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Knowledge, Attitudes, and Practices of Traditional Birth Attendants in Bangladesh: A Qualitative Study on Maternal and Newborn Healthcare in Local Community

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ABSTRACT

Background: Traditional birth attendants (TBAs) play a significant role in providing care to mothers and newborns in Bangladesh. Understanding their knowledge, attitudes, and practices regarding maternal and newborn health is crucial for improving maternal and child health outcomes. This qualitative study aimed to explore the knowledge, attitudes, and practices of TBAs regarding maternal and newborn healthcare in Bangladesh.

Methods: In-depth interviews were conducted with 11 TBAs in local communities using a predeveloped and pretested interview guide, focusing on their understanding of safe maternal and newborn healthcare practices. Knowledge and practice of the TBAs related to maternal and newborn health were explored under several broad themes.

Results: The study revealed a mix of beneficial and potentially harmful behaviors among TBAs in maternal and newborn health practices. While they recommend beneficial practices like exercise and hygiene during delivery, they also utilize practices lacking evidence or potentially harmful, such as traditional medicine use. TBAs demonstrated awareness of clean delivery importance but had varied adherence to hygienic practices. Knowledge and attitudes varied among TBAs, with some receiving formal training.

Conclusion: This study highlights the imperative for educational interventions, training programs, and collaboration between TBAs and healthcare providers to enhance TBAs' knowledge and awareness. These efforts are crucial for improving maternal and child health outcomes in local communities across Bangladesh.

1 | Introduction

Preventable complications during pregnancy and childbirth continue to be a leading cause of mortality and morbidity for

mothers and newborns, particularly in low- and middle-income countries (LMICs) [1]. To address these critical issues, the Sustainable Development Goals (SDGs) 3 have set specific aims

Abbreviations: AOR, adjusted odds ratio; BBS, Bangladesh Bureau of Statistics; CI, confidence interval; OR, odds ratio; SDG, Sustainable Development Goal; WHO, World Health Organization.

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Summary

- What Is Known?
 - Traditional birth attendants (TBAs) play a significant role in maternal and newborn healthcare in Bangladesh.
 - Their knowledge, attitudes, and practices significantly influence maternal and child health outcomes.
- What Is New?
 - While TBAs often recommend beneficial practices like exercise and hygiene during delivery, some engage in potentially harmful practices, such as the use of traditional medicine without evidence-based backing.
 - Formal training among TBAs is inconsistent, leading to varied adherence to safe practices.
- Clinical Implications
 - Targeted educational interventions and training programs are essential to improve the knowledge and practices of TBAs.
 - Strengthening collaboration between TBAs and healthcare providers can enhance maternal and newborn health outcomes.

to reduce maternal mortality to 70 per 100,000 live births and child mortality to 12 and 25 per 1000 live births by 2030 [2]. These targets were established following the implementation of the Millennium Development Goals between 2000 and 2015, which had a broad focus on reducing maternal and child mortality [3]. However, despite these efforts, the success could not reach to the predefined target. As a result, the number of women dying from pregnancy and childbirth complications remains tragically high [1]. Each year, ~287,000 women and 2.5 million newborns die from these preventable causes [1]. Up to two-thirds of these deaths could be averted through low-cost, community-based interventions that span from pregnancy through childbirth, particularly during delivery [4, 5]. Ensuring trained birth attendance is crucial for reducing such deaths [6].

Despite the importance of skilled birth attendance at the community level, traditional birth attendants (TBAs) handle around half of all deliveries in LMICs, including Bangladesh, where recent estimates indicate that about 50% of deliveries occur in hospitals [7]. The lack of accessibility and availability of skilled birth attendants (SBAs) at the community level makes TBAs the primary source of delivery healthcare services [8]. However, TBAs often lack formal training and are influenced by local cultural norms, beliefs, informal and local economies, and myths [9, 10]. There is a notable gap in the comprehensive knowledge, attitude, and practice patterns of TBAs in Bangladesh and other LMICs [11, 12]. Most available studies have focused primarily on the impact of TBAs on maternal and child health outcomes without delving into the broader context of their practices [13, 14].

Therefore, this study aims to explore the knowledge, attitudes, and practices of local TBAs regarding antenatal care, delivery, maternal complications, and newborn care. This study intends to provide a deeper understanding of the role of TBAs in maternal and newborn health within the local community,

identify gaps in their knowledge and practices, and offer insights into potential interventions that could enhance the quality of care provided by TBAs.

