথ্য কণিকা পড়েছি অথবা আমি যে ভাষা বুঝি সে ভাষায় আমাকে পড়ে শুনানো হয়েছে।

আমি এই গবেষণার উদ্দেশ্য, পদ্ধতি এবং ঝুঁকি সম্পর্কে অবগত আছি যা অংশগ্রহনকারির জন্য তৈরি তথ্য কণিকায় উল্লেখিত আছে।

গবেষণা সম্পর্কে বিস্তারিত জানার জন্য আমার প্রশ্ন করার সুযোগ ছিল এবং আমার প্রশ্নের উত্তর গুলো যথাযথভাবে পেয়েছি ও সন্তুষ্ট হয়েছি।

আমি স্বেচ্ছায় উক্ত গবেষণায় অংশগ্রহন করছি এবং যেকোন মুহূর্তে আমার অংশগ্রহণ প্রত্যাহার করতে পারবো এতে ইউনিভার্সিটি অফ টেকনোলজির গবেষকের সাথে আমার সম্পর্কের কোন অবনতি ঘটবে না।

সংরক্ষণের জন্য এই তথ্য ফরমের একটি স্বাক্ষরিত অনুলিপি আমাকে দেয়া হবে।

আমি সম্মত হয়েছি যে, গবেষণায় ইউটিসি গবেষক দলের সাথে বিনিময় করা সকল তথ্য, আলোচনা, কথোপকথন এবং উপকরণ সমুহের গোপনীয়তা রক্ষা করবো।

আমি সম্মত হয়েছি এই গবেষণার রিপোর্ট প্রকাশিত হলে আমার নাম বা আমাকে চিহ্নিত করা যায় তেমন কোন তথ্য থাকবে না।

উক্ত গবেষণার বিষয়ে যে কোন প্রকার তথ্য পেতে চাইলে আমি সরাসরি অধ্যাপক কেরলাইন হমার এর সাথে যোগাযোগ করতে পারবো। টেলিফোন-+ ৬১২ ৯৫১৪ ৪৮৮৬, মোবাইল- ০৪ ১৮ ৪৬৬ ৯৭৪, ইমেইল- caroline.homer@uts.edu.au

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নাম ও স্বাক্ষর (অংশগ্রহণকারী) তারিখ

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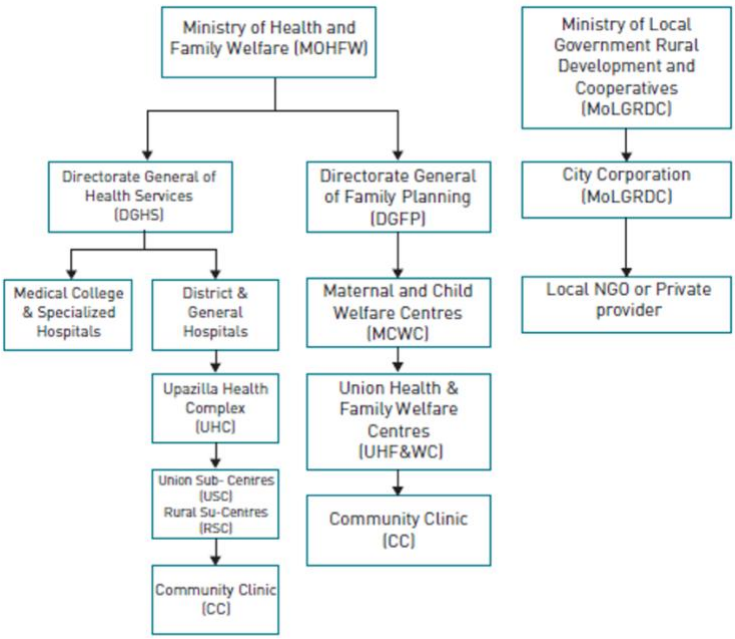
নাম ও স্বাক্ষর (গবেষক/প্রতিনিধি) তারিখ

