A study assessing the adaptation of midwives in Upazila Health Complexes in Bangladesh

Study team members

Mahbub Elahi Chowdhury, Scientist and PI

Anadil Alam, Assistant Scientist

Aklima Chowdhury, Sr. Field Research officer

Hosne Ara Beena, Project Research Physician

Md. Mahbubur Rahman, Research Intern

Shafayatul Islam Shiblee, Statistical Officer

Disclaimer

This study was produced with the support of the United States Agency for International Development (USAID) under the terms of USAID's Research for Decision Makers (RDM) Activity cooperative agreement no. AID-388-A-17-00006. Views expressed herein do not necessarily reflect the views of the U.S. Government or USAID. icddr,b is also grateful to the Governments of Bangladesh and Canada for providing unrestricted/institutional support.

Acknowledgments

We acknowledge the contribution of the Directorate General of Nursing and Midwifery for supporting us by providing relevant information and documents for planning the study.

We are thankful to the Directorate General of Health Services (DGHS) for providing all support for the conduction of this study in DGHS facilities.

Table of contents

List of tables

List of figures

List of acronyms

ANC	Antenatal Care
BRAC	Bangladesh Rural Advancement Committee
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DGNM	Directorate General of Nursing and Midwifery
ENC	Essential Newborn Care
FP	Family Planning
ICM	International Confederation of Midwives
IDI	In-depth Interview
IUD	Intrauterine Device
KII	Key Informant Interview
MNH	Maternal and Newborn Health
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MR	Menstrual Regulation
NGO	Non-Governmental Organization
NVD	Normal Vaginal Delivery
Obs/Gyne	Obstetrics and Gynecology
PAC	Post Abortion Care
PNC	Postnatal Care
PPFP	Postpartum Family Planning
PPH	Postpartum Hemorrhage
QoC	Quality of Care
SBM-R	Standards-based Management and Recognition
SOP	Standard Operating Procedure
SRHR	Sexual and Reproductive Health and Right
SSN	Senior Staff Nurse
UHC	Upazila Health Complex
UH&FPO	Upazila Health & Family Planning Officer
USC	Union Sub-Centre
VIA	Visual Inspection with Acetic Acid
WHO	World Health Organization

Executive summary

Background

Considering the acute shortage of trained manpower for quality maternal health care services, in 2010, the Government of Bangladesh took the initiative to develop the midwifery cadre. For the deployment of midwives in the health system, new midwife posts were created at Upazila Health Complexes (UHCs) and Union Sub-Centres, and by July 2023, 2,557 midwives had been posted at these facilities.

As the midwifery program has been in effect for approximately a decade, there is a need to understand the current state of the midwives' adaptation to their workplace, related challenges, and intended changes in maternal and newborn health (MNH) care service provision following the introduction of the midwives in the health system and to suggest suitable strategies to effectively deploy and utilize them for the expected outcomes. Therefore, this study was undertaken to assess midwives' knowledge and confidence regarding maternity care; document the tasks they perform at their workplace; understand the "enabling environment" of service provision of diploma midwives in their workplace; assess the quality of antepartum and intrapartum care they render; and document the barriers and challenges to implementing the midwifery program, including training needs from both policy and program perspectives.

Methodology

This was an observational study using both quantitative and qualitative research methods. The quantitative component encompassed testing the midwives' knowledge via a self-administered questionnaire; documenting the activities performed by the midwives following their standard operating procedure (SOP) through direct observation; assessing the quality of care (QoC) for pregnancy and delivery care through observation using the contextualized Standards-Based Monitoring and Recognition tool; and conducting a semi-structured interview of the midwives to understand their roles, responsibilities, and level of coordination with the other cadres as well as the barriers and challenges to performing their tasks. The qualitative component covered key informant and in-depth interviews of policymakers, program managers, facility heads, and trainers of the training institutes to understand the midwives' adaptation challenges in their workplace in performing their responsibilities; the limitations (if any) in the midwives' training in different types (public and private) of training institutes; and suggestions to overcome the challenges. This study was implemented from January 2022 to March 2023 in 24 UHCs wherein the government had deployed four midwives each. We selected three UHCs from eight districts, i.e., one from each of the eight administrative

divisions of the country. The districts were selected based on the maturity of their midwifery program, and the UHCs within the selected districts were chosen based on whether four midwives had been deployed there for at least the previous year. Of the planned 96 interviews of the midwives from 24 UHCs, we could only interview 80, as the rest were unavailable at their workstations during our three-day stay in each UHC.

Results

In our study, for the knowledge test for MNH care services, the midwives scored 80% or above on antenatal care (ANC), partograph use, and newborn care. However, for delivery, complication management, postpartum hemorrhage management, and family planning (FP) services, they scored 65%–77%. When the midwives were asked about their confidence in managing MNH complications, only 17% (n = 80) said they were confident, and the rest stated that they lacked confidence. The midwives also mentioned that within last three months, they usually needed the help of doctors and nurses for managing complications.

Surprisingly, only 50% of the midwives had heard of their SOP; moreover, only 33% had read it, 10% could show a copy of it, and 5% had had an orientation on it. Moreover, although the majority of the midwives said that they had seen a job responsibility document (85%), had a clear understanding of their job responsibilities (73%), and had had an orientation on their job responsibilities (56%), only 20% could show their job responsibility document. When asked to mention specific tasks in their job responsibilities, 41% of them (n = 80) could mention only fewer than 10 tasks unprompted; when prompted, however, most (95%) could list the majority of the tasks they were supposed to perform. The main reasons identified for this lack of knowledge on their SOP and job responsibilities were as follows: no separate job responsibility training module for the midwives upon their initial training, as this was developed later; SOP was not initially included in the diploma curriculum; the midwives' finding an SOP written in English difficult to understand or being reluctant to read it; and lack of trainers with a midwifery background.

Our qualitative findings revealed that the midwives were not allowed to prescribe common drugs or advise on diagnostics during ANC, normal vaginal delivery (NVD), and postnatal care (PNC) services. They also stated that for referral of pregnant/labor patients with complications, they had to obtain a doctor's consent, which often caused a delay. From the facility observation, we identified that for ANC, 53% of the midwives' assigned tasks were performed by them independently. However, for intrapartum care, only 31% of the tasks were performed independently at in-patient and labor room facilities, and for PNC, 41% of the tasks were performed independently in outdoor settings.

According to the midwives' report, they had good coordination with medical officers, Upazila Health & Family Planning Officers, and nurses but faced challenges in maintaining good coordination with consultants (obstetrics and gynecology [Obs/Gyne]), nursing supervisors, and support staff. The QoC assessment revealed that in 57% of the UHCs, the QoC for ANC provided by the midwives scored below 50%, though for NVD, 71% of the UHCs scored 75% or above. Our qualitative component reported that there were major gaps in supervision and mentoring of the midwives due to lack of supervisors with a midwifery background and no supportive supervision for the midwives due to unavailability of consultants (Obs/Gyne) in most of the UHCs. According to the midwives' report, in the midwifery diploma course, though most of the theoretical modules were completed, there were gaps in the practical modules. In addition, the midwives suggested a need to include new topics in both theoretical and practical modules.

When the midwives and in-depth interview participants were asked about the barriers and challenges in the midwives' adaptation at the facility level, the following major challenges were mentioned: four midwives alone inadequate to ensure 24/7 maternity services; unavailability/irregularity of consultants (Obs/Gyne) at facilities; gaps in the orientation of midwives and their supervisors on SOP; lack of supportive supervision of midwives; no dedicated support staff (ayas, cleaners, security guards, etc.) for labor room and maternity units; lack of facility readiness (infrastructure, equipment, logistics, etc.) to provide MNH care services; and no allocation of hospital quarters/dormitories for midwives. According to the key informant interviews, the key challenges and barriers faced at the central level for the implementation of the midwifery program were insufficient manpower at the Directorate General of Nursing and Midwifery to effectively manage administrative activities and frequent change/transfer of high officials causing delay in administrative activities.

Conclusions and recommendations

According to our study, although the midwives had good knowledge in some areas of MNH care (e.g., ANC, partograph use, and newborn care), they required knowledge improvement regarding delivery care, complication management, and FP services. They also lacked confidence in independently managing MNH complications, for which they were primarily dependent on doctors. They also had major gaps in understanding of their SOP and job responsibilities; further, they faced barriers in performing selected tasks specified in the latter. Over time, the midwives' coordination with other cadres has improved; however, there are still gaps in coordination, and they face challenges in performing their responsibilities in good coordination with consultants (Obs/Gyne), nursing supervisors, and support staff. According to the study findings, there are major gaps in supervision and mentoring of the midwives. It

was revealed that in the majority of UHCs, the QoC was low for ANC but moderate for NVD. In the diploma course, though most of the theoretical modules were completed, there were gaps in practical modules, and the midwives interviewed suggested a need to include new topics in both module types.

Based on the findings, at the program level, the study recommends refresher training for midwives on their job responsibilities and SOP using the Bangla module. An enabling environment should be created for midwives to perform their tasks while maintaining quality by addressing the gaps in dedicated support staff, equipment, and logistics. At the facility level, all vacant Obs/Gyne consultant posts should be filled and their availability ensured for supportive supervision of the midwives. To improve the midwives' confidence level and coordination with other cadres for delivering quality MNH care services, a related guideline should be developed and implemented. We also recommend a thorough assessment of the midwifery diploma course curriculum and its implementation process in both public and private institutes. At the policy level, this study recommends appointing an additional four midwives, for a total of eight midwives, at the UHC level for constant smooth operation of midwifery services, allowing midwives to prescribe medicine, advise on diagnostic tests, and refer patients as per their SOP when necessary. Moreover, additional directors and officers should be provided with a longer duration of stay for efficient operation of administrative activities.

Background

In recent years, Bangladesh has witnessed stagnation in the reduction of maternal mortality [1]. Quality of pregnancy and delivery care remains an issue, and poor quality of care (QoC) results in high pregnancy-related morbidity and mortality rates [2-4]. The country has experimented with various strategies to improve maternal health, including training diploma nurses on midwifery, training traditional birth attendants, and introducing a six-month training course for community-based skilled birth attendants. However, without necessary mentoring, referral ability, and other such support, these initiatives have little impact on maternal health [5-7].

A midwife is recognized as a responsible and accountable professional who works in partnership with women to provide the necessary support, care, and advice during pregnancy, labor, and the postpartum period to conduct births under their own responsibility and care for the newborn. This care includes the promoting normal birth, detecting complications in both mother and child, assessing the necessity of medical care or other appropriate assistance, and carrying out emergency measures. A midwife has important tasks in health counseling and education, not only for the pregnant woman but also within the family and the community. These tasks should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health, and child care. Within the midwifery profession, midwives are trained to work within a professional framework of autonomy, partnership, ethics, and accountability [8].

In 2008, the government endorsed a strategic direction to create 3,000 midwifery posts. The International Confederation of Midwives (ICM) is guiding this new profession. As envisioned in the 'Strategic Directions', a three-year diploma in midwifery was launched in Bangladesh in January 2013. As a result, newly graduate midwives are licensed and registered under the Bangladesh Nursing and Midwifery Council, and midwifery services are overseen by the Directorate General of Nursing and Midwifery. As a response to the government's commitment to introduce a separate cadre of professional midwives, the Bangladesh Midwifery Society was established in 2010 to represent the new profession [9]. Over the years, the government of Bangladesh has steadily, and in a dedicated manner, supported the roles and responsibilities of the new midwifery cadre, with a view to enabling midwives to work to their full capacity within the health system. The approved Midwifery Act and new guidelines and standards are likely to contribute to the improvement of midwifery services and their QoC. Graduate midwives are licensed and registered and guided by a code of ethics.

These new midwives are to play a crucial role in improving the QoC for women in the pregnancy, childbirth, and postpartum stages. With the support of the World Health Organization (WHO) and the United Nations Population Fund, the government took initiatives to deploy 3,000 midwives by 2015. A strategy was developed to ensure quality midwifery education in line with international standards. The Midwifery Association of Bangladesh, which maintains close collaboration with the Royal College of Midwifes, developed the curriculum for a three-year midwifery diploma course with the support of Auckland University. In 2020, the curriculum was approved by the Medical Education and Family Welfare Division of the Ministry of Health and Family Welfare. An initiative has also been taken for the development of faculty for a three-year midwifery diploma course with the support of Dalarna University in Sweden through an online master's program by selecting nurses with a graduate (BSc) or post-graduate (MSc, PhD) degree.

Considering the estimated need for 21,000 trained midwives, the national strategy promoted midwifery education in both the public and private sectors. In January 2013, a three-year midwifery diploma training course (called Graduate Midwives) was started by the Bangladesh Rural Advancement Committee (BRAC) and gradually introduced in 60 public and 105 private institutes engaged with a capacity of creating 5,530 diploma midwives every year. As of July 2023, an estimated 8,000 diploma midwives have graduated; of them, 7,181 have been licensed by passing the certification examination for midwives.

In 2010, though 2,993 midwife posts were created, it was not until 2015 that the first batch of diploma midwives was deployed in selected Upazila Health Complexes (UHCs) and Union Sub-Centres (USCs). As of July 2023, 2,557 graduate midwives have been posted in 411 UHCs (4 midwives per facility) and 903 USCs (1 midwife per facility).

In Bangladesh, as the midwifery program has passed about 10 years, there is a need to understand the intended change in maternal and newborn health (MNH) care service provision following introduction of the midwives in the health system and to suggest suitable strategies to effectively deploy and utilize them for the expected outcomes. In literature, the only study [10] we found, conducted in 329 diploma midwives, deployed within 1-6 months before conduction of the assessment. That study not only missed the opportunity in assessing the responsibilities performed as midwives in their posted facilities but also failed in examining midwifery knowledge and skills objectively. Moreover, no study so far assessed the QoC rendered by the midwives which is a central concern in health systems to improve the health status of pregnant women and their newborn [11].

Therefore, there was a need to undertake a well-designed study to assess midwives' knowledge and confidence in performing their responsibilities as well as the QoC rendered by

the midwives, which will ultimately have implications both in improving the quality of training and developing an effective supporting supervision system for optimal utilization of midwives for improved maternal and neonatal outcomes.

Specific objectives

The specific objectives of this study were as follows:

1. To assess midwives' knowledge and confidence in providing maternity care
2. To document the tasks performed by the midwives at their workplace
3. To understand the "enabling environment" of service provision for diploma midwives in their workplace
4. To assess the quality of antepartum and intrapartum care rendered by the midwives
5. To document the barriers and challenges to implementing the midwifery program, including training needs from both a policy and program perspective

Research design and methods

Study design

This assessment used both quantitative and qualitative research methods (**Figure 1**), including observations of the activities performed by the midwives at their posted facilities. The details of the methodologies utilized to address different objectives are given below.

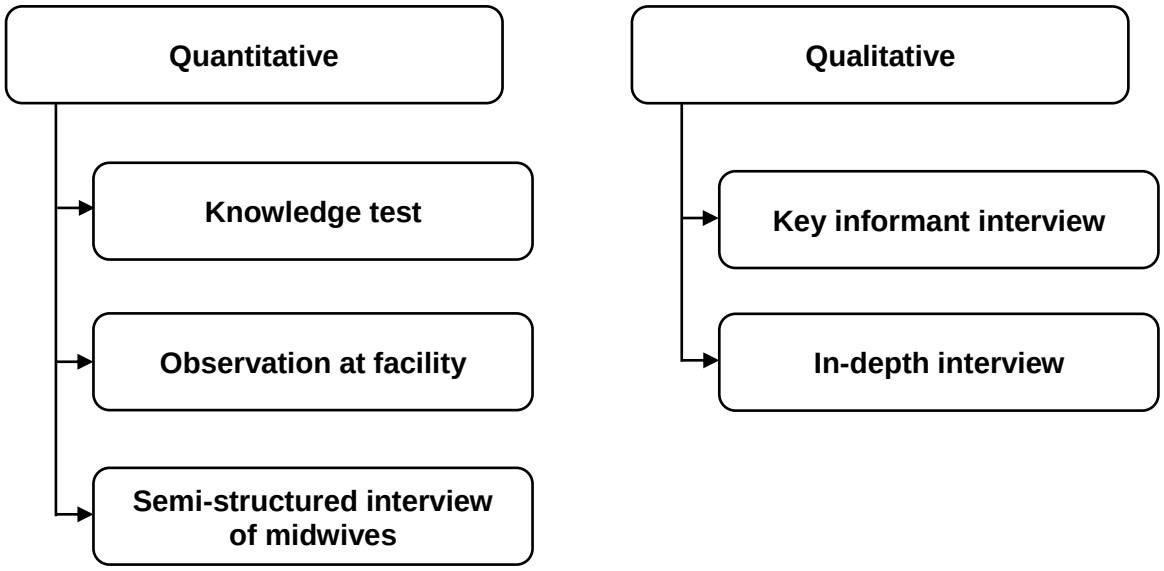

Figure 1: Study design.

Study setting

This study was conducted from January 2022 to March 2023 and covered all eight administrative divisions of the country. In each division, one district was purposively selected through consultation with the district health administration considering the coverage and maturity of the midwifery intervention. From each of the selected districts, three UHCs were purposively selected considering the presence of at least four midwives posted for at least one year in that particular facility (**Figure 2)**; we excluded politically disturbed Hill Districts considering the safety and security of our staff. Although we initially planned to interview 4 midwives from each facility (total: 24 x 4 = 96) midwives, we were only able to interview 80 in the end due to the others' absence from their duty station (leave due to sickness, maternity, training, or transfer) during our visits. The facility observation was conducted at 24 UHCs.

