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Midwives' experiences with implementation of active management of third stage of labor in Sub-Saharan Africa: a systematic review

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Abstract

Background Globally, post-partum hemorrhage (PPH) remains the leading cause of maternal mortality, and active management of the third stage of labor (AMTSL) serves as an effective solution to this critical childbirth and maternal health issue. However, adherence to AMTSL guidelines remains low in Sub-Saharan Africa (SSA): thus, midwives' experiences are essential for interventions aimed at scaling-up AMTSL use. In this study, we identify, appraise, synthesize, and evaluate empirical qualitative evidence on midwives' experiences with AMTSL implementation in SSA.

Methods The review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A systematic literature search was conducted across multiple databases, including PubMed, CINAHL, and Scopus, focusing on qualitative studies published between 2003 and 2021, which examined midwives' experiences with the implementation of AMTSL. Keywords such as "active management of the third stage of labor," "postpartum hemorrhage," "maternal mortality," "experiences of midwives," and "sub-Saharan Africa" helped us retrieve 450 articles, which were scaled down to four after applying the inclusion criteria. The thematic analysis, thus reports findings from the four papers.

Findings Five key themes emerged, namely: familiarity with AMTSL; benefits of AMTSL; experiences of midwives with the application of AMTSL; barriers to the implementation; and how to improve implementation. These themes reveal nuances regarding how midwives come to know, apply, and navigate the execution challenges as well as how to promote AMTSL implementation. For illustration, training in AMTSL improves knowledge, yet skepticism persists despite its importance in preventing PPH. Many midwives do not consistently follow all procedures due to barriers like heavy workloads and the unavailability of oxytocin. To enhance AMTSL use, teamwork, delegation, communication, and ensuring oxytocin availability were recommendations proffered.

Conclusion Midwives' implementation of AMTSL reduces PPH and enhances maternal outcomes, despite the lingering implementation challenges they encounter, especially in low-resource settings. Policies must encourage its use by ensuring the availability of high-quality oxytocin, including proper storage conditions to address shortages, and in addition, priority be assigned to in-service training on its implementation. Finally, ensuring flexible work routines and effective teamwork can also help scale up AMTSL administration and compliance.

Keywords Maternal Mortality, Postpartum Hemorrhage AMTSL, Oxtocin, Uterine Massage, Controlled Cord Traction, Midwives

Background

Despite significant progress, maternal mortality—death associated with pregnancy and childbirth remains considerably high: with marked variations around the globe. For instance, in 2020, more than 287,000 pregnant

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women (800 per day) died from such complications, with 95% of these deaths occurring in developing countries—lower-middle-income countries (LMICs) [73, 74]. The high maternal mortality rate (MMR) in low-income countries (LICs) was 430 per 100,000 live births, relative to 13 per 100,000 live births in high-income countries (HICs) [74], a reflection of health inequality. Conversely, women within these resource-constrained regions have a higher fertility rate [7, 23], increasing their lifetime risk of maternal mortality—the probability that a 15-year-old woman will die from pregnancy and childbirth complications. HICs had an MMR of 1 in 5300, compared to 1 in 49 in LICs [74], partly explaining why 87% (253,000) of the estimated maternal mortality occurs in Southern Asia and Sub-Saharan Africa (SSA). Even with a significant drop in MMR of about 34% between 2000 and 2020, SSA recorded two-thirds (202,000) of maternal mortalities in 2020. Infection, excessive blood pressure during pregnancy (eclampsia and pre-eclampsia), childbirth complications, unsafe abortions, and severe bleeding account for over 75% of these maternal mortalities [9, 59, 65]. Being largely preventable, however, postpartum hemorrhage (PPH)—defined as losing more than 500 ml (mL) of blood, or severe PPH (over 1000 mL)—affects 10.5% of mothers in SSA and nearly 2% globally, contributing to one-fourth of maternal mortality [3, 37, 42, 52, 56]. PPH can result from retained placental tissue, uterine rupture, uterine atony, lesions in the birth canal, bleeding problems, or lesions in the uterus [5, 14, 62, 70]. The most frequent cause of PPH however, has been the uterus's tendency to contract and retract post-childbirth.

The most precarious moment for PPH is during the third stage of labor (TSL)—the interval between childbirth and the removal of the placenta and its membranes [26, 56, 63, 67]. Active Management of the Third Stage of Labor (AMTSL)—a preventative intervention comprising: administration of uterotonics, controlled cord traction (CCT) and uterine massage is recommended to prevent PPH [1, 16, 26, 34, 43]. The original AMTSL standards established by the International Confederation of Midwives (ICM) and International Federation of Gynecology and Obstetrics (FIGO) in [33] included uterotonic administration, cord clamping within one minute and uterine massage [1, 33, 58]. The revised ICM/FIGO guidelines now recommend delaying cord clamping for 1 to 3 min and emphasize skilled birth attendants in administering oxytocin and monitoring for uterine atony [17, 39, 56, 58]. Despite its effectiveness in preventing PPH, AMTSL remains underutilized in SSA [1, 5, 8, 56]. However, challenges such as a lack of skilled birth attendants and inconsistencies in practice hinder its implementation [55].