নোট-
এই গবেষণা প্রকল্পটি ইউনিভার্সিটি অফ টেকনোলজি সিডনি এর মানব গবেষণা নীতি মূল্যায়ন কমিটি দ্বারা অনুমোদিত। উক্ত গবেষণার বিষয়ে আপনার যে কোন উদ্বেগ বা অভিযোগ জানাতে যোগাযোগ করতে পারেন। ঠিকানা- এথিক্স সেক্রেটারিয়েট, ফোন-৬১ ২ ৯৫১৪ ২৪৭৮ অথবা ইমেইল- Research.Ethics@uts.edu.au. UTS HREC রেফারেন্স নাম্বার উদ্ধৃত করুন। যে কোন বিষয় উত্থাপিত হলে তা গোপনীয়তার সাথে পর্যবেক্ষণ করা হবে এবং তদন্ত সাপেক্ষে আপানাকে সিদ্ধান্ত জানিয়ে দেয়া হবে।

ANNEX 18: HEALTH SYSTEM BANGLADESH



Source: http://www.lightcastlebd.com/blog/2016/04/bangladesh-healthcare-industry-the-thriving-industry-that-is-growing-faster-than-the-gdp

ANNEX 19: FINDINGS FROM LITERATURE REVIEWS AND PHASE 1 AND 2 COMBINED

	Scoping review and integrative review	PHASE 1		PHASE 2
Health service delivery	Midwife-led care might improve maternal mortality and morbidity, might reduce interventions and could improves Quality of Care; MLC is provided in a variety of settings: urban and rural; in primary, secondary or tertiary facilities; in the private and public sector; in free-standing or alongside midwife-led centres;	Introduction of MLC, National guidelines for midwives	Supportive (enabling) environments are important for MLC to thrive	De-medicalising childbirth; Providing and receiving respectful maternity care; Positioning women's needs at the centre; A place for practising midwifery; Integrating services; Monitoring and evaluating services to improve midwife-led care; Providing care along the continuum; Caring for all women, with and without complications

Health workforce	Some aspects within midwife-led care such as pre-birth interventions to reduce fear of childbirth seem promising, whereas others such as respectful maternity care and newborn resuscitation need further attention; Mainly midwives and nurse-midwives sometimes in collaboration provide MLC; working alone or in teams; Workforce shortages exist and impact the provision of MLC	Workforce needs assessment, State of the World's Midwifery Report		Mentoring as key to becoming a competent midwife; Midwife-led centres as learning spaces
Health information	Midwife-led care increases women's satisfaction, empowerment and meets the needs of the population			Having choice and giving consent; Shifting from fear in childbirth to courage; Investing in health: health promotion and prevention
Leadership	Midwives are not involved in policy dialogues around MLC	Commitment at highest political level in the international arena paramount		Empowering women; Needing power to prescribe medication; Having professional control; Managing and supervising in new organisational structures

Financing	Midwife-led care might be cost-effective	Donors align to support government's priorities; Domestic resources in midwifery will bring return of investment		Calculating the cost of care

Governance	Standards of practice for midwives such as education, regulation, training influence quality in MLC	Political will needs to be translated into policy documents; National Midwifery Strategy 2009 and 2014 update (up-skilling and scaling-up of midwifery by both public and private sector); Creation of midwifery posts; Health, population and nutrition sector plan		Setting policies and procedures

SUPPLEMENT 1: OVERVIEW OF STUDIES INTEGRATIVE REVIEW (PUBLICATION)