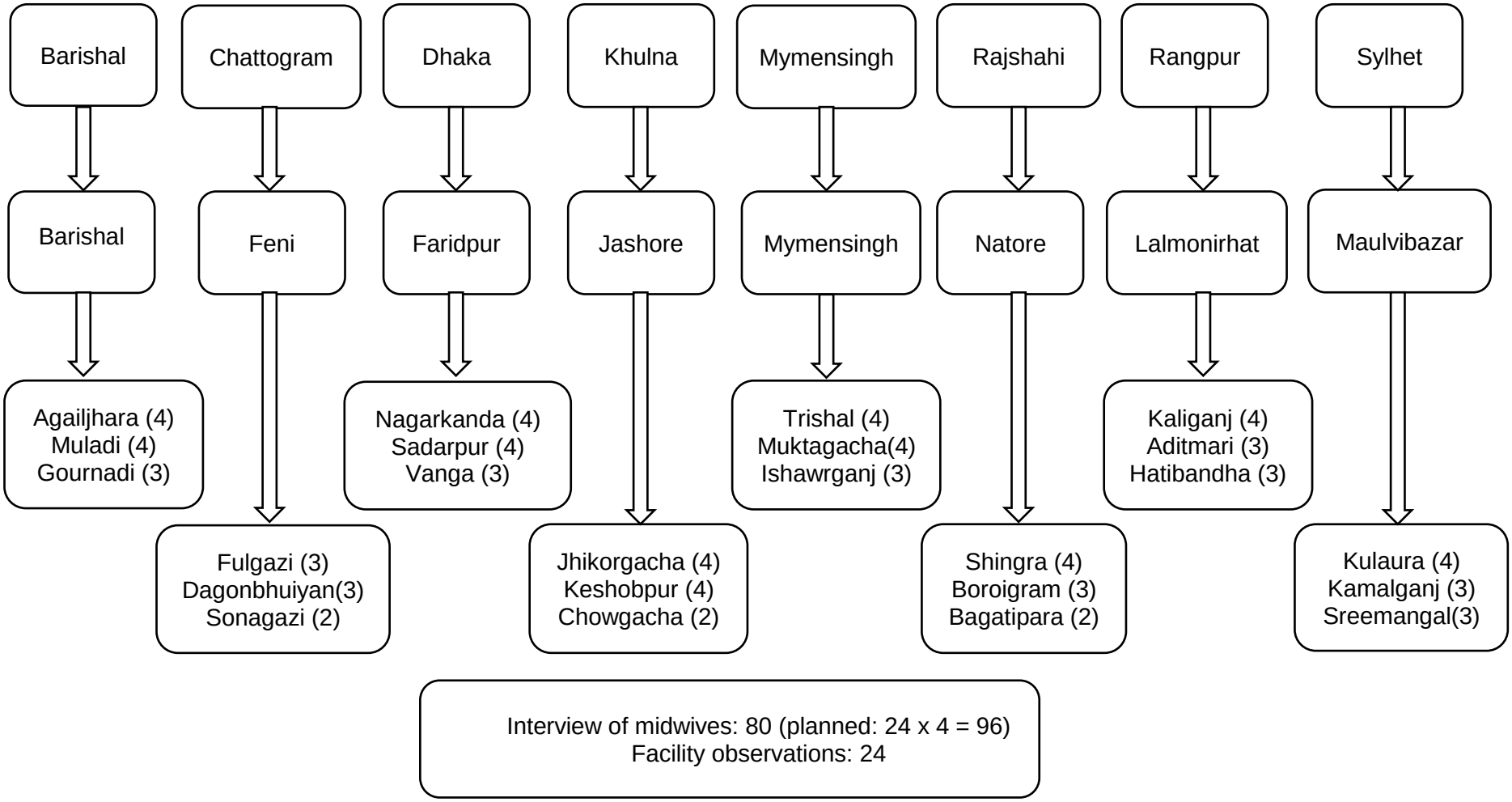

Figure 2: Study sampling design.

Assessing midwives' knowledge and confidence

The knowledge of the 80 midwives selected from the 24 UHCs was assessed via a self-administered questionnaire, taken in front of a study physician. Four sets of knowledge test questionnaires with different ordering of the questions were developed. The instruments used for the knowledge test were developed following ICM/WHO/International Federation of Gynecology and Obstetrics criteria to measure midwives' knowledge using multiple choice questions in relation to

- ✓ prevention, early diagnosis, and appropriate management (stabilization) and referral of obstetric complications, which are directly related to maternal and neonatal mortality and morbidity;
- ✓ management of uncomplicated labor;
- ✓ provision of antenatal and postnatal care services;
- ✓ newborn care and management of newborn complications; and
- ✓ family planning and postnatal counseling.

In addition, to assess the midwives' confidence in complication management, they were tested on two case studies on i) partograph use and ii) postpartum hemorrhage.

Observation of tasks performed by the midwives

A trained female research physician conducted three days of non-participatory observation using a structured instrument to document the midwives' activities following their SOP. For each facility, one single form was filled out; observer recorded whether the specified task was performed by the midwife independently or by other cadres. The observed tasks performed by the midwives were compared with those listed in their job responsibilities.

Observation of quality of care rendered by the midwives at the facility

The technical QoC was assessed using the Standards-based Management and Recognition (SBM-R) tools [12]. The SBM-R tools are multifaceted checklists used to measure the quality of MNH care services, which consists of detailed systemic performance standards for assessment of clinical and support systems, providing an opportunity to identify gaps [13, 14]. To measure the technical QoC, we observed the performance of service providers in completing the activities recommended for ANC and normal vaginal delivery (NVD) using contextualized tools.

In each facility, the QoC data was collected by a team consisting of one medical doctor and one paramedic. During the study, we observed 72 ANC and 51 NVD services from 24 UHCs **(Table 1)**.

Table 1: Areas of assessment components for observing antenatal care and normal vaginal delivery care.

Antenatal Care	**Normal Delivery Care**
• Receiving the pregnant woman • Preparatory activities • History taking • Physical examination • Care based on findings • Advising on birth planning • Scheduling revisits	• Rapid initial assessment • Explanation of services • History taking • Clinical procedures • Assisting woman for safe birth • Immediate postpartum care • Monitoring mother and baby • Disposing of waste

Retrieval of service statistics

Last-one-year service statistics on maternal health care services were collected from the registers by a trained paramedic. Monthly data was collected in a prescribed form by number of antenatal care (ANC), normal delivery, and postnatal care (PNC) services performed, complications managed, and patients referred by the midwives and other service providers.

Semi-structured midwife interviews

The semi-structured midwife interviews were conducted to understand the roles and responsibilities of the midwives and their working relations with allied cadres (e.g., nurses, medical officers, and obstetricians). They were asked about the number of services by type they had provided within the last three months, including details for one complication managed successfully. Information on their working conditions and career progression was also sought. Data was collected on whether they could make critical decisions on their own when needed and allowed to complement and coordinate for MNH care. Suggestions were also sought on ways to overcome related challenges. In the interviews, we explored the gaps in the midwife training program and gathered feedback regarding the curriculum and training process, issues related to the study system, and scope for improvement.

In-depth and key informant interviews of facility heads, program managers, trainers, and policymakers

In our study, 52 in-depth interviews (IDIs) of facility heads, nursing supervisors, consultants (Obs/Gyne), and program managers were conducted to document the barriers and challenges to the implementation of the midwife program from policy and program perspectives. Four IDIs of trainers from the midwife training institutes were also conducted to learn about the adequacy of the course content, challenges in delivering the courses, and suggestions for improving the quality of education. Furthermore, through the qualitative interviews, we ascertained the perception of the policy and program personnel on actions to be taken to integrate the midwifery cadre into the health system to effectively use their knowledge and confidence for MNH care improvement.

Seven key informant interviews (KIIs) were conducted with policymakers and representatives of professional bodies to gather information regarding challenges and opportunities in the deployment and integration of midwives into the national health system as needed, including issues related to professional role clarity, interprofessional working arrangements, and acceptance of trained midwives in their workplace. Through the KIIs, suggestions were also sought on necessary policy and program refinements and actions to be taken for best adaptation and utilization of the midwifery cadre in the national health system.

Recruitment and training of the icddr,b field research team

One female project research physician and one senior field research officer (a female paramedic) were recruited for the data collection. Intensive three-day training was rendered for the research team on the study's technical and ethical aspects. During the training, the questionnaire and consent forms were thoroughly discussed. The study tools were pretested at Ghior UHC, and the technical QoC of ANC and NVD services was pretested at Mohammadpur Fertility Services and Training Centre. After the feedback from the pretesting was incorporated, the study tools were finalized.

Sample size calculation and data analysis

Sample size for assessing level of knowledge and quality of care score

In the existing literature, there was no information on the baseline scores of midwives' knowledge and QoC. Thus, we estimated the sample size for a one-sample comparison of a mean of 81 (i.e., lower bound value of the high score category) from a median value of 50 using the sample size estimation module of the Stata 13 software.

Based on this exercise, we needed to interview a minimum of 47 midwives. However, as we planned to select the sample via the levels of division, district, and upazila, considering 1.6 design effects, we needed a minimum of 75 midwives. Further inflating the sample size 10% for non-response and 15% for absenteeism, a minimum of 100 midwives were planned to be approached for interviews for this study. However, in the end, we interviewed and tested 80 midwives from 24 UHCs who had been posted at least one year prior to this assessment.

Quantitative data analysis

Information on knowledge assessment was transformed into numerical scores. All responses were equally weighted and given a score of 2 for correct or 0 for wrong (total: 100 marks for 50 questions). The percentages of marks were compared for different areas of the knowledge test.

Descriptive analysis was performed to identify the midwives' enabling environment at their workplace, confidence in managing MNH complications, and working relationship with allied cadres.

To assess the QoC during ANC and NVD services, dichotomous scoring was conducted for each observation event (1 = performed, 0 = not performed), and the percentage of scores obtained among the total possible scores was calculated for each domain.

Qualitative data analysis

Qualitative data analysis was performed through an iterative process, involving concurrent data collection and analysis. The narrative data from the interviews was compiled in the form of Microsoft Word files. The thematic analysis was conducted following an iterative process. Transcribed data was analyzed and re-analyzed to find the emerging themes and reviewed carefully to develop codes, which were applied manually. A team approach to the data analysis was employed to minimize individual biases.

Ethical assurance for protection of human rights

Ethical clearance for the research protocol was obtained from the icddr,b ethical review committee, which follows international ethical standards to ensure confidentiality, anonymity, and informed consent. Written informed consent was obtained from all informants before their participation in the study. Data collection was performed maintaining privacy and confidentiality.

Findings

Midwives' knowledge and confidence regarding maternal and newborn health care services

Midwives' knowledge of maternal and newborn health care services

Findings from the knowledge test revealed that overall, the midwives had good knowledge of MNH care service provisions but needed improvements in certain areas. On the knowledge test, they typically scored 80% or above for ANC, partograph use, and newborn care. However, for complication management, delivery, postpartum hemorrhage (PPH) management, and family planning (FP), they typically scored below 80% **(Figure 3)**.

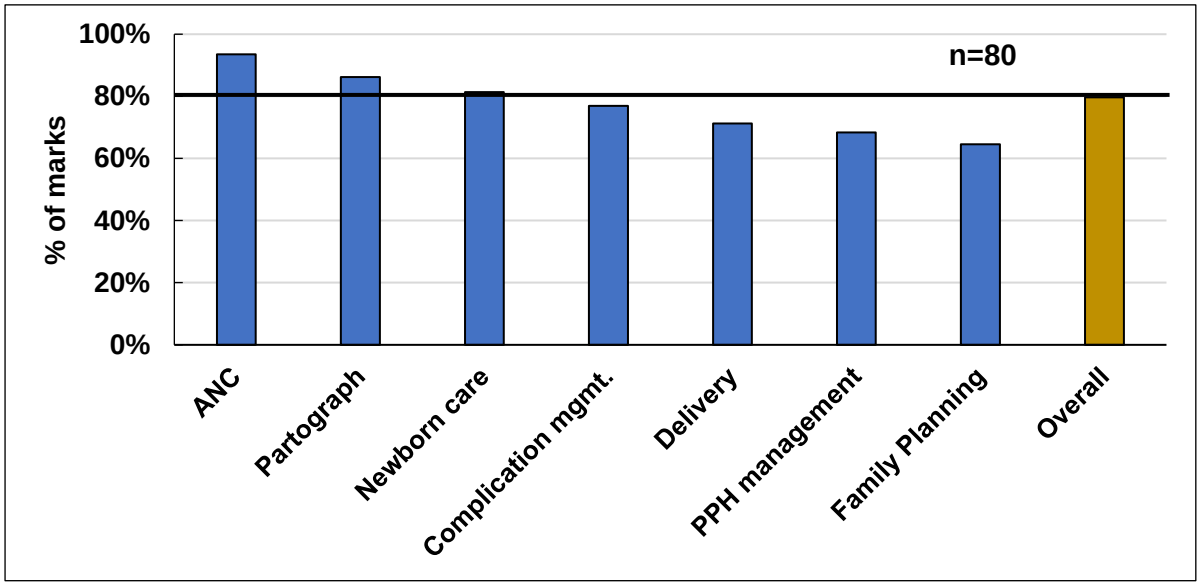

Figure 3: Percentage of marks obtained by midwives in different areas of knowledge test. [ANC= Antenatal care, PPH= Postpartum hemorrhage]

As shown in **Figure 4**, midwives who had graduated from government institutes and BRAC-supported non-governmental organizations (NGO) scored similarly. In our study, only one midwife had graduated from a private institute.

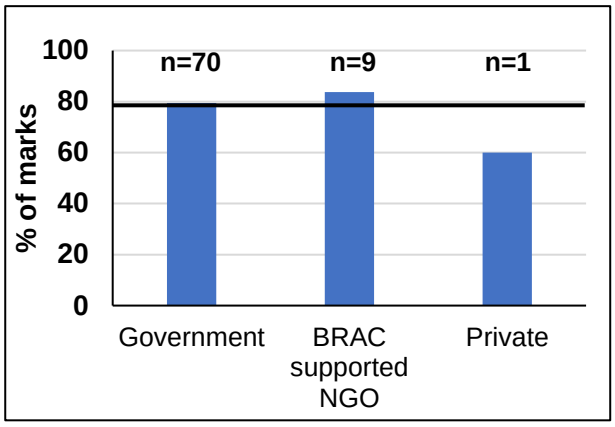

Figure 4: Percentage of marks obtained in knowledge test by type of graduation institute.

Midwives' confidence in managing maternal and newborn health complications

As seen in **Figure 5**, only 17% of the midwives reported that they could manage MNH complications with confidence, while the vast majority (83%) reported that they could manage MNH complications confidently in only some cases.

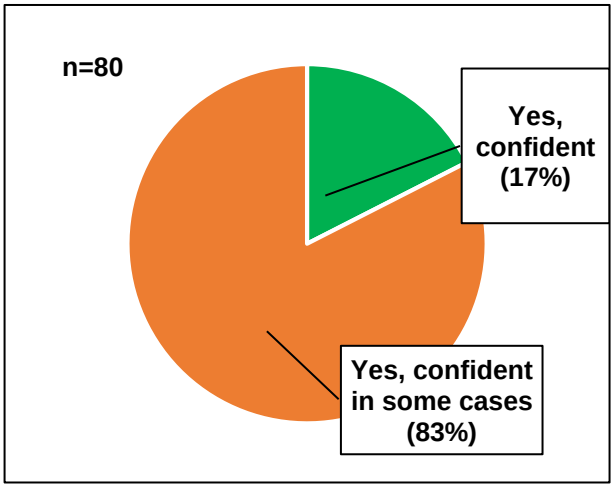

Figure 5: Midwives' confidence in managing maternal and newborn health complications.

In our qualitative interviews, we observed mixed opinions from the nursing supervisors and local-level managers about the competency of the midwives in managing complications. Some mentioned that the midwives provided ANC, normal delivery, and PNC services competently and could manage related complications confidently.

In this regard, one nursing supervisor said,

> *"আমার এখানে মিডওয়াইফরা বেশ দক্ষ, এই যে পেরিনিয়াল টিয়ার আসে, অনেক সময় পিভি ব্লিডিং আসে-এই পিভি ব্লিডিং দেখে অনেক সময় মেডিক্যাল অফিসারও ভয় পেয়ে যায়, তারাও সাহস পায় না যে কিভাবে কি করতে হবে।*

কিন্তু মিডওয়াইফরা ঠিকই বুঝে যে কি করতে হবে, প্রয়োজনে আমার হেলপ নেয় আবার অনেক সময় ওরা একাও ম্যানেজ করে। যেমন- নাইট ডিউটিতে তো আর আমি থাকি না। তখন ওরা একা একা ম্যানেজ করে, হয়তো ডাক্তারের সাহায্য নেয় বা রেফার করা লাগলে নিজেরাই বোঝে এবং ডাক্তারকে জানায়।"

"Here, my midwives are very skilled; if any patient comes with perineal tear or per vaginal (PV) bleeding—sighting this PV bleeding, sometimes, [a] medical officer gets scared. But the midwives know exactly what to do; if necessary, they take my help, and sometimes, they manage alone. For example, I am not available during night shift; then, they manage alone. If necessary, they take [a] doctor's help, or if needed to refer, they understand and inform the doctor."