2 | Methods

2.1 | Study Settings and Design

The study was conducted in three districts of Bangladesh: Dhaka, Chattogram, and Mymensingh. The selection of these districts was purposive, as recent nationally representative surveys reported a higher occurrence of births supervised by TBAs in these areas. TBAs were identified by local community members based on the inclusion criteria that they provide all types of maternal healthcare services, with delivery healthcare services being mandatory. This study excluded delivery assistants or others who were only responsible for tasks such as cutting the cord or giving oil massages during or after delivery.

2.2 | Data Collection

A total of 11 TBAs in local communities were included in the in-depth interviews (IDIs) before reaching saturation. The interview was conducted using a predeveloped interview guideline. The guide was developed earlier and revised through trials at the field level. Each IDI lasted approximately 1 h and was conducted in the homes of the TBAs. The interviews were carried out by three female postgraduate students from the Department of Population Science at Jatiya Kabi Kazi Nazrul Islam University. Interviews were conducted in isolated places to ensure privacy and confidentiality, with no one else present. Informed verbal consent was obtained and recorded before conducting the interviews.

2.3 | Data Analysis

The recorded interviews were first transcribed verbatim in Bangla by trained researchers and subsequently translated into English. To ensure accuracy, a back-translation process was applied to a subset of transcripts, and discrepancies were resolved by the research team. The transcripts were then imported into NVivo-12 software for analysis. Two complementary analytic strategies were employed. First, inductive coding was undertaken to allow new ideas and practices to emerge directly from the narratives of TBAs. Second, a deductive approach was applied, guided by the study objectives and existing literature on maternal and newborn health. This combination ensured both contextual sensitivity and theoretical alignment.

A codebook was developed iteratively. Two researchers independently coded several transcripts, compared results, and refined code definitions. Weekly team meetings were held to resolve discrepancies, achieve consensus, and ensure intercoder reliability. All coding decisions and revisions were documented in an audit trail to enhance transparency. Following coding, data were organized into (i) behavioral matrices summarizing TBAs' practices across different domains of maternal and newborn health, and (ii) thematic categories capturing knowledge, attitudes, and practices. These themes were then

compared between trained and untrained TBAs to highlight variations in practices. The adequacy of the data set was judged using the concept of information power—recognizing that the richness and diversity of responses provided sufficient depth for meaningful analysis despite the relatively small sample size. Reflexivity was maintained throughout, with the team critically reflecting on their disciplinary backgrounds and potential influence on interpretation.

3 | Results

3.1 | Background Characteristics of Traditional Birth Attendants (TBAs)

The background characteristics of the TBAs included in this study are presented in Table 1. The mean age of the TBAs was 60 years, with the youngest being 38 and the oldest 82 years. The reported mean years of practice was 26 years. The majority of the TBAs in our study were illiterate, with only two having completed 5 years of schooling.

3.2 | Traditional Birth Attendants' Practices in Maternal and Child Health

We summarized TBAs' behaviors in various domains of maternal and child health, with the relevant results presented in Table 2. While some beneficial practices were noted, such as recommending exercise, nutritious food, vaccination, and ensuring hygiene during delivery (changing clothes, washing hands, using gloves), many practices were potentially harmful or lacked evidence. These included advising traditional medicine, maintaining heavy workloads, using mustard seed oil massages before delivery, and certain newborn resuscitation techniques (cord massage, backside massage). Harmful practices like manual placenta removal and bathing newborns immediately after delivery were also observed.

3.3 | Suggestions Provided by TBAs During Pregnancy

In most cases, TBAs were contacted by the patient's family only at the time of delivery, limiting their ability to provide suggestions during pregnancy. Some TBAs were approached during mid-pregnancy and would give advice based on their knowledge, including advice on nutritious food, maintaining workload, exercising, walking slowly and steadily, traditional medicine, and necessary vaccinations. TBAs who recommended exercise explained it as a means of “growing a healthy baby.” Those who suggested walking slowly and maintaining workload explained it to “ensure the baby's safety and prevent miscarriage.” TBAs who suggested traditional medicine explained it as a means to “facilitate easy placenta removal or increase labor pain.”

3.4 | Suggestions Provided by TBAs During Delivery

TBAs were aware of the importance of clean delivery and tried to conduct deliveries in a clean room or a separate room if

available. However, they noted that most patients did not have a separate room for delivery.