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
Narchi et al. (2009)	14	to analyse the exercise of essential competencies for midwifery care by nurses and/or midwives in the public health system of São Paulo (eastern zone) Brazil.	Nurses and midwives were not able to work within their full scope of practice because of institutional barriers and personal resistance	various	nurses and midwives	Brazil	descriptive (survey)	75
Rolfe et al. (2008)	16	describe and contextualise the independent midwifery sector, and use these findings to consider its potential within a strategy to increase overall skilled attendance at delivery.	Independent midwifery practices by retired Nursing Officers offering personalised care in under-served areas, but delivery coverage is low. Sustainability and utilisation in poor communities requires supportive measures such as reform of the costly registration procedures and consideration of on-going financing arrangements such as micro-credit, contracting or vouchers.	general	midwives	Tanzania	mixed-method (review plus case studies)	72
Adolphson et al. (2016a)	22	to explore midwives' perspectives of their working conditions, their professional role, and perceptions of attitudes towards mothers in a low-resource setting	commitment/devotion and lack of resources. All informants described empathic care giving, with deep engagement with the mothers and highly valued working in teams. Lack of resources prevented the midwives from providing care and created frustration and feelings of insufficiency	various	midwives	Mozambique	qualitative	100
Ackers et al. (2016)	24	understanding the underlying causes of maternal mortality	Human resource dynamics are the key to understanding maternal delays in low resource settings. • Health worker absenteeism (mainly doctors) is a major contributory factor • failure of doctors to be present during their contracted hours directly contributes to delays and poor maternal and neonatal outcomes. • Human resource management lies at the heart of this problem; policy attention to motivational factors and enforcement would significantly improve health system efficiency.	general	midwives (and medical doctors)	Uganda	case study, mixed method	81

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
D' Ambruosoet al. (2006)	30	to conduct a confidential enquiry to assess the quality of care provided by Indonesian village midwives and to identify opportunities for improvement	midwives facilitated referral effectively, reducing delays in reaching health facilities. Midwives' emergency diagnostic skills were accurate but they were less capable in the clinical management of complications. Coverage was poor; in some locations, midwives were responsible for up to five villages. Village midwives were also perceived as unacceptable to women and their families. Families and communities did not prepare for emergencies with finances or transport, partly due to a poorly understood health insurance system	intrapartum	midwives	Indonesia	Confidential enquiries, mixed method (clinical data and interviews)	100
Pettersso net al. (2001)	32	to describe the lived experiences of autonomous midwives working in Angolan midwifery-led maternity units	four main areas emerged: society/culture, significant others, personal self and professional self. Sub-areas, concepts and supporting statements were defined in each area.	general	midwives	Angola	qualitative (phenom	75
Wood et al. (2013)	34	to examine factors that affect retention of public sector midwives throughout their career in Afghanistan.	appropriate selection influences deployment and retention of midwives later on in their career; other factors that influence retention are security, community and family support, salary levels, opportunities for learning, workplace support and efficient planning	intrapartum	midwives	Afghanistan	descriptive/qualitative	75
Makowiecka et al. (2007)	37	examine the midwives' professional characteristics and their place of work relative to the population and area that they serve, and discuss the place of workforce density in a strategy to reduce maternal mortality.	Most deliveries are managed by a single-handed midwife in a woman's home where conditions may be basic and her capacity to access emergency care limited. There is a paucity of midwives in remote villages resulting in a more demanding and isolated professional environment with a high turn-over of practitioners. The low obstetric workload of midwives compromises their professional capacity through lack of skill maintenance. A policy shift from home births to community-based facility births would enable midwives to offer a better service by operating in teams, thus increasing their obstetric workload and thereby their exposure to complications, and by facilitating access to emergency obstetric care.	general	midwives	Indonesia	descriptive/survey	66
Ensor et al. (2008)	38	explore the extent to which the incentives faced by rural midwives' support government objectives to deliver maternal health services to remote, rural areas.	Rural midwives in Indonesia earn substantial income from private practice. This needs to be replaced by the public sector if they are to properly serve those who cannot afford to pay for services. Ensuring that midwives are available in rural areas requires both additional funding for guaranteed salaries and also development of career pathways that attract staff to these areas at an early stage in their careers. Women are well able to differentiate between good and bad midwives, perhaps using knowledge gained from informal community networks."	general	midwives	Indonesia	survey	100