Another local-level manager (Upazila Health & Family Planning Officer [UH&FPO]) said,

"মিডওয়াইফদের সেবাপ্রদানের দক্ষতাতো ভালোই দেখি- ভালোইতো ডেলিভারী করায়, মা সুস্থ্য, বাচ্চা সুস্থ্য। কই! নবজাতকের বার্থ এসফেকশিয়া তো দেখি না! কই! আমি তো ডাক্তারদের কাছে থেকেও শুনি না যে একটা রোগীকে ডেলিভারীর পরপরই রেফার্ড করতে হয়েছে! আমার কাছেতো মনে হয়, আমার মিডওয়াইফদের আত্মবিশ্বাস ভালোই, ডেলিভারী কেস মিস করে না। খুব কমই তো রেফার্ড হয়।"

"Midwives have good service provision skills. They do delivery well. Now, the mother is healthy, [and] the baby is healthy. Where! I don't see any newborn birth asphyxia. Where! I don't even hear from doctors that a patient had to be referred immediately after delivery. It seems to [me] midwives have good confidence; they don't miss delivery cases. Referral is needed very rarely."

However, not all midwives could manage all complications effectively. They needed the help of nurses and doctors in handling patients suffering from complications such as shock, retained placenta, breech birth, PPH, eclampsia, and abortion.

In this regard, one nursing supervisor said,

"মিডওয়াইফরা নতুন পাশ করে নিয়োগ পাচ্ছে, তো দেখা যাচ্ছে যে ডেলিভারীর জটিলতাগুলো তারা জানে কিন্ত অতো স্কিলড হয়ে আসে নাই। এখন ধরেন যে ডিউটি পিরিয়ডে রিটেন প্লাসেন্টা আসলো, হয়ত পেশেন্টটা শকে আছে, কতখানি শকে আছে বা ম্যানেজমেন্টটা কিভাবে হবে?- এই বিষয়ে তার তেমন কনফিডেন্স নাই।"

"Newly graduated midwives are being recruited, so it appears that they know about the delivery-related complications but are not so skilled. Suppose any patient with retained placenta comes during duty; maybe the patient is in shock. How much shock, or how [will this] be managed? She (midwife) does not have much confidence in this matter."

Types of complications managed and midwives' confidence in managing them

In this study, we asked the midwives about the type of complications they had managed within the last three months and whether they managed the complications confidently or needed help from doctors, nurses, or other midwives. Regarding complication management, we also asked how often they helped other cadres, such as doctors or nurses.

Midwives' confidence in managing antenatal complications

For ANC, only a small proportion of midwives (<20%) mentioned managing complications confidently, while the majority needed help from doctors. A group of them also said that they obtained help from other midwives for complication management **(Figure 6)**.

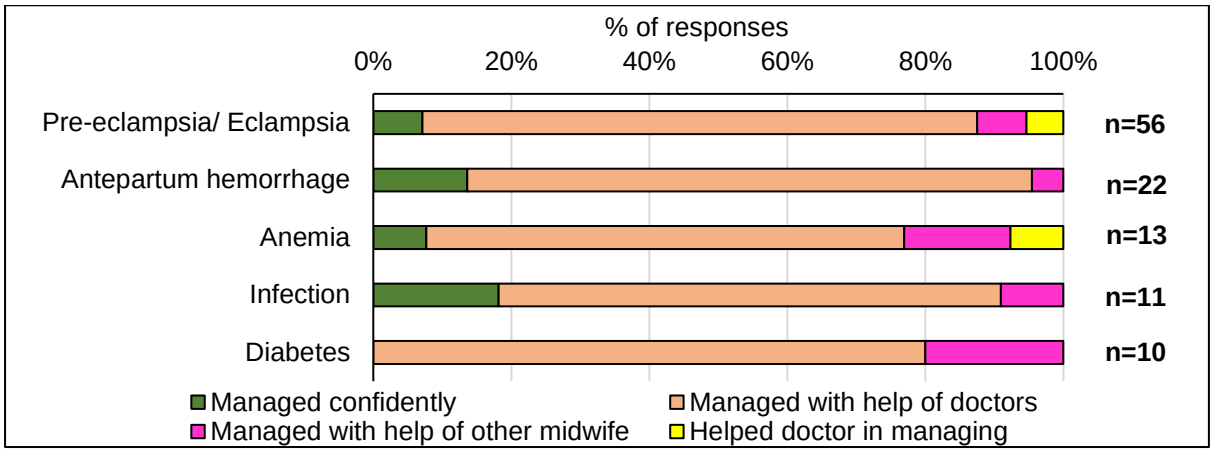

Figure 6: Midwives' confidence in managing antenatal complications.

Midwives' confidence in managing delivery complications

Similarly, we also asked the midwives about the types of complications they had faced during delivery and how confidently they managed them.

The data revealed that the midwives' confidence level in managing delivery complications was low. In six (i.e., obstructed labor, severe bleeding, malpresentation/twin, tearing, pre-eclampsia/eclampsia, and intrauterine device [IUD]/stillbirth) of all nine reported complications, the midwives could manage the complications confidently in only approximately 20% of cases. In a substantial proportion of cases, they needed help from doctors, nurses, or other midwives in managing delivery complications **(Figure 7)**.

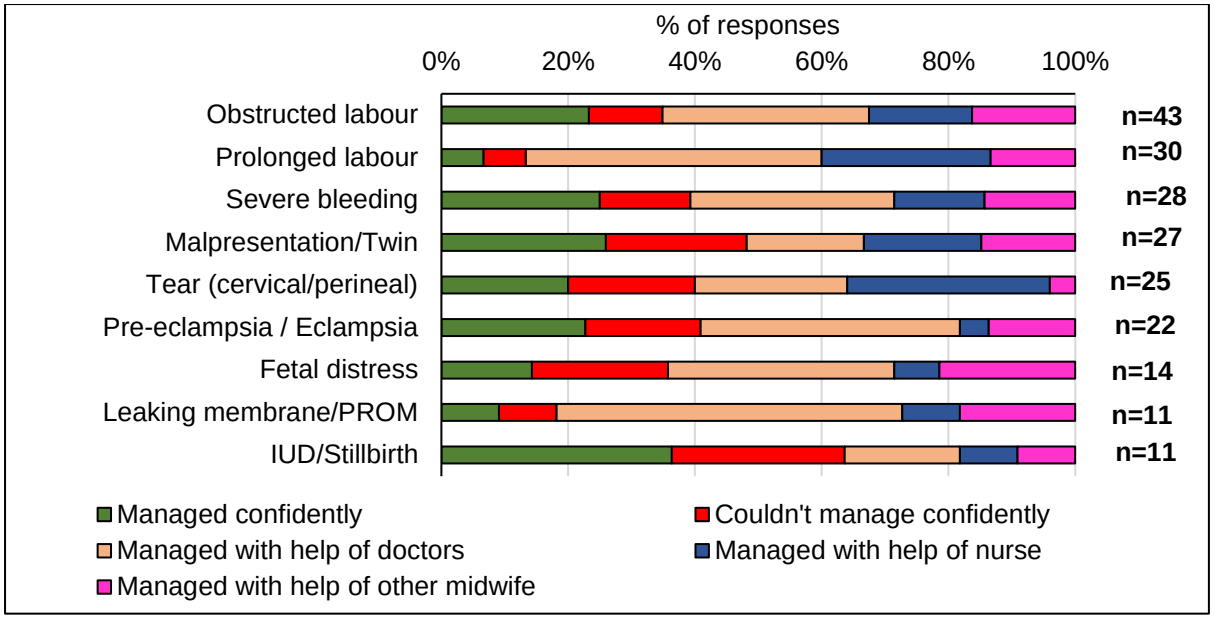

Figure 7: Midwives' confidence in managing delivery complications.

[PROM= Premature rupture of membranes, IUD=Intra-uterine death]

Midwives' confidence in managing postnatal care complications

Regarding managing PNC complications, the majority of the midwives reported that they could manage a tear (cervical or perineal) confidently, but for other complications, such as management of postpartum bleeding, infection, and postpartum eclampsia, they needed the help of doctors, nurses, and other midwives **(Figure 8)**.

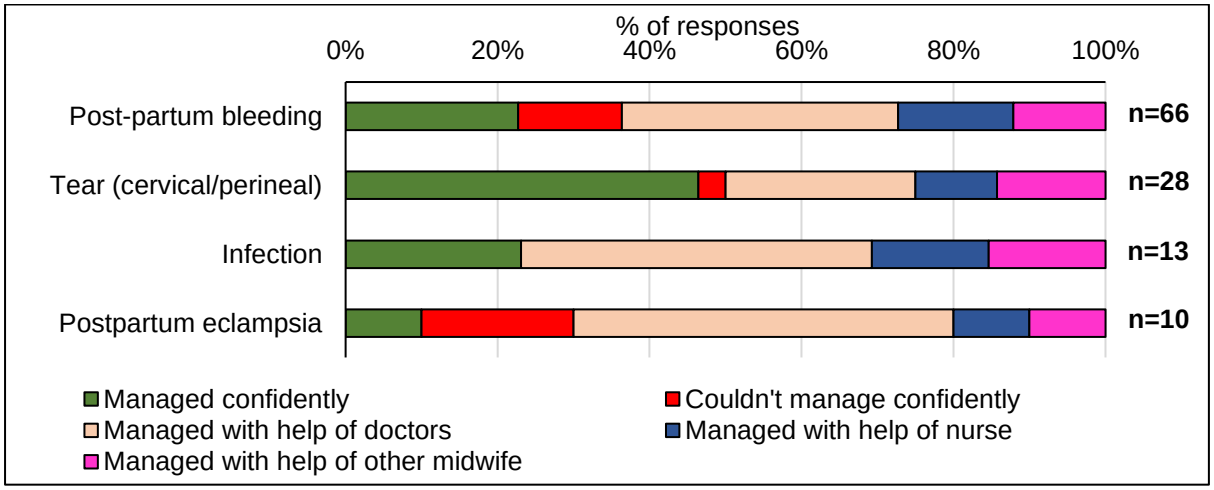

Figure 8: Midwives' confidence in managing postnatal care complications.

Midwives' confidence in managing newborn care complications

For newborn complications, the midwives mainly reported managing fetal distress and low birth weight. Usually, they needed the help of doctors **(Figure 9)**.

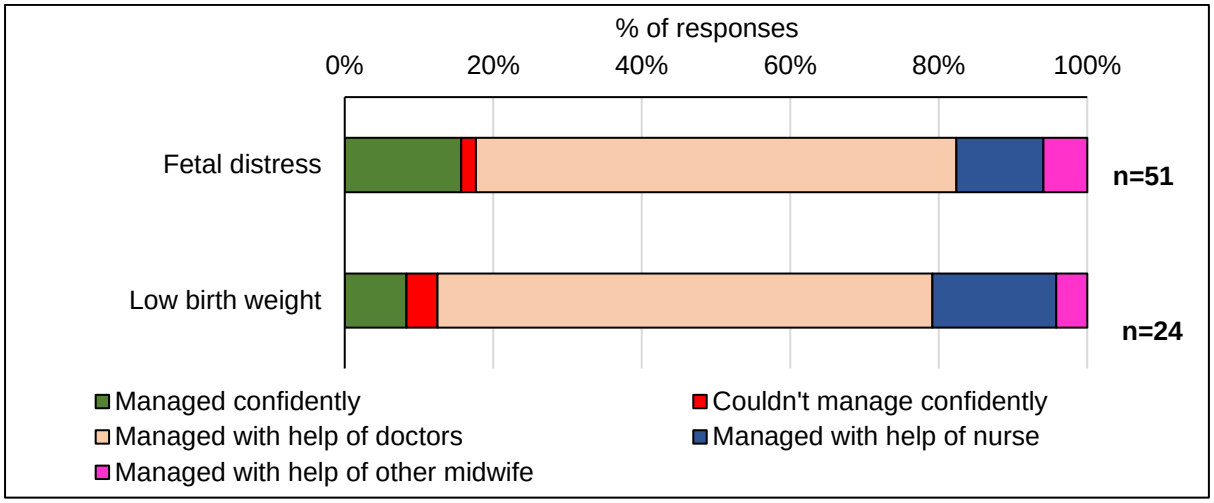

Figure 9: Midwives' confidence in managing newborn care complications.

Reasons for midwives' lack of confidence in complication management

When we asked the midwives about why they lacked confidence in MNH complication management, the majority (73%) said that they did not receive training in this area. The other mentioned reasons were lack of a proper setup and environment in the facility (44%), lack of drugs and instruments/no oxygen (29%), lack of support staff (18%), lack of gynecologist or consultant (18%), and lack of instruments for newborn management (17%) **(Figure 10)**.

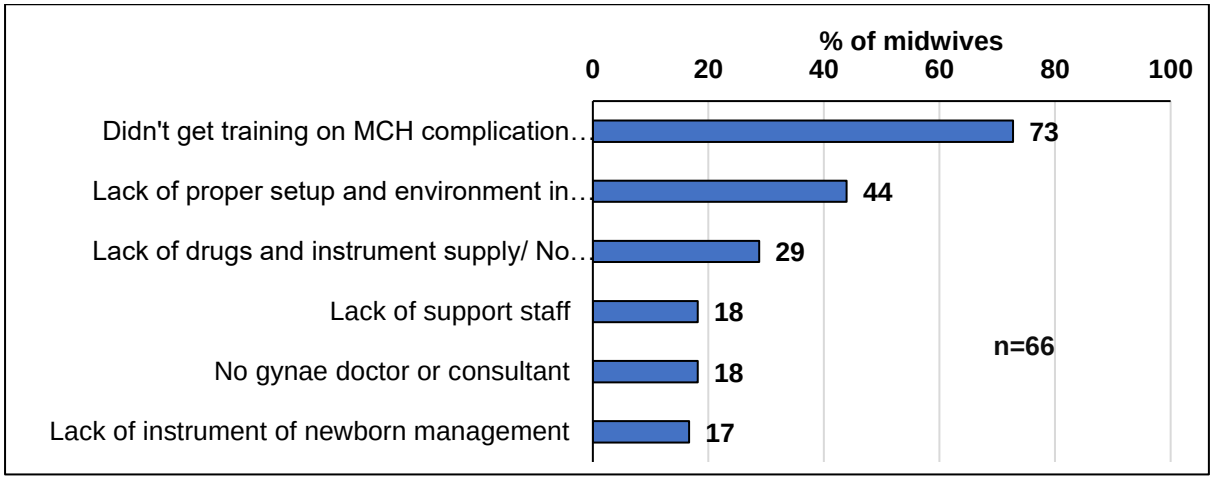

Figure 10: Reasons for midwives' lack of confidence in complication management. [MCH=Maternal and child health]

The above quantitative data was also supported by our qualitative findings. Managers and supervisors of the midwives expressed that midwives start their careers with comparatively lower job skills but continued to gain competency as they provided MNH services. They emphasized the need for continuous training to improve the midwives' competency in complication management.

In this regard, one UH&FPO said,

> *"নতুন মিডওয়াইফরা আসলে অতোটা এক্সপার্ট হয়ে আসে নাই বা যারা পুরানো আছে তাদের তো ট্রেনিংও তেমন হয় নাই, সেই পর্যায়ের দক্ষতা তৈরী হয়নি। ধরেন- ডেলিভারীর সময় ব্রিচ প্রেজেন্টেশান, তারপরে পিপিএইচ ম্যানেজ করা, এইগুলা ওরা এখনও পারে না বা র্কনফিডেন্সটা সবার সমানও না।"*

> *"Actually, the new midwives do not come after being so expert, or the senior midwives are not enough trained; skills have not been developed up to mark. For example, [for] breech presentation during delivery, then managing PPH, they still can't manage, or the confidence level is not equal for everyone."*

Regarding the lack of logistics and instruments in facilities, one midwife said,

> *"একটা বেবীর জন্মের পর বার্থ এসফেকশিয়া হলে, সেটার রিসাসিটেট করতে হবে, কিন্তু পেঙ্গুইন সাকার নাই, সাকার মেশিন নষ্ট, বিভিন্ন সাইজের মাস্ক নাই। তাছাড়া জন্ডিস হলে ফটোথেরাপী মেশিন নাই- একটা নিউবর্ন ম্যানেজ করতে এগুলা রেডি থাকাতো দরকার।"*

> *"If a baby has birth asphyxia, it needs to be resuscitated, but there is no penguin sucker; the sucker machine is broken, and there is no mask of different sizes. Moreover, in cases of neonatal jaundice, there is no phototherapy machine, which needs to be prepared for newborn management."*

Although, in general, the midwives could provide routine ANC, PNC, and uncomplicated delivery care services, for complication management, they were greatly dependent on doctors and nurses. Surprisingly, in 13 out of 24 UHCs in our study, the post of consultant (Obs/Gyne) was absent. Moreover, in facilities with a posted consultant (Obs/Gyne), availability was not ensured. Regarding the unavailability of Obs/Gyne consultants in UHCs, one midwife said,

> *"উনি (গাইনী কনসালটেন্ট) সপ্তাহে শুধু তিনদিন এখানে আসেন, বাকী দিন অন্য উপজেলায় যান। অন্য সময় অনকলেও থাকেন না। আমাদের এখানে সার্বক্ষণিক না থাকায় লেবারের রোগীদের জটিলতা হলে ম্যানেজ করার সময় আমরা একটু চাপে, মানে টেনশনে থাকি।"*

"She (gyne consultant) comes here only three days a week; during other days, she goes to another Upazila. In other instances, she isn't even available on call. As she is not available here at all times, we feel pressurized, which means [we] feel anxious, in managing patients with delivery-related complications."