Muslim households typically do not have a separate room for delivery, while Hindu households do.

A TBA, age 70 years

Fewer TBAs changed their clothes before delivery, fewer used gloves, and almost all washed their hands with soap.

I always stay clean and tidy, so I don't need to change my clothes for delivery. I go to deliver wearing what I am already wearing.

A TBA, age 50 years

No, I don't change my clothes. I always stay clean. I do prayer all the time, you know.

A TBA, age 70 years

Many TBAs massaged the mother with mustard oil during delivery to help push the baby out. They used the one-finger, two-finger, and three-finger tests to check if the baby was ready for delivery. If the patient did not have labor pain, they induced labor using medication or saline and then completed the delivery process.

I take water in one container and oil in another. Then I check the position of the baby with my finger. If everything is fine, I massage with oil, and the baby comes to the front and is delivered. If the baby's position is not right, I understand that delivery will not happen at home. They have to be taken elsewhere.

A TBA, age 62 years

3.5 | Placenta Removal

Some TBAs reported using their fingers or hands to manually remove the placenta if it did not expel on its own after delivery.

First, I make sure of the baby's health, then I cut the umbilical cord. I hold the cord with one hand; if the placenta comes out on its own, I do nothing further. If it doesn't, I use my fingers to gently bring it forward, which helps to remove all the remaining impurities (placenta) from inside.

A TBA, age 70 years

3.6 | Delivery Complications

All TBAs reported referring patients to a government hospital if they encountered any problems during delivery, such as the baby being in a breech position, the baby not crowning, or the mother having a physical complication. Some said they had already informed the patient that the baby had died after not finding a heartbeat during delivery. They then delivered the

TABLE 1 | Background characteristics of the traditional birth attendants.

Variables	Frequency	Percentage
Age		
35–60	2	18.18
61–85	9	81.82
Education		
No education	5	45.45
Primary education	2	18.18
Other	4	36.37
Division		
Chattogram	2	18.18
Mymensingh	5	45.45
Dhaka	4	36.37
Years of TBA services		
1–25	6	54.55
26–50	5	45.45

stillborn baby with the consent of the patient's family. Additionally, one midwife mentioned a baby dying during delivery due to maternal complications, asserting that it was not her fault.

Another child, XX's daughter XX's child, had an abnormal position. During delivery, the baby had come half-way out. XX's mother was also there. Somehow, the patient suddenly moved her legs. After that, we couldn't get the baby's head out. That baby passed away. It wasn't our fault. The baby died due to the mother's mistake.

A TBA, age 70 years

There was no standard measurement of postpartum hemorrhage. TBAs used visual observation to identify excessive bleeding. Women with unmanageable complications were referred to the government hospital.

In case of excessive bleeding, I massage the pregnant woman's abdomen, give her a tablet (Nisocostal), and apply a clean cloth to stop the bleeding.

A TBA, age 32 years

3.7 | Newborn Care

Newborn care practices were similar among all TBAs. The standard practice was to place the newborn on a plastic sheet or cloth on the floor immediately after delivery, remove the placenta, and cut the cord. The child was then cleaned with warm water or cloths and mustard seed oil, dried, massaged with mustard seed oil, wrapped, and given to the mother or a relative. TBAs agreed that they advised the baby's family about vaccinations for the mother and the baby.

A few TBAs said that after delivering the baby, they would hand the baby directly to a family member without

doing anything themselves. The family would then take care of everything, from cleaning the baby to other necessary tasks.

I do not clean the baby. After cutting the umbilical cord, I hand over the baby to the parents. The grandmother or relatives, whoever is present, clean the baby with a cloth and give a bath after six or seven days. I advise against giving a bath immediately. In the hospital, they advise against using oil; however, in the village, people massage the baby with mustard oil after bathing and expose the baby to warmth to keep them healthy and increase their strength.

A TBA, age 70 years

Most TBAs do not recommend bathing a newborn immediately after delivery. A few recommend bathing the baby the day after delivery, while others suggest waiting until the third or even the seventh day.

Before, I used to bathe the baby right after delivery. Now, I just wipe the baby with a cloth and massage with oil (mustard oil). The next day, the parents bathe the baby. If not, they call me, and I go and give the baby a bath.