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
Rouleau et al. (2012)	40	explore midwives' job satisfaction and its effects on their burnout, intention to quit and professional mobility.	High intention to quit, but low turnover; departures voluntary and only domestic. Midwives were moderately satisfied, low remunerations and poor working conditions main factor comprise to low satisfaction, moral and job security contribute to high satisfaction. High levels of emotional exhaustion and depersonalisation	general	midwives	Senegal	descriptive/survey	75
Kaye et al. (2000)	43	To determine the quality of care provided by midwives in Soroti district; and specifically, to identify training needs, gaps in knowledge and other barriers to accessibility of emergency obstetric care (EmOC) services in Soroti district.	Many midwives were providing care of poor quality for both antenatal and delivery care due to their inability to identify and manage women with or at risk of pregnancy complications.	intrapartum	midwives	Uganda	qualitative (descriptive cross-sectional)	66
Shaban et al. (2012)	44	to identify the current barriers to developing midwifery as a primary health-care strategy in Jordan and to explore the strategies to overcome these barriers	the professional identity and image for midwifery has been confused within a medically dominated health system and has not been seen as a primary health strategy. Midwives are not able to practice to the full role and scope of the midwife.	general	midwives	Jordan	Action research	75
Walker et al. (2013)	48	evaluate the relative strengths of adding an obstetric nurse or professional midwife to the physician based team in rural clinics	Intervention clinic were more likely to score highly on the index for favourable practices on admission and during labour, childbirth, and immediately postpartum and less likely to use excessively used or harmful practices during labour, childbirth and immediately postpartum. There was a significant increase in volume of care in intervention clinics for antenatal visits, deliveries and for postpartum visits	intrapartum	midwives and obstetricians	Mexico	Cluster RCT	75
Gu et al. (2013)	49	(1) To develop and implement a model of Chinese midwives' antenatal clinic service and (2) to explore its effect on childbirth outcomes, psychological state and satisfaction, for primiparae.	midwives group had higher vaginal birth rates, higher satisfaction but lower anxiety scores of women, no differences in neonatal APGAR scores and bleeding two hours postpartum	antenatal, intrapartum	midwives, doctors	China	RCT	100
Wu et al. (2011)	50	describe the trial implementation and the impact of the trial on the utilisation of prenatal care and perinatal outcomes	Implementation of the intervention was deficient. The factors hindering the trial implementation included poor coordination between midwives and family planning officers, broader policy changes implemented by the provincial government during the trial, the decentralisation of county governance, and the lack of government funding for maternal care. There was only little difference in the use of maternal care, in women's opinions related to maternal care or content of prenatal care, and no difference in the perinatal	antenatal ,intrapartum	midwives	China	mixed method	81

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
			outcomes between the intervention and control townships.					
Blum et al. (2006)	62	to examine the feasibility of home- vs. facility-based delivery from the perspective of 13 skilled birth attendants	major constraints encountered during home deliveries, including poor transportation, inappropriate environment for delivery, insufficient supplies and equipment, lack of security, and inadequate training and medical supervision, which may prevent the provision of skilled care. Most difficult was the pressure by families to adhere to traditional childbirth norms and convincing families to accept the need for referral. The advantages highlighted of attending births in a health facility were the safe, clean environment, availability of supplies, ability to accommodate other work activities and make quick referrals, and higher coverage.	intrapartum	nurse-midwives, lady family planning visitors	Bangladesh	qualitative	75
Bradley et al. (2009)	63	perceptions of these mid-level cadres on the factors that influence their performance and retention within health care systems are scarce.	Participants confirmed the difficulties of their working conditions and the clear commitment they have to serving the rural Malawian population. Although insufficient financial remuneration had a negative impact on retention and performance, the main factors identified were limited opportunities for career development and further education (particularly for clinical officers) and inadequate or non-existent human resources management systems. The lack of performance-related rewards and recognition were perceived to be particularly demotivating.	general	medical officers, nurse-midwives	Malawi	qualitative	100
DeMaria et al. (2012)	65	compare and contrast these two provider types with the medical model, analysing perspectives on their respective training, scope of practice, and also their perception and/or experiences with integration into the public system as skilled birth attendants	All provider types interviewed expressed confidence in their professional training and acknowledge that both professional midwives and obstetric nurses have the necessary skills and knowledge to care for women during normal pregnancy and childbirth. The three types of providers recognise limits to their practice, namely in the area of managing complications. We found differences in how each type of practitioner perceived the concept and process of birth and their role in this process. The barriers to incorporation as a model to attend birth faced by PMs and ONs are at the individual, hospital and system level. GPs question their ability and training to handle deliveries, in particular those that become complicated, and the professional midwifery model particularly as it relates to a clinical setting, is also questioned.	intrapartum	midwives, physicians	Mexico	qualitative	75