However, a few managers and supervisors at the Upazila level noted that due to social pressure, midwives sometimes feel nervous and face challenges in rendering services confidently. In this regard, one Upazila-level manager said,

"মিডওয়াইফরা ডেলিভারী করাতে অভ্যস্ত ও অভিজ্ঞ, কোন ডেলিভারী করার আগে তারা হয়তো মনে করছে এটা নাইনটি নাইন পারসেন্ট স্বাভাবিক হবে, কিন্ত ওয়ান পারসেন্ট নেগেটিভও হইতে পারে। কেসটা যদি স্থানীয় প্রভাবশালী কারো হয়, মানে যখন ওদের উপরে পলিটিক্যালি চাপটা আসে- যেমন জানতে চায় যে বাচ্চা হইতে আর কতক্ষণ লাগবে অথবা মা ও বাচ্চার লাইফ গ্যারান্টি চায়, তখন মিডওয়াইফরা নার্ভাস হয়ে যায়, কনফিডেন্সটা হারাইয়া ফেলে।"

"Midwives are accustomed [to] and experienced in delivering; before any delivery, they may think that it will be 99% normal, but 1% can be negative. If the case is of a local authority, [this] means if there is political pressure upon them (midwives), like asking how long it would take to deliver the baby or asking [to] guarantee the lives of the mother and baby, then midwives get nervous, lose confidence."

Ways to increase confidence

When we asked the midwives about how to increase their confidence in managing complications, the majority mentioned the need for training on MNH complication management (78%) and having the necessary setup ready for this management (59%) at facilities. They also discussed the need for 24/7 presence of medical doctors, including Obs/Gyne consultants (13%) and support staff (e.g., ayas, cleaners, and security guards) to effectively perform their responsibilities. **(Figure 11)**.

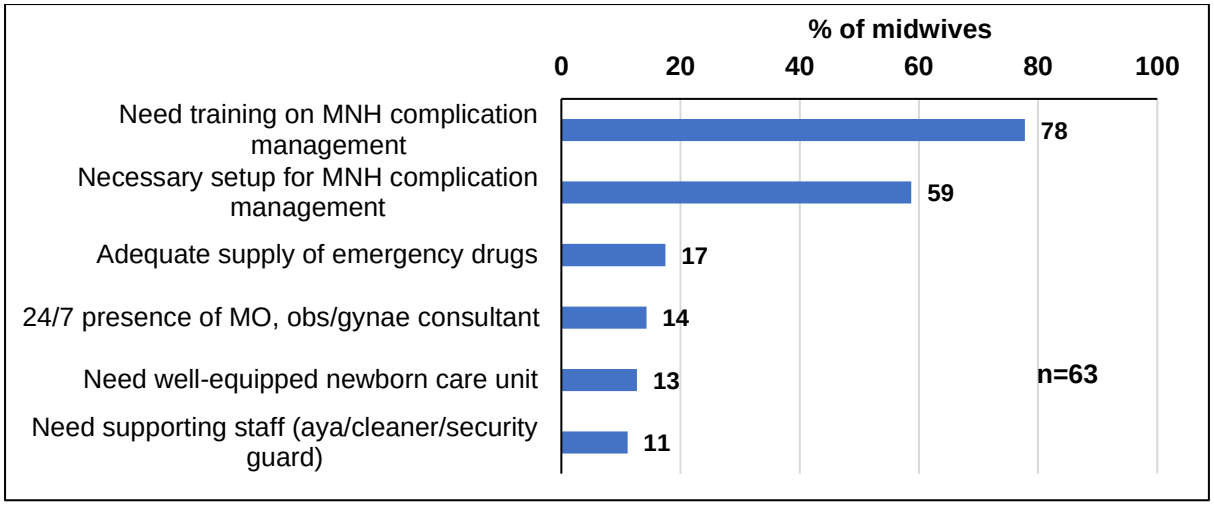

Figure 11: Ways to improve midwives' confidence to manage maternal and newborn health (MNH) care complications.
[MO=medical officer]

The study's qualitative interviews also supported the above findings. Regarding enhancing midwives' competency and confidence, the majority of the participants in their interviews emphasized refresher training for the midwives on MNH complication management. They suggested that midwives should have training on counseling of pregnant and postpartum mothers, postpartum FP, breastfeeding practices, breech or face presentation, eclampsia, PPH management, partograph use, newborn management, and respectful maternity care. Regarding the need for such refresher training, one nursing supervisor said,

> *"প্রতিদিনই স্বাস্থ্যসেবায় নতুন নতুন তথ্য বা টেকনোলজী আসছে। এই নিউ টেকনোলজির সাথে তাল মিলিয়ে চলার জন্য ওদেরকে (মিডওয়াইফদেরকে) রিফ্রেশার ট্রেনিং দিয়ে আপডেট করতে হবে। তারপর যেগুলো জানে, যেমন নরমাল ডেলিভারীর বিভিন্ন স্টেপগুলার উপরও রিফ্রেশার ট্রেনিং দরকার, যেমন- কালকেও দেখেছি একটা বাচ্চাকে ব্রেস্ট ফিডিং ঠিকমতো করাতে পারছেনা, মানে বাচ্চা কাঁদছে, মায়ের বুকে এটাচমেন্ট পজিশন হচ্ছেনা।"*
>
> *"New information or technology is gradually [being introduced] in the health care delivery. To stay up to date with the new technology, they (midwives) should be updated through refresher training. Then, refresher training is also required for those they already know, like different step[s] of normal delivery. For instance, yesterday, I have seen a mother couldn't breastfed her baby properly; [this] means the baby was crying, and the attachment posture of the baby on the mother's chest was not proper."*

Regarding facility readiness, one midwife mentioned,

> *"একটা ডেলিভারী কনফিডেন্টলি করতে মডার্ন ডেলিভারী ওয়ার্ড মানে অবজারভেশন রুম থেকে শুরু করে ওয়েল ইকুইপড লেবার রুম- যেখানে জরুরী ড্রাগস্ সহ ফ্রিজ, দুইটা ডেলিভারী টেবিল, দেয়ালে গাইডলাইনগুলা থাকবে। নিউবর্ন ম্যানেজমেন্ট আর ২৪ ঘন্টা আল্ট্রাসনোগ্রাম, ইমারজেন্সী ব্লাড ট্রান্সফিউশন ইত্যাদির ব্যবস্থা থাকা দরকার।"*
>
> *"To conduct a delivery confidently, there is need of a modern delivery ward means from [an] observation room to [a] well-equipped labor room where there will be a fridge with essential drugs [and] two delivery tables and guidelines will be hanged on [the] wall. Arrangement[s] for newborn management, 24-hour ultrasonogram, emergency blood transfusion, etc. should be in place."*

To enhance the midwives' confidence in complication management, the respondents also mentioned the importance of their close coordination with consultants (Obs/Gyne). In this regard, one central level program manager mentioned,

> *"উপজেলা লেভেলে গাইনী কনসালটেন্ট, ইউএইচএফপিও- উনাদের সাথে মিডওয়াইফদের যদি নিয়মিত ইন্টারেকশন থাকে তখন কিন্তু আত্মবিশ্বাসটাও বাড়তে থাকে। কারণ মায়েদের সেবা নিশ্চিত করতে উনারা মিডওয়াইফের উপযুক্ত পরিবেশটা দিতে চেষ্টা করেন।"*
>
> *"If the midwives [have] regular interaction with gyne consultants [and] UH&FPOs at the Upazila level, then their confidence also increases because they try to provide a suitable environment for midwives to ensure maternity services."*

According to the respondents, it was challenging to ensure delivery care services over three shifts per day with the currently posted four midwives. Particularly during evening and night shifts, it was difficult to manage a delivery with only one midwife. There was a strong suggestion to double the number of midwives in each facility. In this regard, one midwife said,

> *"চারজন মিডওয়াইফ ৩ শিফটের জন্য যথেষ্ট নয়। বিকাল বা নাইটে কোন জটিল রোগী আসলে একা একা কনফিডেন্টলি ম্যানেজ করা টাফ। প্রত্যেক শিফটে দুইজন করে ছয়জন লাগে। এর পরে দুইজনকে তো অফ রাখতে হবে। মোট ৮ জন হলে ম্যাটারনাল সার্ভিসগুলো আরও ভালো করে দেওয়া যাবে।"*
>
> *"Four midwives are insufficient for three shifts. It is very difficult to confidently manage complicated patients alone in afternoon and night shifts. It requires two midwives for each shift, i.e., six in total. Then, two should be kept on off-duty. Therefore, a total of eight midwives is required for more effective provision of maternal services."*

Midwives' understanding of standard operating procedure and job responsibilities

Midwives' knowledge and orientation of standard operating procedure

The midwives' understanding of their SOP and job responsibilities was very low **(Figure 12)**. Only 50% mentioned that they had heard about the SOP, and 33% had read it. Only 1 in 10 could show a copy of the SOP, and only 1 in 20 received an orientation on it.

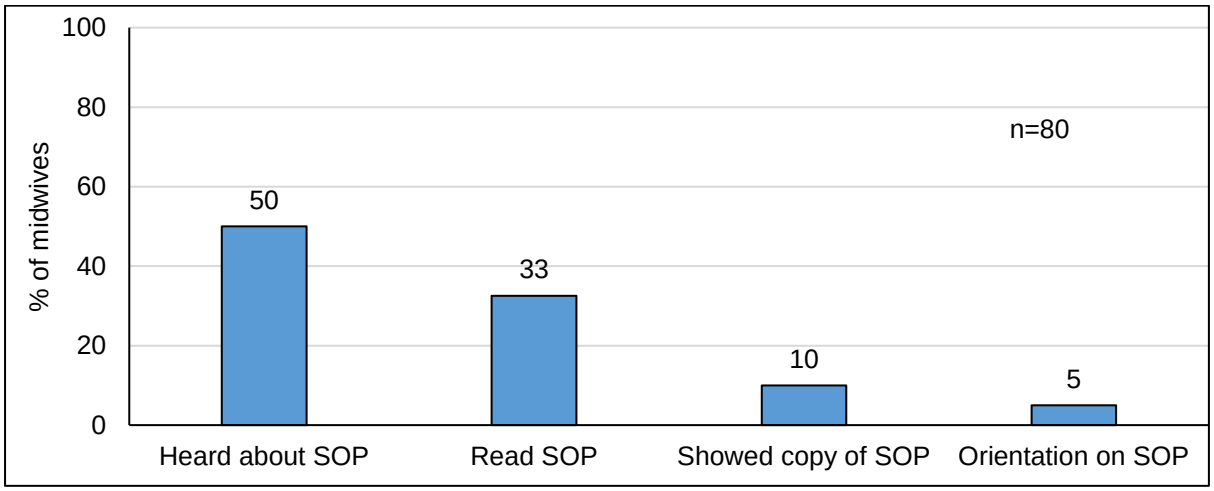

Figure 12: Midwives' knowledge and orientation regarding standard operating procedure (SOP).

Midwives' knowledge and orientation regarding job responsibilities

Regarding the midwives' knowledge and orientation of job responsibilities, the situation was relatively good **(Figure 13)**. In total, 85% of the midwives said that they had seen their job responsibility document, and 73% said that they had a clear understanding of their job responsibilities. Approximately half of them mentioned receiving an orientation on these responsibilities, and only one in five could show their job responsibility document.

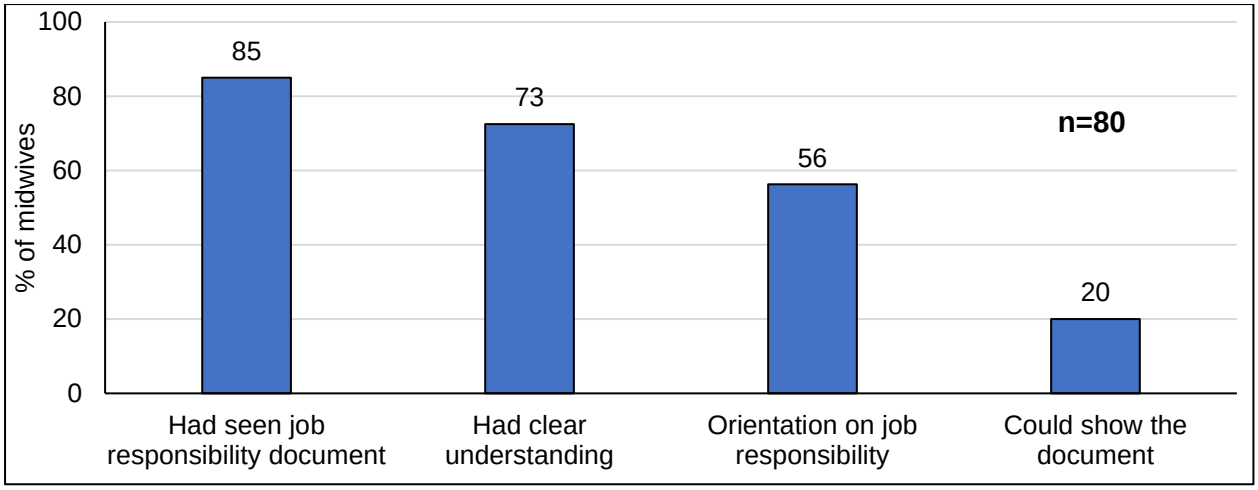

Figure 13: Midwives' knowledge and orientation regarding job responsibilities.

Midwives' reported number of tasks under their job responsibilities

We asked the midwives about the tasks they were supposed to perform according to their job responsibilities document (total of 30 tasks).

These questions were asked first unprompted and then prompted one by one. From the unprompted responses, 41% of the midwives could mention <10 tasks, and 50% could list 10–14 tasks. However, when prompted about specific tasks one by one, almost all of them (95%) could respond about most of the tasks **(Figure 14)**.

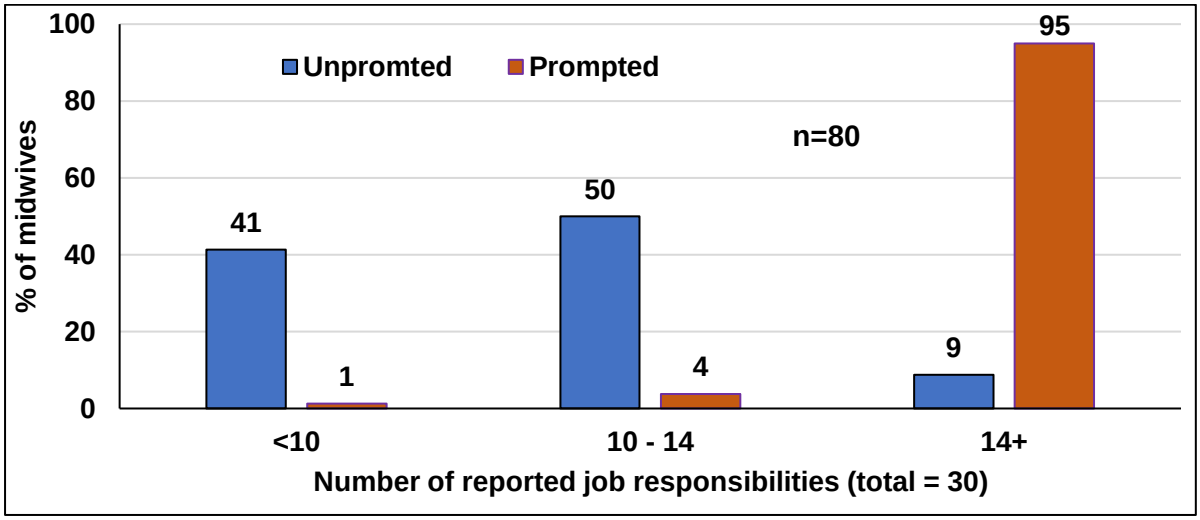

Figure 14: Percentage of midwives' reported number of tasks under their job responsibilities.