A TBA, age 60 years

3.8 | Newborn Resuscitation

Several practices were noted for managing nonbreathing infants at birth. Resuscitation methods included inserting fingers into the mouth and nose to clear the passageway, turning the baby upside down and striking the feet, striking the baby's back, and performing mouth-to-mouth resuscitation. Some also followed religious customs, including prayer to Allah and animal sacrifice.

I used to massage the baby's umbilical cord. I would massage their back. I would ask them to pray. I would tell them to sacrifice a life in exchange for a life. Even then, if the baby didn't get better after doing all this, I would send them to the doctor.

A TBA, age 72 years

“Massaging the placenta” and “milking the umbilical cord” were also mentioned. TBAs did not use other materials, such as a bag or tube and mask for resuscitation.

3.9 | Newborn Feeding

Exclusive breastfeeding practice was initiated after the infant was cleaned. If the mother was unable to produce breast milk until 2–3 days after delivery or did not produce enough milk, TBAs often recommended supplemental feeds such as animal milk, lactogen, or water.

TABLE 2 | Behavior matrix of common TBAs practices for maternal and neonatal outcomes.

	Reported practice	Number of TBAs who reported the practice (<i>n</i> = 11)	Reasons (if given) for practice	Potential effect on health outcomes
Antenatal care	No advice given to practice	Maximum		
	To exercise	Few	Healthy for the baby	Beneficial
	To walk slowly and steadily	Few	Ensuring a baby's safety	Beneficial
	Advice for traditional medicine	Few	Safe delivery	Lack of evidence
	Recommendation to maintain a heavy workload	Few	Ensuring a baby's safety	Lack of evidence
Delivery practices	Vaccination	Few	To protect mother and child	Beneficial
	Nutritious food uptake	Some	For easy digestion, healthy mother and child	Beneficial
	Separate room	None	To maintain hygiene for delivery	Beneficial
	Change dress before delivery	Few	To maintain hygiene	Beneficial
	Use blade and thread	Maximum	For delivery	Lack of evidence
	One-, two-, three-finger test	Maximum	To test the condition of the baby	Potentially harmful
	Give medicine or saline	Maximum	To increase labor pain	Lack of evidence
	Sweep and clean the floor	Few	To maintain hygiene	Beneficial
	Hand wash with soap before delivery	Maximum	To maintain hygiene	Beneficial
	Use gloves	Some	To maintain hygiene	Beneficial
Placenta removal	Use hot water	Some	For delivery	Lack of evidence
	Massage with mustard seed oil before delivery	Maximum	To push the baby for delivery	Potentially harmful
	Bring it forward with the hands or fingers and then cut the placenta	Few		Harmful
Delivery complications	Delivered dead baby	Few		
	Delivered disabled baby	Few		
	Faced complications during delivery	Few		
	Massage with mustard seed oil	Maximum	For baby's strength and good health	Potentially harmful
	Wipe with cloth	Few	Cleaning purposes	Lack of evidence
Newborn care	Given to a family member	Few	Family can do whatever they want	Lack of evidence
	Bathing newborn after delivery	Few	For cleanliness	Harmful
	Suggest vaccination	Few	For baby's good health	Beneficial
	Used to massage the umbilical cord	Maximum		Lack of evidence
Newborn resuscitation	Backside massage of the baby	Maximum		Potentially harmful

(Continues)

TABLE 2 | (Continued)

Number of TBAs who reported the practice (n = 11)		Reported practice	Reasons (if given) for practice	Potential effect on health outcomes
Newborn feeding	Few	Mouth-to-mouth breathing		Potentially harmful
	Some	Holding the foot, upside down and slap it on the back		Potentially harmful
	Few	Clearing out mouth and nose with finger to resuscitate	If the mouth and nose are full of dirt making breathing difficult	Beneficial
	Maximum	Suggest exclusive breastfeeding	• Better for baby • Learned from training	Beneficial
Postnatal care	Few	Feed honey	Tradition and culture	Harmful
	Some	Use of supplemental feeds (includes lactogen, goat milk, cow milk, water)	If mother is not producing milk	Potentially harmful
	Some	Postnatal visit		Beneficial
Training	Some	Attend training for midwifery skills		Beneficial

Note: IDs were coded. Practices were recorded once for each mention by TBAs. If TBAs mentioned a practice more than once, it was only recorded one time. Number of TBAs was categorized as: None = 0 TBAs; Few = 1–3/11 TBAs; Some = 4–6/11 TBAs; Maximum = 7 or more TBAs.