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
Fujita et al. (2012)	66	to describe the process of introduction and implementation of humanised care (humanised childbirth); to determine how the practice of humanised care affects midwives, obstetricians, and other service providers in the hospital; and to determine the factors influencing the change in practice	humanised care was initiated by midwives with hesitation and difficulties; communication between midwives and women and their families improved; care more appreciated; effects on professional value of midwives; motivation increased performance; positive influence on obstetricians and staff was observed; individuals more likely to make changes in birth culture	intrapartum	midwives and obstetricians	Benin	qualitative	75
Graner et al. (2010)	67	explore the perspectives and experiences of midwives, assistant physicians and medical doctors on the content and quality of maternal health care in rural Vietnam.	Contextual conditions influenced both pregnant women's use of maternal health care and health care professionals' performance. The study participants stated that women's uses of maternal health care were influenced by economic constraints and cultural norms that impeded their autonomy in relation to childbearing. Structural constraints within the health care system included inadequate financing of the primary health care, resulting in lack of human resources, professional re-training and adequate equipment.	antenatal ,intrapartum	midwives, physician assistant	Vietnam	qualitative	100
Lester (2003)	70	to determine how these midwives had adjusted to working in the unit and how they perceived their role and function, given that this was a unique MOU. In terms of the location of the unit, the study explored the advantages and disadvantages of being situated in a hospital setting.	Four main categories emerged. These were the independent role, team work, quality of care and personal costs and commitment.	intrapartum	midwives	South Africa	qualitative	75
Lugina et al. (2001)	71	to explore midwives' views in relation to the provision of systematic postpartum care.	The identified core category that integrated and encapsulated all other categories was `becoming a good resource and support person for postpartum woman'. The mediating factors found to have potential for influencing how a midwife can function in order to become a good resource and support person were: a) the structure and approach in maternal and child health services, b) midwives' knowledge, attitude and skills, c) informal sources of knowledge to parents, and d) cultural beliefs and practices.	postpartum	midwives	Tanzania	qualitative	75
Maputle et al. (2010)	72	to explore and describe the experiences of midwives managing women during labour at a tertiary care hospital in the Limpopo Province.	Categories identified were lack of mutual participation and responsibility sharing, dependency and lack of decision-making, lack of information-sharing, empowering autonomy and informed choices opportunities, lack of open communication and listening, non-accommodative midwifery actions, and lack of human and material infrastructure.	intrapartum	midwives	South Africa	qualitative	100