Reasons behind midwives' gaps in knowledge on standard operating procedure and job responsibilities

In our qualitative interviews, we asked the midwives, their supervisors, and local-level managers about the reasons behind the gaps in the midwives' knowledge of their SOP and job responsibilities. The majority of the respondents expressed that most of the midwives did not receive any separate orientation on SOP, although some of them commented that midwives obtained some idea about it during job orientation but did not receive any copy of it. Moreover, initially, their SOP was not included in the diploma curriculum. Almost all interviewees agreed on the need for midwives to receive SOP orientation before they entered into the workplace after being recruited. One nursing supervisor said,

> "*যখন ওদের জব হলো তার পর পরই ওদের এসওপির উপরে ট্রেনিংটা করানো উচিৎ ছিলো। কারন তখন থেকেই তো তারা এই কাজের সঙ্গে সম্পৃক্ত, ট্রেনিং না থাকাতে একটু কনফিউজড, জোর গলায় বলতেও পারতেছে না যে কোন সেবাটার পর কোনটা, কতটুকু দিবে- একটু বেধে যাচ্ছে এই আর কি। আসলে জব হওয়ার পর পরই এসওপি-এর উপর ট্রেনিং দরকার ছিলো।*"
>
> *"Immediately after being recruited, they (midwives) should have been oriented on SOP. As they are involved with this task since then, due to lack of orientation, they are [a] bit confused, and they are unable to verbally state which service they would provide or [in] what order they would provide [it]."*

Several midwives also mentioned that they had difficulty understanding the SOP in the English language and that this made them reluctant to read it. Regarding this, one midwife said,

> "*যদিও আমরা ইংলিশেই পড়াশুনা (ডিপ্লোমা ইন মিডওয়াইফারি) করেছি, ইংরেজিতে এসওপি পড়েছি, কিন্তু বারবার পড়তে আগ্রহ আসেনা, অনেক জায়গায় মানেটা বুঝতে অসুবিধাও হয়েছে। এজন্য ইংরেজীর পাশাপাশি বাংলায় থাকলে দরকার হলেই খুলে দেখতাম, পড়তেও ইজি (সহজ) হতো।*"
>
> *"Though we have studied (Diploma in Midwifery) in English, we have read the SOP in English but do not get interest in reading it again and again. In many sections, it is difficult to understand the meaning. That's why if it is in Bengali along with English, we would open it whenever needed; it would be much easier to read then."*

Furthermore, most of the nursing supervisors, Obs/Gyne consultants, and UH&FPOs said that they had no idea about the midwives' SOP, though several mentioned that they knew about the document. However, almost all of them opined that in addition to the midwives, their respective supervisors needed to be trained on the SOP as well. One UH&FPO said,

"অবশ্যই এটার (এসওপি) উপর মিডওয়াইফদের সহ আমাদের সবাই মানে আমরা যারা ওদেরকে নিয়ন্ত্রণ করি যেমন: আমি, নার্সিং সুপারভাইজার, অবস্/গাইনী কনসালট্যান্ট প্লাস আমার যে এমও (মেডিক্যাল অফিসার) এবং আরএমও (রেসিডেন্সিয়াল মেডিক্যাল অফিসার) সবারই ওরিয়েন্টেশন থাকা উচিৎ। কারণ আমাদেরও যদি এসওপির উপরে ট্রেনিং হয় তাহলে আমরা জানতে পারবো- তারা (মিডওয়াইফরা) রোগীদেরকে কতটুকু বা কি কি সেবা দিতে পারবে।"

"Obviously on it (SOP), all of us, including the midwives—I mean those of us who supervise them, i.e., myself, nursing supervisors, Obs/Gyne consultants, including my MOs (medical officers) and RMOs (residential medical officers)—all should have an orientation. Because if we are also oriented on SOP, then we will know how much or what services they (midwives) can provide to the patients."

From our KIIs with high-level managers, we learned that a revised SOP for midwives was in progress. The DGHS, Directorate General of Family Planning (DGFP), midwifery-related professional bodies, and some development partners were involved in this effort. The updated SOP would have additional specific guidelines, for example, when and how midwives could administer certain drugs. Additionally, it would be available in both English and Bangla. They also mentioned that once the revised SOP was approved, it would be printed. Following that, orientation sessions would be held for midwives, their supervisors, and local managers.

In our qualitative interviews, we also asked for the reasons behind the gap in the midwives' orientation on job responsibilities. From the high-level managers, we learned that earlier midwives were oriented on their job responsibilities along with nurses in the same session and that there was no separate training module for the midwives then. They also mentioned that the job responsibility trainers were also mostly from a nursing background. Regarding the gaps in the orientation on job responsibilities, one manager said,

"প্রথমদিকে নার্সদের ওরিয়েন্টেশনের সাথেই কিছু কিছু মিডওয়াইফদেরকে ওরিয়েন্টেশন দেয়া হয়েছিল, তখন মিডওয়াইফদের কোন ট্রেনিং মডিউলও ছিলনা, পরে সেটা তৈরী করা হয়েছে, আর ট্রেনিং যারা দিয়েছে তারা ছিল মূলত: নার্সিং ব্র্যাকগাউন্ডেড।"

"At the beginning, during the orientation of nurses, with them, some midwives also received orientation. However, [a] training module for midwives was not initially available and was prepared later. The individuals who conducted the orientation, they were mainly from [a] nursing background."

Midwives not allowed to perform selected tasks

Our qualitative investigation revealed that the midwives were not allowed to perform several tasks that they were permitted in their SOP. They mentioned that they could not prescribe common drugs during ANC or administer drugs during delivery complications, advise common diagnostics for ANC, normal delivery, and PNC patients, or refer patients with pregnancy or delivery complications. For each of these situations, the midwives needed to attain the permission of the doctor.

Most of the midwives expressed frustration regarding not being able to perform their tasks independently according to their SOP. Regarding the restrictions they faced in prescribing drugs to pregnant women, one midwife said,

> *"মিডওয়াইফ হিসেবে আমরা এএনসি মায়েদের কিছু ঔষধ লিখতে পারি, যেমন: আয়রন, ক্যালসিয়াম, ফলিক এসিড ইত্যাদি। কিন্তু আমরা সেগুলো লিখতে পারিনা, প্রথম দিকে যখন লিখতাম, স্যার (*UH&FPO*) লিখতে না করে দিয়েছেন।"*
>
> *"As midwives, we can prescribe ANC mothers [a] few medicines, like iron, calcium, folic acid, etc. However, now, we are unable to prescribe; at first, when we tried to prescribe, sir (UH&FPO) restricted us."*

Regarding the constraints in prescribing tests for pregnant or labor patients, one midwife said,

> *"আমাদেরকে (মিডওয়াইফদেরকে) ডাক্তাররা এএনসি ও লেবার রোগীদেরকে কোন ইনভেস্টিগেশন লিখতে দেন না, যখন লিখতাম তখন উনারা রাগারাগি করতেন। আসলে উনারা জানেন না যে আমরা এগুলো লিখতে পারবো।"*
>
> *"Doctors do not allow us to prescribe tests for ANC and delivery patients. When we wrote investigation, then doctor got angry. They actually don't know we are actually permitted to prescribe these tests."*

Midwives' engagement in providing antenatal and delivery care services

In our study, during the facility observation, we documented the tasks performed by the midwives according to their SOP. We found that they were mostly engaged in providing antenatal, delivery, and postpartum care.

During our observation of ANC services in an outdoor setting, we recorded that 53% of the assigned tasks were performed by the midwives independently. For 10% of the tasks, the midwives performed the activities jointly with other cadres, and 15% of the tasks were done

by other cadres. The remaining 22% of tasks were not performed at all during our three-day observation period in each facility **(Figure 15)**.

For intrapartum care (NVD), 31% of the tasks in the in-patient and labor room settings were performed independently by the midwives, though for a substantial proportion of the tasks, (40%) other cadres were engaged alongside them **(Figure 15)**.

For PNC, in the outdoor setting, we observed that 41% of the tasks were performed independently by the midwives, whereas 13% of the tasks were performed by other cadres along with midwives. The remaining 56% of the assigned tasks for PNC did not occur during the observation period in the outdoor setting **(Figure 15)**.

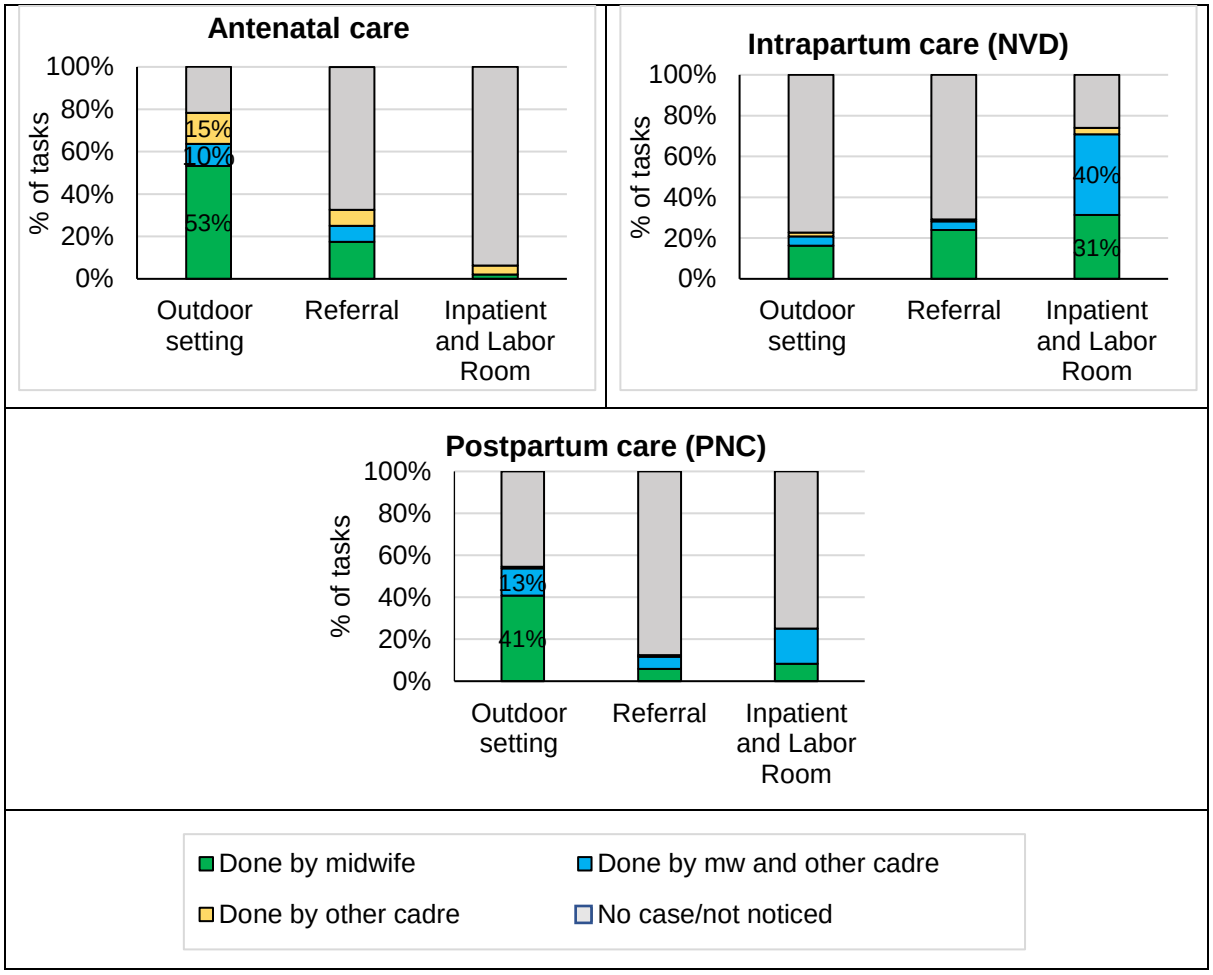

Figure 15: Tasks performed by the midwives in Upazila Health Complexes (n = 24). [PNC=post-natal care, NVD=normal vaginal delivery]

Performances of the Upazila Health Complexes in terms of mother and newborn health care services provided by the midwives

We extracted data on MNH care services from registrars of the study facilities. Of the 24 facilities covered, we separated the service data of midwives from that of other cadres in 20 for ANC services, 23 for NVD services, 12 for PNC services, and 10 for newborn care. The findings revealed that in 75% of UHCs, on average, per month, more than 100 ANC services were provided by the midwives. However, the midwives' participation in normal delivery was low. In 78.2% of the facilities, the midwives performed <=50 normal deliveries per month. For postnatal and newborn care, the midwives' participation was also low. For each of these areas, <=50 services were provided by the midwives per month in the majority of the UHCs. Participation of other cadres in providing these services was also low **(Table 2)**.

Table 2: Percentage of upazila health complexes by average monthly number of maternal and newborn health care services by provider type (midwife and other cadre).

Monthly average number of services	Antenatal Care (n = 20)	Normal Delivery (n = 23)	Postnatal Care (n = 17)	Newborn Care (n = 10)
By midwives				
<=25	-	47.8	23.5	40.0
26–50	-	30.4	41.2	40.0
51–100	25.0	13.0	23.5	10.0
101–300	55.0	8.7	11.8	10.0
300+	20.0	-	-	-
Mean (Range)	290 (70–1435)	40 (6–205)	64 (14–233)	45 (5–200)
By other cadres				
=<25	90.0	87.0	94.1	90.0
26–50	5.0	13.0	5.9	10.0
51–100	5.0	-	-	-
101–300	-	-	-	-
300+	-	-	-	-
Mean (Range)	6 (0–90)	9 (0–29)	3 (0–29)	3 (0–29)

In the qualitative interviews, almost all study participants opined that MNH care had improved as a result of the deployment of midwives. They mentioned that midwives were capable of providing high-quality ANC services, normal delivery services, newborn and PNC services, and prompt patient referrals in emergency circumstances. One Obs/Gyne consultant said,

> *"মিডওয়াইফদের ভুমিকা আসলেই গুরুত্বপুর্ণ, উনারা মায়েদেরকে এসেস্ করেন যে কোনটা নরমাল ডেলিভারী, কোনটা সিজারিয়ান অথবা কোনটা রেফার করতে হবে, আসলে মিডওয়াইফরা এই বিষয়ে দায়িত্বশীল। সো, এইক্ষেত্রে পার্থক্য অবশ্যই আছে আগের এবং পরের সেবা প্রদানের ধরনের সাথে। আগের যেটা দেখতাম- উপজেলা হেলথ কমপ্লেক্সে মায়েরা আসছে, যার নরমাল ডেলিভারী হওয়ার সেটা হয়ত হয়ে যেতো, কিন্তু ভর্তি রেখে এ্যাসেসমেন্ট করা বা রেফার করা বা ফলোআপ করা- এগুলো হয়ত সেভাবে হতো না।"*
>
> *"Actually, the role of midwives is really important. They assess the mothers, whether it would be a normal delivery or a caesarean or she should be referred. In fact, midwives are responsible for this. So, there is definitely a difference in service provision between the former and the latter (before and after deployment of midwives). What I used to see earlier—the mothers who are coming to the Upazila Health Complex, normal delivery might have been done. But assessment or referral or follow-up after being admitted, these might not have been done that way."*

They also informed that prior to the deployment of midwives, nurses provided services to pregnant and postnatal patients along with general patients. Due to their busy schedule, they could not provide normal delivery services with dedication and quality, and they used to refer delivery patents for even minor reasons. However, according to most local-level managers, after the deployment of the midwives, the quality of service and number of MNH service provisions improved significantly. In this regard, one civil surgeon mentioned,

> *"মিডওয়াইফ নিয়োগ দেওয়ার পরে তো এএনসি এবং পিএনসির রেট আগের থেকে অনেক বেড়ে গেছে, তারপর নরমাল ডেলিভারীও আগের চেয়ে বেড়েছে। আর ডেলিভারীগুলো প্রটোকল মেইনটেইন করে- মানে পার্টোগ্রাফ এবং অন্যান্য যে জিনিসগুলো আছে সেগুলো নিশ্চিত করে সেবা প্রদান করা হচ্ছে। এখন মানুষের মধ্যে একটা ধারনা তৈরী হচ্ছে যে এই গোলাপী কালারের ড্রেস পরা মেয়েগুলোই একমাত্র ডেলিভারী করাতে পারে।"*
>
> *"After the appointment of midwives, the rates of ANC and PNC have been increased, [and] rates of normal deliveries also increased. And now deliveries are being conducted maintaining the protocol—i.e., now, service provision is being provided by making use of partographs and other things. Now, there is perception among people that girls wearing pink dresses can only do deliveries."*

Separation of midwives' services from facility registers

During our review of the record, we found that in most of the facilities, for ANC, delivery, and PNC services, the midwives' service data could be separated out from the register. In some facilities, the MNH service data could not be separated out, as the service data of nurses and midwives was recorded together. However, for the rest of the services, such as essential newborn care (ENC), FP services, FP counseling, post abortion care, health education, and sexual and reproductive health and right (SRHR), service provision data was missing in most of the UHCs. For example, for FP services, 46% of the facilities did not record the relevant data in the register **(Figure 16)**.

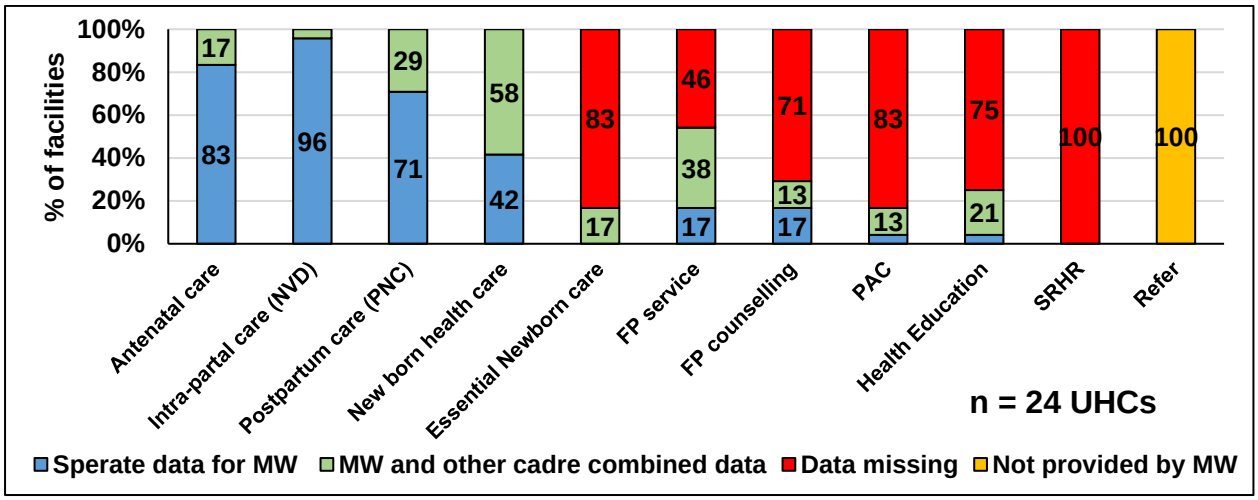

Figure 16: Maternal and newborn health service statistics maintained in the register for services.