I advise breastfeeding the baby with colostrum; if the baby does not get breast milk, meaning if the mother is unable to produce breast milk, then I suggest feeding sugar water. If breast milk still does not come in two or three days, I recommend giving Lactogen 1.

A TBA, age 62 years

Mustard seed oil massage of the newborn was unanimously practiced. It was believed to help keep the baby warm, build strength, and prevent sickness. Few TBAs used to feed newborns honey or sugar water after birth, though some mentioned they no longer practice this.

3.10 | Postnatal Care

When asked about postnatal care, many TBAs said they used to visit the patient's home for a few days after delivery to check on them. However, none of them knew about standardized practices for postnatal care.

3.11 | Knowledge and Attitudes

Among the participating TBAs, 45% said they had received delivery training from various places such as government hospitals or BRAC centers (a private NGO in Bangladesh working in several aspects of maternal and child health). Those who had not received any training said they had learned about delivery on their own by working as assistants in hospitals or by observing and assisting others.

TBAs did not charge a fee for their services but were compensated by the family with amounts ranging from 4.50 to 42.50 US dollars. Also, they were often offered food, rice, soap, oil, and clothes after a successful delivery.

I don't ask for anything as a delivery charge; sometimes they give me money happily, sometimes they give me a saree. Often, I do it for free for poor people.

A TBA, age 50 years

TBAs believe that the TBA profession has declined significantly compared to the past. They attributed this decline to the increased preference for cesarean deliveries due to their availability, as well as a lack of courage and patience, and fear of labor pain.

Nowadays, people have less patience and courage. If they feel pain for a day or two, they rush to Tangail to get a cesarean delivery.

A TBA, age 70 years

When asked if they were satisfied with their profession, TBAs said they were satisfied and felt peace of mind after delivering a baby. They also mentioned that the community respects them a lot for their profession. People come from far to seek their services, and some even call them doctors. These acknowledgments give TBAs and their families a lot of mental peace.

Everyone in the society praises me for this profession and often calls me a doctor.

A TBA, age 70 years

I have a very good reputation in my area. Everyone knows me for my work and comes to me from far and wide. My son and my husband are all very happy.

A TBA, age 50 years

4 | Discussion

This study aimed to provide a deeper understanding of the role of TBAs in maternal and newborn health within the community, identify gaps in their knowledge and practices, and offer insights into potential interventions to enhance the quality of care provided by TBAs. This study found that around half of the TBAs received training from NGOs. Many of them reported several beneficial practices related to maternal and child health, such as recommending proper nutrition and physical exercise to maintain health. However, several misconceptions related to pregnancy and childbirth are also common, including the practice of traditional medicine and the use of mustard oil. It was also reported that TBAs referred mothers and newborns when complications that might cause life-threatening conditions were indicated. These findings suggest that further awareness-building programs targeting TBAs are important to improve maternal and child health outcomes in local communities in Bangladesh.

In Bangladesh, nearly four out of every ten deliveries are attended by TBAs, primarily in rural, uneducated, and underserved communities [15]. The use of antenatal and other forms of preconception care is very low in these groups, which also experience higher burdens of malnutrition, anemia, unintended pregnancies, and short-interval pregnancies [16, 17]. These factors collectively increase the risk of pregnancy complications [17]. Dependence on TBAs can lead to severe consequences [12, 18]. The underlying reasons include a lack of necessary knowledge or resources to provide comprehensive antenatal care, leading to missed opportunities for early detection and management of complications [19, 20].

Beyond the practices of TBAs themselves, socioeconomic and systemic healthcare limitations strongly shape maternal care choices in these settings [21]. For many families in rural Bangladesh, long distances to health facilities, poorly developed transport infrastructure, and high out-of-pocket costs for transportation, medicines, and informal fees discourage the use of skilled providers [22]. Women often require permission and financial support from husbands or senior family members, which delays or prevents timely care-seeking [23]. These barriers make TBAs—who are locally available, affordable, and socially trusted—the default option for many families, despite the risks.

The inadequacies of the healthcare setup also reinforce reliance on TBAs. Rural facilities are often understaffed, with frequent absenteeism of trained personnel, shortages of essential drugs and supplies, and weak referral mechanisms [23, 24]. Moreover, negative experiences such as long waiting times, unexpected costs, or disrespectful care erode community trust in formal

health services [24]. These systemic weaknesses leave many families with little alternative but to depend on TBAs, particularly in emergencies. In this sense, deliveries by TBAs occur not simply by preference but as a response to structural gaps in the health system.