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
Tabatabaie et al. (2012)	75	The objective of this study was to determine the factors that hinder midwives and parturient women from using hospitals when complications occur during home birth in Sistan and Baluchestan province, Iran, where 23% of all deliveries take place in non-hospital settings.	indecisiveness and delay in the use of EmOC by the midwives and mothers studied. Socio-cultural and familial reasons compel some women to choose to give birth at home and to hesitate seeking professional emergency care for delivery complications. Apprehension about being insulted by physicians, the necessity of protecting their professional integrity in front of patients and an inability to persuade their patients lead to an over-insistence by midwives on completing deliveries at the mothers' homes and a reluctance to refer their patients to hospitals. The low quality and expense of EmOC and the mothers' lack of health insurance also contribute to delays in referral	intrapartum	midwives, TBAs	Iran	mixed methods	83
Wrammert et al. (2017)	76	To explore nurse midwives' perceptions of teamwork when caring for newborns in need of resuscitation.	One overarching theme emerged: looking for comprehensive guidelines and shared responsibilities in neonatal resuscitation to avoid personal blame and learn from mistakes. Participants discussed the need for protocols relating to neonatal resuscitation and the importance of shared medical responsibility, and the importance of the presence of a strong and transparent leadership.	resuscitation	nurse-midwives	Malawi	qualitative	100
Agus et al. (2012)	80	To describe the factors related to low visits for antenatal care (ANC) services among pregnant women in Indonesia.	Three-quarter of respondents received ANC more than four times. 59.4% received ANC visits during pregnancy, which was statistically significant compared to multiparous ($p = 0.001$). Women who were encouraged by their family to receive ANC had statistically significant higher traditional belief scores compared to those who encouraged themselves ($p = 0.003$). Preference for TBAs was most strongly affected by traditional beliefs ($p < 0.001$). On the contrary, preference for midwives was negatively correlated with traditional beliefs ($p < 0.001$).	antenatal	midwives, TBAs	Indonesia	survey, Descriptive quant.	100
Nyango et al. (2010)	82	Evaluation of personnel skills and availability of material resources are central to elimination of barriers to delivery of basic Emergency Obstetric Care (EOC) to the community.	Majority 51 (94.4%) of PHCs neither used the Partograph nor performed manual vacuum aspiration. Referral systems and feedback mechanisms were practically non-existent, 38 (70.4%) of facilities were >5km from the nearest referral centre, with 14(29.5%) connected to the national grid. Majority (68.5%) of respondents would want to work abroad. The quality of skilled attendance is low and basic EOC facilities are lacking, a situation further threatened by potential emigration to greener pastures	intrapartum	nurse-midwives	Nigeria	survey, Descriptive quant.	75
Hassan-Bitar et al. (2011)	85	to explore the challenges and barriers faced by Palestinian maternal health-care providers (HCPs) to the provision of quality maternal health-care services through a case study of a Palestinian public referral hospital in the	the quality of care provided for women and infants at this Palestinian public hospital is substandard. The maternal HCPs work within a difficult and resource-constrained environment. Issues include: high workload, poor compensation, humiliation in the workplace, suboptimal super- vision and the absence of professional support and guidance. Midwives	intrapartum	midwives and (nurses doctors)	Palestine	qualitative	75

STUDY	NUMBER	AIMS/OBJECTIVES	FINDINGS	ASPECTS OF CARE	CADRE	COUNTRY	STUDY DESIGN	QUALITY SCORE
		Occupied Palestinian Territory	are perceived to be at the bottom of the health professional hierarchy.					
Lugina et al. (2002)	99	to describe a theoretical framework developed from the views of midwives in relation to provision of systematic postpartum care.	the components of the Basic Social Process of 'Becoming a good resource and support person for the postpartum woman' consisted of 'refection as an entry point into the process. Integration, networking, balancing, and dealing with reality, emerged as categories related to process activities. The category of 'defining abilities' required that midwives become aware of their competency and their limitations in refection and all process activities, so that improvement can be part of 'getting ready', a category that describes what needs to be done at individual and health system level to prepare for systematic postpartum care programmes. The 'caring' category was linked to an outcome of the process 'doing things in the right way', which means providing quality postpartum care. The conditional matrix shows the midwife as an individual affected by several micro and macro conditions.	postpartum	midwives	Tanzania	qualitative	75
Maimbolwa et al. (1997)	103	to describe the routine care of women during normal labour and delivery, and the immediate care of newborn babies in Zambia at different levels of health care.	women were confined to bed during the whole labour and delivery period, food and drinks were withheld, and no gowns were provided. None of the women were allowed to have a companion present during labour. Fetal monitoring was inconsistent and the partograph was either not used or partly lacking. All women were delivered in a lithotomy position and primiparae were fixed in stirrups during the second and third stages of labour. There was general lack of support for early mother/baby contact, prevention of hypothermia in the babies and early initiation of breast feeding.	intrapartum	midwives	Zambia	quantitative descriptive, survey	75
Ith, et al. (2013)	129	to establish SBA reported practices during labour, birth and the immediate postpartum periods and the factors affecting this.	SBA practice not always consistent with evidence-based standard; themes emerged: described patterns of practice, intrapartum skills and labour support, interventions in second stage of labour, management of third stage of labour, cleanliness during birth, newborn care and postnatal care, lack of policy and authority, fear of litigation, workload and lack of human resources, financial incentives and socio-economic influences	intrapartum,postpartum	nurses, midwives, doctors	Cambodia	qualitative	75

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