Reasons for not recording maternal and newborn health care service statistics separately in the registers

During the MNH service data collection, we observed that the register book was not formatted by service provider type to document service statistics by provider type. In some facilities, only providers' names were recorded beside each record to distinguish the provider type. We also observed there was no section to record select MNH-related services (e.g., SRHR, health education, and FP counseling) in the register book.

Coordination of midwives with other cadres

We analyzed the data on midwives' responses on their level of co-ordination with other cadres at facility level **(Figure 17)**. In our study, midwives have had good coordination with medical officer, UH&FPO and nurses. But for consultant (Obs/Gyne), nursing supervisors and support staff, the level of coordination was low. As only in 11 out of 24 facilities, the consultant (Obs/Gyne) was present, the reported level of co-ordination was assessed using data on 11 facilities only.

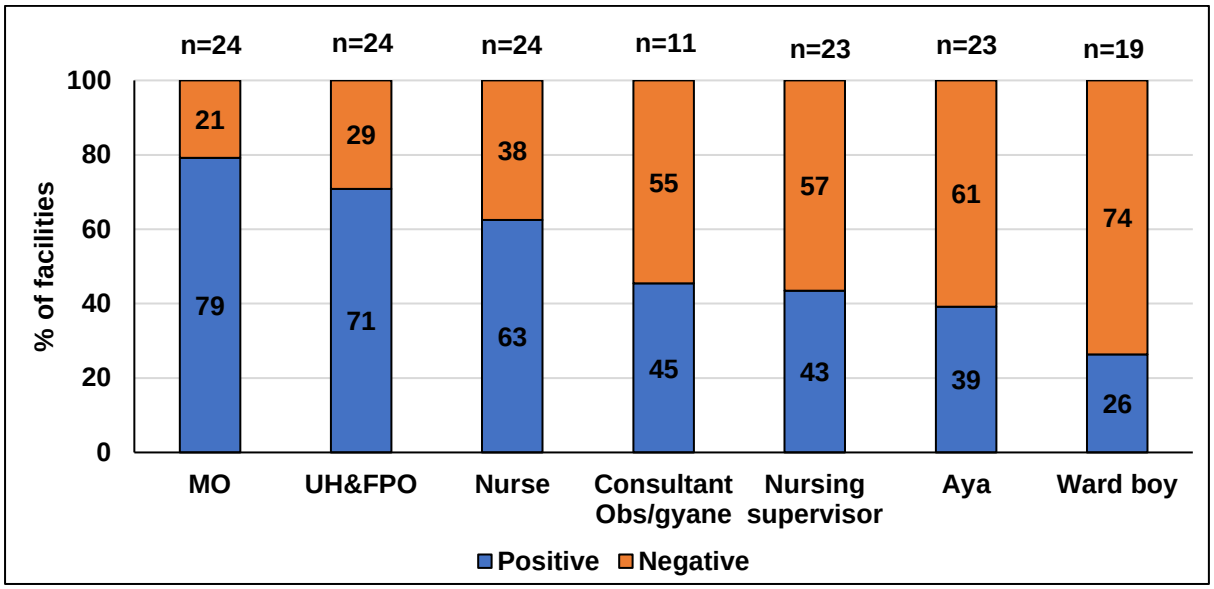

Figure 17: Midwives' responses on coordination and receiving support from other cadres.
[MO=medical officer, UH&FPO=upazila health and family planning officer]

Findings on good coordination of midwives with other cadres

The quantitative data on coordination was also supported by our qualitative findings. In our interviews, participants mentioned the good coordination between midwives and other cadres. According to a group of participants, during the initial stage of the midwifery program, the coordination between midwives, nurses, nursing supervisors, Obs/Gyne consultants, medical officers, support staff, and UH&FPOs was not good; however, it gradually improved.

In semi-structured interviews, midwives mentioned getting inspiration and support from senior providers (e.g., UH&FPOs, medical officers, and consultants) to provide MNH care services and manage related complications.

Regarding Obs/Gyne consultants' support, one midwife said,

> *"ম্যাডামকে (অবস/গাইনী কনসালটেন্ট) ডাকলেই আমাদের লেবার রুমে চলে আসেন, দেখেন- ডেলিভারী কিভাবে করাচ্ছি, আর কি করতে হবে সেটাও বলে দেন। উনার সহায়তায় আমরা আরো ভালো কাজ শিখতে পারছি।"*
>
> *"Whenever we call madam (Obs/Gyne consultant), she comes to our labor room, sees how the delivery is being conducted, and tells us what to do. With her help, we are learning better."*

In the majority of the UHCs, due to the insufficient number of midwives, i.e., four per UHC, to ensure 24/7 MNH care, the supervisors and managers organized a roster involving both midwives and nurses in some facilities. As such, when midwives were on vacation or maternity or general leave, MNH service provision could continue. When there was no patient in the labor ward, midwives also supported nurses in general and female wards. However, thereafter, the Directorate General of Nursing and Midwifery (DGNM) ordered midwives to solely provide MNH services; as a result, most of the supervisors and managers mentioned that nurses were no longer assigned to roster duty with midwives. However, in several UHCs, midwives and nurses were still working together to provide delivery, ANC, and PNC services, and during emergencies, nurses helped midwives to manage labor patients. Concerning nurses' support in the labor ward, a midwife said,

> *"একাধিক লেবারের রোগী আসলে নার্সদের ডাকলেই দৌড়ে আসেন, সহায়তা করেন। বেশিরভাগ সময় তারা বেবি ম্যানেজমেন্ট করেন। তাছাড়া আমাদের কেউ ম্যাটারনিটি লিভ বা সাধারন ছুটিতে গেলে নার্সরা আমাদের রোস্টারে ডিউটি করেন।"*
>
> *"When there is [a] rush of labor patients, if we call nurses, they come and help us. Most of the time, they do newborn management. Moreover, if any of us [are] on maternity leave or general leave, nurses do our roster duty."*

In addition, nurses shared their duty station and dressing room with the midwives, and nursing supervisors helped in arranging accommodation in hospital quarters, as there was no accommodation arrangement for midwives in the UHCs, though the same facility was available for other hospital staff.

Findings on poor coordination of midwives with other cadres

In the qualitative interviews, the midwives, their supervisors, and local-level managers also mentioned the poor coordination of the midwives with the other cadres. According to the local-level managers, at the early stage of deployment of the midwives, there was tension between the midwives and nurses, and it was not easy to integrate the former in the UHCs. However,

over time, the coordination between nurses and midwives improved. In this regard, a local-level manager (UH&FPO) said,

> *"নার্স এবং মিডওয়ায়িফদের মধ্যে কো-অর্ডিনেশানটাকে ষ্টাবলিষ্ট করতে কি পরিমান ফাইট যে করতে হয়েছে, বলার মতো না। ওনারা তো সেকেন্ড ক্লাস অফিসার যার যার জায়গা থেকে ইগো প্রবলেমটা নিয়েই থেকে যায়। এসএসএনরাই (নার্স) আগে থেকে কাজ করে আসছে, তারা পুরানো এবং কেউ কেউ অনেক এক্সপেরিয়েন্সড্। যখন মিডওয়াইফরা আসলো আমার তখন তাদেরকে এনট্রেন্স ও সেট করতে অনেক বেগ পেতে হয়েছে। আজকে এ ওর নামে বিচার দিচ্ছে, কালকে ও এর নামে বিচার দিচ্ছে। এখন ঠিক হয়ে গেছে, তাদের মধ্যে কো-অরডিনেশন ভালো।"*
>
> *"The amount of effort/hardwork that had to done to establish coordination between nurses and midwives was beyond words. They are second-class officers; that's why there were ego problems. SSNs (senior staff nurses) have been with us for a long time; they are senior, and some are very experienced. When the midwives joined, it required intensive efforts to integrate them smoothly. They are constantly complaining against each other. Now, situation[s] have been improved; there exists a good coordination between them."*

During our study, in more than half of the facilities, the post of consultant (Obs/Gyne) was vacant. In facilities where they were available, their coordination with the midwives was reported to be poor. The majority of the midwives mentioned that Obs/Gyne consultants provided services primarily at outdoor and operation theatre (for caesarean delivery) and exhibited reluctance to visit labor wards and respond on call during evening and night shifts in cases of emergencies. Several of the midwives also mentioned that Obs/Gyne consultants relied on senior staff nurses (SSNs) more than midwives in providing MNH services. One midwife said,

> *"বিকালে বা রাতে জটিলতা নিয়ে রোগী আসলে, ম্যাডামকে (অবস/গাইনী কনসালটেন্ট) ফোন দিলে একটু বিরক্তই হন, বলেন যে তাঁকে ফোন না দিয়ে ডিউটি ডাক্তারের সাথে যোগাযোগ করতে। কিন্তু সব ডাক্তাররা তো আর গাইনী বিষয়ে অভিজ্ঞ না, তারা সরাসরি রোগীকে রেফার করতে বলেন।"*
>
> *"When any patient comes in evening or night with complications, if we call madam (Obs/Gyne consultant), she gets annoyed [and] asks to contact duty doctor instead of calling her. But not all doctors are experienced in gynecology; they told [us] to refer the patient directly."*

When we inquired about the reasons behind this poor coordination between midwives and nursing supervisors, our qualitative findings revealed that the latter supervise both the nurses and midwives and are biased toward nurses. Among our study facilities, the nursing supervisor

was a certified midwife in only one UHC. Regarding the poor coordination with nursing supervisors, one midwife said,

> *"উনি (নার্সিং সুপারভাইজার) কোন সমস্যা হলে নার্সদের বেশি সাপোর্ট করেন, তাদেরকে বেশি ভালোবাসেন, নার্সদেরকে বলেন - 'আমার মেয়েরা' আর মিডওয়াইফদেরকে দূরের মনে করেন। মিডওয়াইফদের কোন সমস্যা হলে সাহায্য করেন না।"*
>
> *"She (nursing supervisor) supports nurses more when there is any problem, likes them more, refers [to] the nurses as "my girls," and consider[s] the midwives distant. If midwives have any issue, she does not help."*

Most of the midwives also discussed the severe shortage of ayas and other support staff in the UHCs. Though authorities had attempted to fill the gaps in such staff through outsourcing, due to the shortage of ayas, the midwives faced challenges in conducting normal delivery and baby management during evening and night shifts. At times, in those situations, midwives were compelled to ask the help of the patients' attendants during delivery. One midwife said,

> *"বিকালে বা রাতের শিফটে পুরো হাসপাতালে আয়া মাত্র ১ জন, তখন কোন ডেলিভারী করানোর সময় আয়াকে ডাকলে সে সাথে সাথে আসতে পারে না, জিজ্ঞেস করলে বলে যে সে জেনারেল ওয়ার্ডে ব্যস্ত আছে, কাজ শেষ করে আসতে দেরী হবে, তখন রোগীর সাথে যে মহিলা আসে তার সাহায্য নিয়ে ডেলিভারী করায় ফেলি। লেবার ওয়ার্ডে প্রতি শিফটে একজন করে আয়া খুব দরকার।"*
>
> *"There is only one aya in the entire hospital during evening or night shift, so when we call her during conducting a delivery, she [is] unable to come right away. If we ask, then she says she's busy in the general ward. She will be late after finishing work. Then, we conduct the delivery with the assistance of the woman who accompanied the patient. In [the] labor ward, one midwife per shift is very necessary."*

Quality of care by the midwives

We assessed the quality of ANC and NVD services provided by the midwives. We scored the QoC for ANC and normal delivery services based on related information obtained through our observations using the SBM-R tool.

We were able to assess the QoC score for 21 of the 24 facilities included, but could not do so for three, as no normal delivery took place in those facilities during our three days of observation.

As shown in **Figure 18**, the findings revealed that for ANC, the majority (57%) of the UHCs scored <50% for QoC, whereas for normal delivery, the majority (71%) scored >=75%. Moreover, 6 of the 21 facilities had a QoC score of 80% or higher for normal delivery.

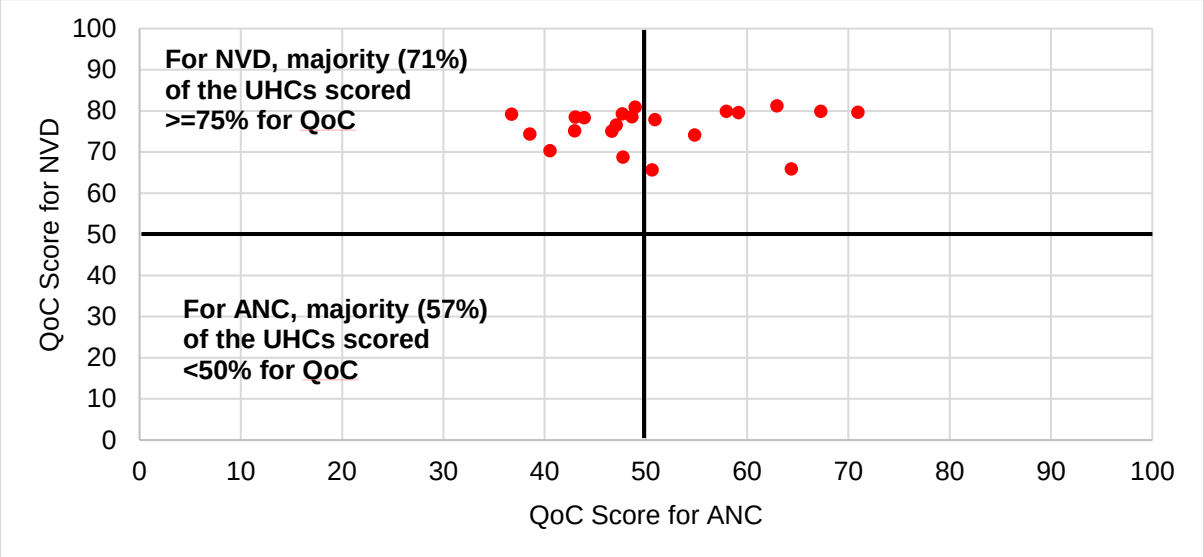

Figure 18: Quality of care (QoC) score for antenatal care (ANC) and normal vaginal delivery (NVD) services by the midwives by Upazila Health Complex (UHC).

An examination of the relationship between the QoC for ANC and coordination of the midwives with the medical officers revealed that good coordination yielded a higher QoC score as compared to poor coordination. This difference was statistically significant at the 10% significance level **(Figure 19)**.

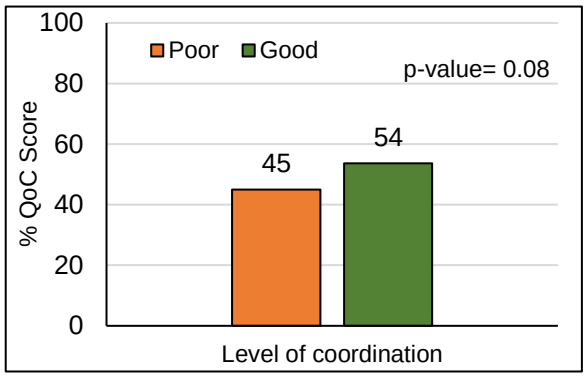

Figure 19: Relationship between quality of care (QoC) score for antenatal care and coordination of midwives with the medical officers.

The overall QoC score for ANC rendered by the midwives was 51.9% (**Table 3**). When we examined this score based on the different components of ANC, the score was below 50% for initial evaluation by the receiver (18.8%), general medical history taking (46.5%), and birth planning (25.4%).

Table 3: Percentage of quality of care score for different components of antenatal care performed by the midwives.

Components of Antenatal Care	**n**	**% of score**
Initial evaluation by the receiver	72	18.8
Cordial and respectful receiving by the provider	72	83.4
Obstetrical history taking	72	71.4
General medical history taking	72	46.5
Physical and obstetric examination	72	57.8
Individualized care based on findings and protocols	72	60.0
Birth planning	72	25.4
Care planning	72	69.2
Total	72	**51.9**

However, the overall QoC score for normal delivery (76.4%) was relatively better than that of ANC. Splitting the QoC scores by different components of normal delivery revealed that only one component, i.e., disposal of used instruments and medical waste, fell below 50%. The majority of the 19 different components of normal delivery yielded a QoC score above 80% **(Table 4)**.

Table 4: Percentage of quality of care score yielded for different components of normal vaginal delivery performed by the midwives.

Components of Normal Vaginal Delivery	N	% of score
Initial assessment	50	56.7
Explanation of services to be provided	50	98.9
Review and filling out of clinical history	50	86.3
Physical examinations between contractions if time allows	50	67.0
Obstetric examination between contractions if time allows	50	89.6
Vaginal examination	50	89.5
Use of partograph and adjustments to the birth plan	50	74.6
Preparation to assist birth	51	79.5
Assisting the woman to have a safe and clean birth	51	79.9
Initial assessment of the newborn and provision of immediate newborn resuscitation if needed	47	99.3
Active management of the third stage of labor	50	73.1
Immediate postpartum care	50	82.1
Disposal of used instruments and medical waste	50	49.7
Monitoring of newborn in immediate postpartum period	51	77.2
Close monitoring of the woman for at least two hours after the birth	51	58.1
Neonatal resuscitation if needed	51	93.8
Encouraging the woman to walk around	24	100.0
Applying no touch, single application of 7.1% chlorhexidine to the newborn's cord stump	34	97.1
Not performing any harmful practices during or after delivery	34	100.0
Total	51	**76.4**

Supervision and mentoring of the midwives

Midwives' supervisors

In our study, in 21 out of the 24 facilities, the nursing supervisor was also the midwife supervisor, and in 3 facilities, the nurse in charge was the supervisor. Only when the post of nursing supervisor was vacant was the nurse in charge the supervisor **(Figure 20)**.