In such circumstances, where women rely on TBAs due to socioeconomic and structural challenges, proper training of TBAs becomes critical. Without adequate training, they may fail to recognize complications early or delay referrals to medical facilities, thereby increasing the risk of severe outcomes [25, 26]. Moreover, deliveries managed by TBAs in resource-poor settings may lack access to essential medical interventions, such as emergency obstetric care, which is critical for managing complications [27]. Likewise, TBAs may not be equipped to provide comprehensive health education to expectant mothers about the importance of nutrition, family planning, and birth spacing, further exacerbating the risks of malnutrition, anemia, and closely spaced pregnancies [28, 29]. They may also not ensure the continuity of care needed for both mothers and newborns postpartum, leading to gaps in critical health interventions and follow-up [30].

Moreover, many of the unfavorable practices reported in this study carry serious risks for mothers and newborns beyond the irritation caused by mustard oil. For example, immediate bathing of newborns has been associated with hypothermia and increased neonatal mortality, while manual removal of the placenta by untrained attendants can result in severe postpartum hemorrhage, retained products of conception, sepsis, and maternal death [31]. Similarly, reliance on herbal remedies or cord massage as resuscitation methods may delay evidence-based interventions, increasing the risk of neonatal asphyxia [24, 31]. The use of nonsterile instruments and inconsistent glove use also exposes both mothers and infants to life-threatening infections such as tetanus and sepsis [31]. Taken together, these findings demonstrate how unsafe practices contribute directly to preventable morbidity and mortality, underscoring the urgency of replacing harmful customs with evidence-based approaches.

Our findings also revealed that TBAs' practices varied depending on whether they had ever received formal training. Those who had participated in NGO- or hospital-based programs were more likely to report handwashing, glove use, and encouraging vaccination, while those without training relied more heavily on traditional practices such as herbal remedies, mustard oil massage, and immediate newborn bathing. However, even among the trained TBAs, adherence to safe practices was inconsistent, suggesting that one-off or short trainings may have limited impact without continued supervision or refresher courses. By contrast, untrained TBAs were more likely to follow community customs unquestioningly, highlighting the need for structured, ongoing engagement with this group. While this study was not designed to conduct a systematic comparison between trained and untrained TBAs, these differences suggest that the quality and consistency of training programs could play an important role in shaping safer maternal and newborn health practices. Further research with larger samples is warranted to explore these variations in more depth.

In addition, the persistence of these practices must be understood within the broader context of cultural traditions that are deeply embedded in community life. For many TBAs,

knowledge and authority are inherited through kinship lines or apprenticeship, with techniques and rituals passed down across generations [32]. These traditions are not only viewed as legitimate but are often framed as moral or religious obligations—such as using oil massage to strengthen the newborn or invoking spiritual protection during delivery [33]. Challenging such practices can be perceived as disrespecting elders, rejecting communal wisdom, or even violating religious expectations. As a result, TBAs' practices and attitudes are strongly shaped by these cultural norms, making them resistant to change even when biomedical alternatives are available.

Another dimension that requires attention is the issue of liability and medico-legal responsibility. In the current context, when an adverse outcome occurs during deliveries managed by TBAs—such as maternal death, stillbirth, or severe complications—there is often no clear mechanism for accountability [34]. Families may blame TBAs informally, but in most rural communities these attendants are not regulated, licensed, or legally bound to practice within defined standards of care. This lack of oversight leaves a gap in responsibility that contrasts sharply with facility-based care, where trained providers and institutions are subject to professional and legal accountability [34]. The absence of a medico-legal framework for TBAs not only exposes mothers and newborns to unmitigated risks but also perpetuates a system where harmful practices can continue without recourse [22, 35]. Recognizing this gap is crucial: future policy reforms should not only strengthen training and supervision but also establish clear regulatory and accountability mechanisms to protect women and their infants.

This study's findings can have several policy implications. Formal training programs equipping TBAs with evidence-based knowledge on antenatal care, complication recognition, and referral mechanisms are crucial. Exploring opportunities to foster collaboration between TBAs and the formal healthcare system—for instance, through referral networks or educational outreach—may improve communication and continuity of care. However, the effectiveness of such strategies in Bangladesh remains uncertain, as our study did not evaluate outcomes of collaboration. Future studies should investigate whether and how such linkages could contribute to safer deliveries and improved maternal and newborn health outcomes. Equally important, investing in rural healthcare infrastructure, ensuring adequate staffing, improving supply chains, and strengthening referral systems are necessary to reduce dependence on TBAs. Addressing financial and transport barriers, alongside building respectful and responsive maternity services, can help restore community trust in formal care.

Raising community awareness also plays a vital role in shifting norms around maternal and newborn health. Awareness campaigns can empower women and families with knowledge about pregnancy risks, safe delivery practices, and the importance of timely care-seeking. By demystifying harmful practices and reinforcing the benefits of skilled care, such interventions can reduce delays in reaching health facilities. At the same time, strengthening the presence and visibility of SBAs at both community and facility levels is essential. SBAs are trained to manage complications, provide respectful care, and ensure adherence to evidence-based practices. Highlighting the

advantages of SBA-led deliveries—while ensuring their availability—can gradually reduce reliance on untrained TBAs and improve maternal and newborn health outcomes.

Although our study suggested that TBAs sometimes share advice or local remedies with families, there was limited evidence to assess how misinformation is perpetuated at the community level. Therefore, the statement that TBAs may unintentionally spread misinformation should be interpreted as a potential risk inferred from their reliance on traditional, non-evidence-based practices, rather than as a definitive finding from our interviews. Future research is needed to explore how health-related information flows through TBAs to families and communities, and what implications this has for maternal and newborn health.

This study possesses several strengths alongside a few limitations. Notably, it represents the pioneering exploration of TBAs' knowledge and attitudes concerning maternal and child health, specifically within delivery healthcare services, within Bangladesh. Data collection was meticulously executed using a predeveloped and pretested questionnaire, followed by comprehensive analysis. Consequently, the study's findings have significant potential to inform evidence-based policymaking and program development concerning TBAs. Nevertheless, a primary limitation stems from the small sample size of TBAs included in the study. Furthermore, the reliance solely on self-reported data from TBAs introduces the possibility of recall bias, potentially compromising data accuracy.

There may also exist undisclosed issues among TBAs that were not captured in the data collection process, necessitating a broader study scope for comprehensive exploration. Moreover, inconsistencies observed in some TBA responses highlight the need for further investigation, ideally through methods such as Focus Group Discussions. However, such supplementary analysis was beyond the scope of this study. Moreover, one of the major limitations of this study is its limited sample size, which restricts the ability to draw broad generalizations. Taken together, these limitations underscore the importance of larger and more in-depth future research to generate robust and generalizable insights.

5 | Conclusions

The findings of this study highlight a concerning lack of knowledge and awareness among TBAs regarding safe maternal and child healthcare practices, coupled with the presence of several misconceptions. Such gaps in knowledge and misconceptions pose a significant risk of exacerbating maternal and child health complications, potentially contributing to increased rates of maternal and child mortality. Therefore, it is imperative to implement educational interventions and provide comprehensive training to enhance TBAs' proficiency in standard delivery procedures, maternal care, newborn care, and adherence to safe practices. Furthermore, fostering collaboration between TBAs and healthcare providers is essential. This collaboration can facilitate the establishment of a robust referral system for high-risk pregnancies and complications, ensuring timely access to appropriate medical care and reducing adverse outcomes for mothers and infants.

Author Contributions

Md Abdullah Al Mamun, Md Bakhtiar Uddin, and Md Nuruzzaman Khan conceptualized and designed the research, supervised data collection, result processing and interpretation, served as principal investigators, and managed the project. Md Faruk Shah contributed to the conceptualization of the data analysis along with Atika Rahman Chowdhury. Atika Rahman Chowdhury formally analysed the data and wrote the first draft of the manuscript. Lubna Yasmin and Mostofa Tarekul Ahsan critically reviewed the manuscript. All authors approved the final version of the manuscript.

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Consent

Prior to the commencement of the study, informed written consent was obtained from the respondents. Before doing so, the participants and/or their parents were provided with a clear understanding of the study's objectives and their right to participate or decline without any discomfort.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data analyzed during the course of this study are available from the corresponding authors upon reasonable request. We cannot share these data publicly because of the restrictions imposed by the Ethical Approval Board.

Transparency Statement

The lead author and research team, confirm that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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