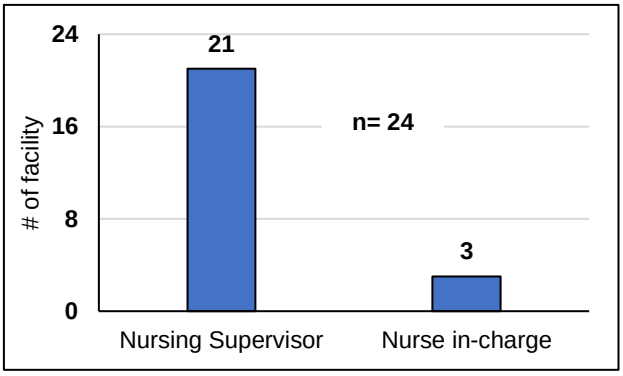

Figure 20: Midwives' supervisors.

Gaps in supervision and mentoring of midwives

The nurse and midwife supervisors were the same, i.e., the nursing supervisor or nurse in charge. The nursing supervisor was a certified midwife in only one UHC (Muktagacha). However, in some UHCs, medical officers or Obs/Gyne consultants supervised the midwives on clinical aspects, and nursing supervisors prepared rosters, granted days off and leave, regulated training, and managed logistics and equipment supply etc. Regarding the gaps in supervision, one nursing supervisor said,

> *"আমাদের যে নার্সিং সুপারভাইজাররা আছে তাঁদের মিডওয়াইফারি বিষয়ে আপডেট নলেজ নাই, অনেকে আবার রিটায়ার হবেন, বয়স্ক। তারা নার্স ও মিডওয়াইফ দুই গ্রুপেরই সুপারভাইজার এবং ইনডোরের সবকাজে ব্যস্ত থাকেন।"*

> *"Our nursing supervisors do not have updated knowledge of midwifery; many of them are elderly, going to retired. They are supervisors of both nurses and midwives and are busy at indoor."*

Our qualitative findings also identified that there was no structured supportive supervision system in most of the facilities. Moreover, in the majority of the UHCs, consultants (Obs/Gyne) were either not regularly available to supervise MNH services performed by midwives or the post was vacant. Regarding the gaps in clinical supervision, one UH&FPO said,

> *"তাদের (মিডওয়াইফদের) ক্লিনিক্যাল কাজগুলি মনিটরিং সুপারভিশনের জন্য এখানে গাইনী কনসালট্যান্ট আছে, কিন্তু কাঙ্খিত লেভেলে হচ্ছে না, সম্ভবও না। কারণ কনসালট্যান্টরা অনেক ব্যস্ত থাকেন, এখানে সপ্তাহে ৩ দিন বসেন।"*

"Gyne consultants are there to monitor and supervise the midwives' work, but it is not at [the] required level. In fact, it is also impossible because the consultants are very busy and works here three days in a week."

Moreover, in some UHCs where the nursing supervisor was male, clinical services were not properly supervised. Considering the cultural context of Bangladesh, there are limitations regarding a man performing clinical supervision in the labor room/ward.

Gaps in theoretical and practical modules of the midwifery diploma course

Completion of modules of the midwifery diploma course

Regarding completion of the modules in the diploma course, for both government and BRAC-supported NGO institutes, about 90% of the midwives reported that the modules of the theoretical course were completed in due time. However, for the practical course, about 80% of the midwives who graduated from government institutes, as compared to 100% who graduated from BRAC-supported NGOs, said that not all of the modules were completed during their diploma course **(Figure 21)**.

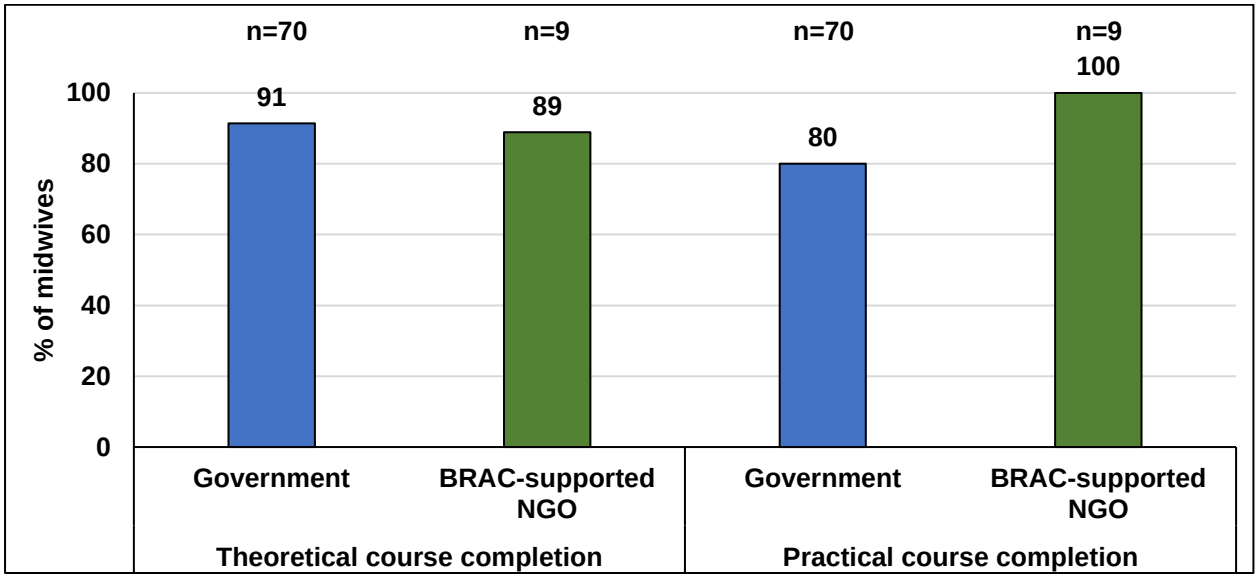

Figure 21: Midwives' responses on completing the modules in their diploma course by institution type.

[BRAC= Bangladesh Rural Advancement Committee, NGO= Non-governmental organization]

Reasons for not completing the modules

When we asked the midwives why they did not complete the theoretical modules, the key responses included a shortage of teachers, teachers being on leave, or irregular presence of teachers in the classes. Other reported reasons were modules not being completed/developed for the first batch of students. They also mentioned that the lectures were mostly note based and that no reference book was suggested (17%) **(Figure 22)**.

Regarding the reasons for not completing the practical modules, the primary responses included lack of opportunity to practice normal delivery (67%), lack of opportunity to practice different MNH care services (e.g., ANC, PNC, postpartum FP [PPFP], menstrual regulation [MR], and post abortion care [PAC]) (33%), practical classes not having been organized for the first batch of students (13%), and insufficient availability of dummies or models/instruments in the practical lab (13%) **(Figure 22)**.

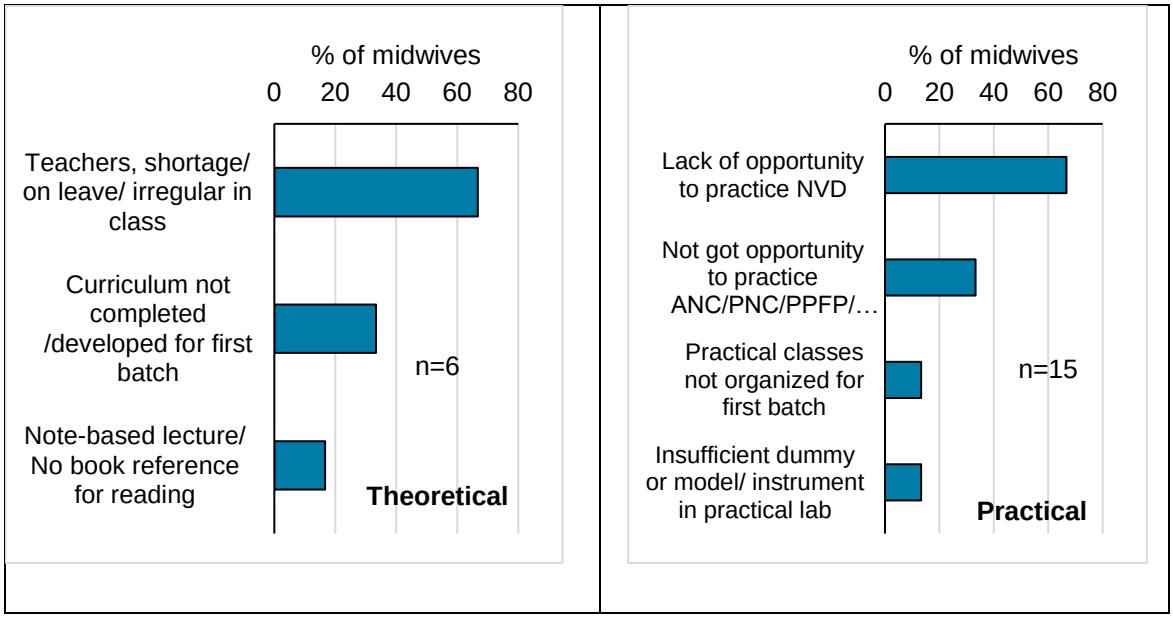

Figure 22: Midwives' responses on reasons for not completing the modules.

[NVD=normal vaginal delivery, ANC= antenatal care, PNC=postnatal care, PPFP=postpartum family planning]

The quantitative data was also supported by our qualitative findings. Concerning the reasons for not completing the theoretical course, in the semi-structured interviews, the midwives mentioned the lack of teachers and irregularity of teachers attending the classes. In this regard, one midwife said,

"অনেক সময় আমরা ক্লাসে বসে থাকতাম কিন্তু টিচার সময়মতো আসতেন না.....আবার মাঝে মাঝে শুনতাম টিচার আসবেন না কারণ উনি ট্রেনিং-এ দেশের বাইরে আছেন।"

"Frequently, we used to sit in the class, but the teacher didn't come on time … and sometimes, we heard that the teacher won't come because he is abroad for receiving training."

One of our IDI participants from a government midwifery institute also discussed the shortage of teachers in their institute, stating,

"আমাদের ইন্সটিটিউটে মিডওয়াইফারি কোর্সের ফ্যাকাল্টির সংখ্যা প্রথম ভালোই ছিল মানে সাতজন ছিল, লাস্ট ইয়ারে তাদের মধ্যে চারজন প্রমোশন হলো আর তারা বিভিন্ন হসপিটালে ও জেলাতে সিনিয়র পজিশনে চলে গেলেন আর আমরা মাত্র তিনজন আছি, এখনও কোন শিক্ষক আমাদের এখানে দেয়া হয়নি। ঐ সাতজনে যা যা ক্লাস নিতাম, তিনজন মিলে সেই একই কাজ করছি। সেই সকাল সাড়ে আটটায় ক্লাসে ঢুকেছি, দুইটা ক্লাস পর পর নিয়ে এখন একটু নাস্তা খাচ্ছি, কিন্তু আরেকটা ক্লাসে স্টুডেন্টরা আমার জন্য বসে আছে, এভাবে কি পড়ানোর কোন কোয়ালিটি থাকে?"

"Initially, our institute had a satisfactory number of faculty members, means seven faculty, for the midwifery course. However, last year, four of them were promoted and transferred to different hospitals and districts in senior positions. Now, we are only three instructors, and no new teachers have been assigned to us since. The teaching load of seven faculty members now falls on just the three of us. I started taking class since this morning at 8:30; after taking two consecutive classes, now, I am having a quick breakfast while students of another class are waiting for me. Under these conditions, is it even possible to maintain [the] quality of teaching?"

Similarly, our qualitative interviews also identified faculty retention as a major challenge for private institutes due to a high tendency for teachers to switch to government jobs.

A key reason for the midwives not completing the practical modules was identified as a lack of practice opportunities. One midwife said,

"লেবার রুমে কোনকিছু করার বা দেখারও সুযোগ পাই নাই, যেই সিস্টার ছিলো রোগী ধরতে দিতো না, বলতো তোমরাতো অনেক ছোট। অনেক সময় ইন্টার্ন ডাক্তাররাও সেখানে থাকতো, তখনতো আরো চান্স নাই।"

"I didn't get a chance to see or do anything in the labor room. [The] sister who was there didn't let me touch [the] patient; she said, "You are too young." Sometimes, intern doctors were also there; then, there was no more chance."

Supporting this, one central-level program manager mentioned,

> *"প্রাইভেট সেক্টর থেকে যে সকল স্টুডেন্ট সরকারি হাসপাতালে প্র্যাকটিক্যাল করতে যায়, সেখানকার প্রোভাইডাররা প্রাইভেট টিচার ও স্টুডেন্টদেরকে সেভাবে এলাউ করতে চায়না। আবার ইন্টার্ন ডাক্তাররাও প্র্যাকটিস করতে যায়, সেখানে তো মিডওয়াইফদের আরো সুযোগ কম। কিন্তু নিজ নিজ কারিকুলাম অনুযায়ী সবারই প্র্যাক্টিসের সুযোগ থাকা দরকার।"*
>
> *"Students from the private sector who go for practical in government hospitals, the providers there do not want to allow private teachers and students to do so. Since intern doctors also go to practice, there are less opportunities for midwives. However, everyone needs to have opportunities for practice according to their curriculum."*

However, the midwives from BRAC-supported institutes had their six-month internship at BRAC maternity centers. They received training in both community and maternity centers.

Several midwives mentioned the lack of dummies or instruments in their practical classes as a reason for not completing the practical modules. One midwife said,

> *"ক্লাসের ল্যাবে মডেল বা ডামি তেমন কিছু ছিলনা, ইন্সট্রুমেন্ট বা যন্ত্রপাতির সেট কম থাকায় আমরা সব স্টুডেন্ট একসাথে সেগুলো দেখার সুযোগ পেতাম না, এগুলার নামও জানতাম না।"*
>
> *"There were no models or dummies in the lab. Since there were only a few sets of tools or equipment, students had less opportunity to see them in one sitting, and we were even unaware of their names."*

Suggestions regarding adding new topics to the diploma course

A substantial proportion of midwives opined that there was a need to add additional topics to both the theoretical and practical courses of the midwifery diploma training **(Figure 23)**.

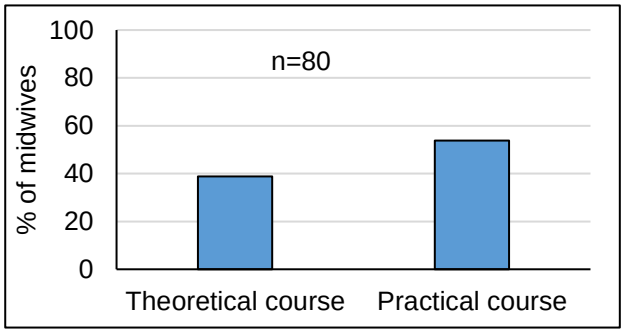

Figure 23: Midwives' suggestions on additional topics for the diploma training.

Suggestions on specific topics to include in the diploma training

The primary suggestions regarding additional theoretical topics were as follows: FP/PPFP with counseling; adolescent/pre-pregnancy care; MR/PAC; newborn care/ENC/pediatric care/neonatal intensive care unit (29%); documentation of MNH data/ register book/computer-based record keeping (26%); and visual inspection with acetic acid (VIA) (23%). For the practical module, the most suggested additional topics were as follows: PPH/retained placenta (42%); PPFP/FP/IUD (30%); VIA (28%); newborn resuscitation/help baby breath (26%); and eclampsia/preeclampsia/postpartum eclampsia (21%) **(Figure 24)**.

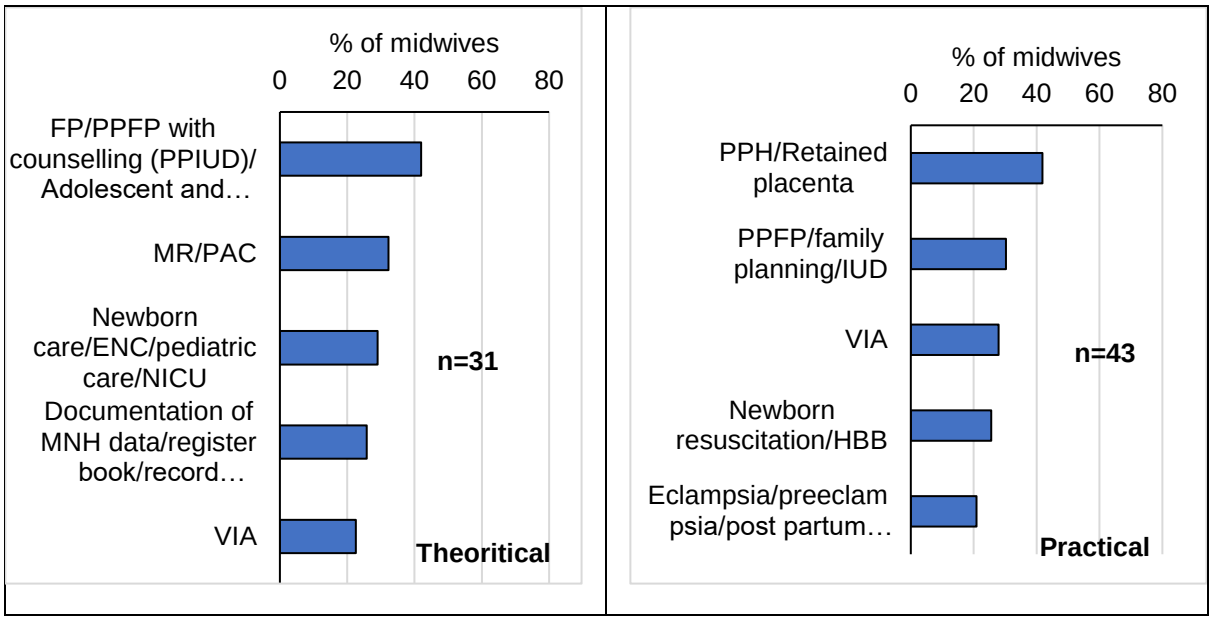

Figure 24: Midwives' suggestions on including specific topics to the diploma course.

The findings from the quantitative interviews also complemented our findings from the qualitative interviews. In support of adding FP topics to the diploma course, one midwife mentioned,

> *"কোর্সে পরিবার পরিকল্পনা বিষয়ে বিস্তারিত আসলে জানতে পারি নাই, কাজ করতে এসে বুঝতে পারছি যে আমাদের পিপিএফপি বিষয়ে কাউন্সেলিং শিখাটা খুব দরকার ছিল, বিশেষ করে পিপি-আইইউডি বিষয়ে ভালোভাবে শিখলে মিডওয়াইফদের কাজে লাগবে।"*
>
> *"In the course, we didn't really learn the specifics of family planning, but when we started working, we realized that we needed to learn counseling about PPFP. Especially learning about post-partum intrauterine device (PP-IUD) would be useful for midwives."*

Another policy-level stakeholder mentioned the need for engaging teachers with experience in FP services, saying,

> "আমাদের টিচাররা বেশিরভাগই নার্স ব্যাকগ্রাউন্ডেড এবং তারা পিপিএফপি বিষয়ে অতোটা অভিজ্ঞ না, এখানে ফ্যামিলি-প্ল্যানিং বিষয়ে যারা অভিজ্ঞ আছেন তারা মিডওয়াইফদের ক্লাস নিলে বেশি কার্যকরী হতো।"
>
> *"Most of our teachers come from a nursing background and have less knowledge on PPFP. It would have been more beneficial for those with knowledge on family planning to attend the midwives' classes."*

The midwives emphasized the need for giving importance to complication management in both lab and hospital settings, stating,

> *"পিপিএইচ, একলামশিয়া, রিটেইন প্লাসেন্টা, বাচ্চার রিসাসিটেশন এরকম আরো কিছু জটিলতা ম্যানেজমেন্ট বুঝার জন্য আমাদের ল্যাবে এবং হাসপাতালে, দুই জায়গাতেই প্র্যাকটিক্যাল করানো উচিত।"*
>
> *"Practice should be done in both the lab and the hospital for complications such [as] PPH, eclampsia, retained placenta, baby resuscitation, and others in order to learn care."*

Several policy-level stakeholders suggested fixing the target number of observations for practical sessions. In this regard, a stakeholder from a midwifery institute said,

> *"মিডওয়াইফরা যাতে সব কাজগুলো শিখতে পারে সেজন্য তাদের প্রতিটা টপিকের উপর টার্গেট দেয়া উচিত, গর্ভমেন্টের কোন ফিক্সড টার্গেট নাই, কিন্তু প্রাইভেট থেকে মেনশন করা আছে, এএনসি, পিএনসি, ডেলিভারী, নিউবর্ণ কেয়ার-ফিক্সড করা আছে কোন সেবা কতগুলো দিতে হবে। এটা এমনভাবে কাউন্ট হয় যেমন ৪০ টি টার্গেট ডেলিভারীর মধ্যে ফার্স্ট ইয়ারে এতগুলো দেখবা, সেকেন্ড ইয়ার ও থার্ড ইয়ারে এতগুলো এসিস্ট করবা আর ফোর্থ ইয়ারে এতগুলো নিজেই পারফর্ম করবা।"*
>
> *"Midwives should be given targets on every topic so that they can learn all the tasks; there is no fixed target in government (institutes), but in private (institutes) it is mentioned ANC, PNC, delivery, and newborn care. There is a fixed target of service provision. It is counted in such a way that out of 40 targets of deliveries, this certain number have to observe in the first year, this certain number have to assist in the second and third year, and this certain number have to perform by yourself in the fourth year."*

For FP-related practical sessions, the line director of the DGFP suggested that midwives could receive hands-on training from local-level FP facilities, such as training on counseling and service provision for PPFP from Mother and Child Welfare Centres.

Barriers and challenges to implementing the midwifery program

Barriers and challenges at the facility level

In our qualitative interviews, the midwives, their supervisors, and local-level managers mentioned several barriers and challenges to implementing the midwifery program at the facility level. Most of the study participants expressed concern regarding the shortage of midwives at UHCs. According to them, having only four midwives at each UHC was not adequate to ensure 24/7 maternity services. They also mentioned that in UHCs, it was tough to maintain midwife roster duties with only four midwives, any of whom might take a day off after a night shift or go on general or maternity leave. As such, smooth provision of MNH services was not always possible.

To solve this problem, in some UHCs, authorities had engaged SSNs along with midwives to provide MNH services. Moreover, with the permission of authorities, in several complexes, midwives were being engaged in double-shift duties (evening and night; night and morning; or morning and evening shifts) and also available on call, resulting in an excessive workload for them. In this regard, an Obs/Gyne consultant working at a UHC said,

> *"এএনসি/পিএনসি ও লেবার পেশেন্টদের সেবা দিতে ওদের (মিডওয়াইফদের) ৪ জনের উপরে লোডটা বেশীই পড়ে যায়, এর মধ্যে একজন ম্যাটারনিটি লিভ-এ আছে, আবার কারও ছুটি থাকে, কারও ডে অফ থাকে। যে জন্য আমরা এসএসএন (নার্স) দিয়ে বাধ্য হচ্ছি ওদের (মিডওয়াইফদের) সাথে ইনভলব করার জন্য। তবে আরও চারজন মিডওয়াইফ যদি থাকতো তবে সার্ভিসগুলোর কোয়ালিটি আরো ভালো হতো।"*
>
> *"To serve ANC/PNC and labor patients, the load on four of them (midwives) is quite heavy. Among them, one might be on maternity leave, some might have [a] holiday, [and] some might have [a] day off. Therefore, we are forced to engage SSNs (senior staff nurses) with them (midwives). But if there were four additional midwives, the quality of services would have been better."*

Another major challenge mentioned by our study participants was the unavailability and irregular presence of Obs/Gyne consultants at the facilities. During our study, we observed that in 13 of the 24 facilities studied, the Obs/Gyne consultant post was vacant. In facilities where an Obs/Gyne consultant was posted, their services were not regularly available.

According to the majority of the participants, this hindered the proper monitoring and supervision of the midwives, which resulted in a lack of confidence among them concerning managing MNH complications and hampered the quality of MNH service provision. Regarding this lack of consultants, one UH&FPO said,

> *"আমার ম্যাটারনিটি কেয়ার দেয়ার সবাই আছে, মিডওয়াইফ আছে, ডাক্তার আছে, এনেসথেসিওলজিস্ট আছে, কিন্তু যিনি নেতৃত্ব দিবেন, তিনিই নাই। মানে আমার গাইনী কনসালটেন্টই নাই, তাইলে পরিপূর্ণ সেবাটা কিভাবে দিবো"*
>
> *"I have everyone to provide maternity care. There are midwives, there are doctors, there are anesthesiologists, but there is no one who will lead. I mean, I don't have a gynecologist, so how can I provide the full service?"*

Our qualitative findings also revealed that gaps in the orientation of the midwives and their supervisors on SOP and the lack of supportive supervision worked as barriers to implementing midwifery services, the details of which were discussed earlier in this paper.

The majority of the study participants mentioned that there was no dedicated support staff (e.g., ayas, cleaners, and security guards) for labor room and maternity units. Most of the midwives mentioned that the lack of full-time ayas and cleaners for labor rooms prevented them from providing quality midwifery care. Moreover, many of the participants also mentioned that MNH service provision was compromised due to the lack of security guards in front of ANC and labor rooms. Regarding the lack of support staff, one Obs/Gyne consultant said,

> *"লেবার রুমে সাপোর্ট স্টাফ থাকা জরুরী, একটা ডেলিভারী স্মুথলি করতে সার্বক্ষণিক আয়া নাই, আয়াকে ডাকলে দেখা যায় সে অন্য ওয়ার্ডে কাজ করছে, একইভাবে লেবারের পরপর রুমটি পরিস্কার করার জন্য আলাদা ক্লিনারও নেই। এছাড়া বিকালে বা রাতে রোগীর এটেনডেন্ট ম্যানেজ করার জন্য কোন সিকিউরিটি গার্ডও নাই।"*
>
> *"It is important to have support staff in the labor room. There is no full-time aya for smooth conduction of delivery; if you call the aya, she is working in another ward. Similarly, there is no separate cleaner to clean the labor room after delivery. Besides, there is no security guard to manage patient attendants in the evening or night."*

All of the supervisors and local-level managers said that there was no allotment of hospital quarters/dormitories for midwives. In some UHCs, UH&FPOs had arranged accommodations for the midwives in the staff quarters. However, the midwives were reluctant to stay there due to high rent costs and poor quality of housing.

Barriers and challenges at the central level

Lack of manpower at the DGNM functioned as a barrier to effectively managing administrative activities and the recruitment process for the midwifery program. One KI said,

> *"সেন্ট্রাল লেভেলে মিডওয়াইফারি লোকবল কম, আমরা আসলে দুই-চারজন মিলে মিডওয়াইফারির কাজগুলো করছি, আমাদের তো শুধু রিক্রুটমেন্টের কাজ না, এদের ক্যাপাসিটি বিল্ডিং, পোস্টিং, ট্রান্সফারসহ আরো বেশকিছু কাজ করতে হয়।"*

> *"There is a shortage of manpower at the central level. Actually, we, only 2–4 people, are doing work for midwifery program. We are doing not only the recruitment work but also many other works including capacity building, posting, transfer."*

Another major challenge they faced at the central level was frequent change/transfer of high officials causing delay in administrative activities. In this regard, one representative of a professional body said,

> *"ডিজিএনএম-এর উচ্চপদস্থ কর্মকর্তারাই মিডওয়াইফদের যেকোন বিষয়ে মূল ডিসিশন মেকার। কিন্তু উনারা খুব ফ্রিকয়েন্টলি চেঞ্জ হন, নতুন একজন ডাইরেকটর এসে কাজটা বুঝতে বুঝতেই আবার চেঞ্জ হয়ে যাচ্ছেন। আবার নতুন কেউ না আসা পর্যন্ত ঐ ফাইলটা সেখানেই আটকে থাকছে, এভাবেই কিন্তু লেনদি হয়ে যাচ্ছে।"*

> *"High officials of [the] DGNM are the main decision-makers regarding any matter of midwives. But they transfer very frequently. As soon as a new director comes [and] starts understanding the responsibility, and he gets transfer[red] again. Until someone new comes, that file is stuck there; this is how any process gets lengthy."*

In the KIIs, participants suggested to create additional administrative posts at the DGNM (deputy directors, assistant directors, officers, etc.) for smooth operation of midwife recruitment, posting, training, and related activities. They also suggested that high officials should be retained for at least five years to develop ownership and contribute to realistic refinement of the midwifery program for its successful adaptation in the health system. Regarding the need for additional managers at the central level, one respondent said,

> *"এখানে প্রশাসনিক বিভাগ আলাদা থাকা দরকার, আলাদা ডাইরেক্টর না থাকুক- এসিস্ট্যান্ট মিডওয়াইফারি ডাইরেকটর এবং মিডওয়াইফারী অফিসারের সংখ্যা আরো বাড়ানো দরকার, মানে মিডওয়াইফারী ইউনিটটাতে আরো ক্লারিক্যাল স্টাফ থাকলে আমরা নিয়োগের কাজগুলো আরো তাড়াতাড়ি করতে পারতাম।"*

“Here, a separate administrative department (midwifery department) is needed; there might not be a separate director. The number of assistant midwifery directors and midwifery officers needs to be increased, i.e., if there [were] more clerical staff in the midwifery unit, we could do the recruitment work more quickly.”

Conclusions and recommendations

The study found that midwives at UHCs in Bangladesh have good knowledge on ANC, partograph use, and newborn care but require improvement in delivery, complication management, and FP services. Moreover, they lack confidence in independently managing MNH complications, primarily requiring the help of doctors and nurses in such cases. They also have major gaps in the understanding of their SOP and job responsibilities. The main reasons for this lack of knowledge on include lack of on-the-job training, related subject matter not being covered in their diploma course, and the midwives' limitations in understanding in English. Moreover, the midwives are not allowed to prescribe common drugs, recommend diagnostic tests, or refer patients, although these tasks are mentioned in their job responsibilities.

In the facilities we covered, the midwives were primarily engaged in providing ANC, but their independent engagement for conducting normal delivery remained low. The QoC for ANC provided by the midwives was poor in the majority of the UHCs, but that for normal delivery services was moderate. The midwives faced challenges in performing their responsibilities in good coordination with consultants (Obs/Gyne), nursing supervisors, and support staff. Moreover, there were major gaps in their supervision and mentoring. The midwives interviewed suggested a need for including new topics in both the theoretical and practical modules in the midwifery diploma course.

Based on the study findings, we make the following program- and policy-level recommendations:

Recommendations at the program level:

1. Refresher training of the midwives on their job responsibilities and SOP should be initiated immediately using the Bangla module.
2. An enabling environment should be created at the facility level by addressing the gaps in dedicated support staff, equipment, and logistics so that midwives can perform their tasks as per their SOP and maintain good QoC.
3. All vacant consultant (Obs/Gyne) posts should be filled and their availability ensured for supportive supervision of the midwives.
4. Guidelines should be developed and implemented for supportive supervision of the midwives to improve their confidence level and coordination with other cadres for delivering quality MNH care services.

5. A thorough assessment of the midwifery curriculum and its implementation process should be undertaken, covering the institutes in both the public and private sectors.

Recommendations at the policy level:

1. In each UHC, an additional four midwives should be posted for 24/7 smooth operation of midwifery services.
2. Midwives should be allowed to perform their job responsibilities as per their SOP, including prescribing medicine, advising on diagnostic tests, and referring patients.
3. The DGNM's capacity should be enhanced by providing additional directors and officers with a longer duration of stay for smooth operation of administrative activities.

References

1. National Institute of Population Research and Training (NIPORT), International Centre for Diarrhoeal Disease Research Bangladesh (icddrb), and MEASURE Evaluation, *Bangladesh Maternal Mortality and Health Care Survey 2016: Final Report*. 2019, NIPORT, icddr,b, and MEASURE Evaluation: Dhaka, Bangladesh, and Chapel Hill, NC, USA.
2. Berhan, Y. and A. Berhan, *Skilled health personnel attended delivery as a proxy indicator for maternal and perinatal mortality: a systematic review.* Ethiopian Journal of Health Sciences, 2014. **24 Suppl**(0 Suppl): p. 69-80.
3. Moyer, C.A., P. Dako-Gyeke, and R.M. Adanu, *Facility-based delivery and maternal and early neonatal mortality in sub-Saharan Africa: a regional review of the literature.* African Journal of Reproductive Health, 2013. **17**(3): p. 30-43.
4. GBD 2015 Maternal Mortality Collaborators, *Global, regional, and national levels of maternal mortality, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015.* Lancet, 2016. **388**(10053): p. 1775-1812.
5. Goyet, S., et al., *On-site clinical mentoring as a maternal and new-born care quality improvement method: evidence from a nurse cohort study in Nepal.* BMC Nursing, 2020. **19**: p. 3.
6. Pollard, K., *The fundamental skills: reducing maternal morbidity and mortality.* The Practising Midwife, 2017. **20**(3): p. 23-25.
7. Williams, S.A., *Narratives of responsibility: Maternal mortality, reproductive governance, and midwifery in Mexico.* Social Science & Medicine, 2020. **254**: p. 112227.
8. International Confederation of Midwives (ICM). *ICM Definitions*. Available from: https://www.internationalmidwives.org/our-work/policy-and-practice/icm-definitions.html.
9. Bogren, M., F. Begum, and K. Erlandsson, *The historical development of the midwifery profession in Bangladesh.* Journal of Asian Midwives (JAM), 2017. **4**(1): p. 65-74.
10. Zaman R, S.M., Khaled A, Islam S, *Final report: Baseline study on trained diploma midwives in Bangladesh*. 2019, Oxford: Oxford Policy Management, Dhaka: Mitra and Associates.
11. World Health Organization, et al., *Delivering quality health services: a global imperative for universal health coverage*. 2018, Geneva: World Health Organization.

12. Biswas, T.K., et al., *Quality of maternal and newborn healthcare services in two public hospitals of Bangladesh: identifying gaps and provisions for improvement.* BMC Pregnancy and Childbirth, 2019. **19**(1): p. 488.
13. Anwar, I., N. Kalim, and M. Koblinsky, *Quality of obstetric care in public-sector facilities and constraints to implementing emergency obstetric care services: evidence from high- and low-performing districts of Bangladesh.* Journal of Health, Population and Nutrition, 2009. **27**(2): p. 139-55.
14. Nababan, H.Y., et al., *Improving quality of care for maternal and newborn health: a pre-post evaluation of the Safe Childbirth Checklist at a hospital in Bangladesh.* BMC Pregnancy and Childbirth, 2017. **17**.