Approximately 10.7 million maternal mortalities were recorded between 1990 and 2015, with SSA accounting for 66% of these deaths [11]. PPH remains a critical issue in Africa, accounting for 33.9% of maternal mortality [2, 48, 76]. Despite the existence of evidence-based practices (EBP) such as AMTSL, adherence to these guidelines is alarmingly low across SSA. Research indicates that only 0.5–32% of births in seven SSA countries correctly implemented AMTSL; even where there is a sharp rise to 47% in compliance, such as the case in Ethiopia, this rise still falls below a 50% implementation rate [1, 15, 29, 75]. This lack of compliance persists despite some forms of training aimed at promoting these EBP [60]. Given the substantial contribution of PPH to maternal morbidity and mortality, particularly in developing countries, it is essential to assess midwives' experiences regarding AMTSL application. For this reason, the WHO has called for a significant reduction in MMR, emphasizing the necessity for effective midwifery practices [36, 51]. Midwifery involves proactive prevention and care, requiring collaboration and respect for women's unique needs [4, 22], guided by robust and contemporary evidence. Consequently, systematic reviews offer a comprehensive evidentiary synthesis that minimizes bias, identifies research gaps, and offers robust conclusions that guide clinical practice and policy development: essential to enhance our understanding and decision-making on AMTSL as an EBP [1, 61]. Thus, this study aims to conduct a qualitative systematic review to synthesize existing empirical qualitative evidence on midwives' experiences with the implementation of AMTSL in SSA. By addressing the notable absence of such reviews in SSA—a sub-region burdened with high MMR [2, 11, 48, 74] and high fertility [20], this research seeks to enhance understanding of AMTSL implementation and inform future practices. The findings will provide critical insights for decision-makers and midwifery practitioners, ultimately contributing to improved maternal health outcomes and the reduction of PPH-related maternal mortality.

Methods

This section outlines the methodology for carrying out the systematic review, which focused on midwives' experiences with the use or implementation of AMTSL towards PPH prevention in SSA.

Protocol

This study adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol, which provides a structured framework for conducting systematic reviews. PRISMA enhances the rigour and transparency of the review process, ensuring that researchers systematically identify, evaluate, and synthesize relevant studies [25]. By following this protocol, the study effectively minimizes bias, improves

reproducibility, and facilitates a comprehensive understanding of midwives' experiences with the use of AMTSL in preventing PPH in SSA. Utilizing the PRISMA framework allows for meticulous reporting of the review process, including search strategies, inclusion criteria, and data analysis methods, thereby reinforcing the study's credibility. Our study aimed to provide a comprehensive overview of the published literature on AMTSL, incorporating insights from various fields; thus, advanced statistical data processing was not feasible. Therefore, the following sections present our adaptation of the PRISMA technique while closely adhering to the relevant checklist items, such as specifying the eligibility criteria, search strategy, and data collection process.

Eligibility criteria

This review focused on the experiences of midwives regarding AMTSL application and utilized the PICo framework to develop the eligibility criteria [10, 41]. The inclusion criteria specified that studies must include nurses or nurse-midwives, allowing for a broader understanding of midwifery practices across different healthcare systems, with a focus on studies where midwives comprised 50% or more of the sample size. Additionally, studies needed to examine midwives' experiences with at least one step of AMTSL, including those that also addressed expectant management if they provided substantial information on AMTSL. Only studies conducted in SSA, are qualitative empirical research, and published in English Language—due to translation barriers were considered. Exclusion criteria eliminated studies focusing solely on healthcare workers other than midwives, research examining only expectant management of labor, and publications in languages other than English, as well as quantitative and mixed-method studies, and secondary studies like literature reviews and systematic reviews. These criteria ensure a focused and relevant literature search, enhancing the review's validity and applicability to midwifery practice in SSA.

Information sources

The study utilized several electronic databases to gather relevant literature on the experiences of midwives regarding AMTSL. The databases searched included PubMed, Web of Science, Scopus, Google Scholar, Cochrane Library, and African Journals Online (AJOL). Additionally, we explored CINAHL (Cumulative Index to Nursing and Allied Health Literature), PsychINFO, and the Directory of Open Access Journals (DOAJ) to ensure a comprehensive range of studies. These databases provided access to a diverse array of research articles, including peer-reviewed journals and grey literature, thus enhancing the depth of the review. We meticulously designed the search strategy to capture relevant studies that aligned with the established inclusion and exclusion criteria based on the PICo framework, ensuring a thorough and focused exploration of midwives' experiences with AMTSL in the context of SSA.

Search strategy and selection process

The search strategy for this systematic review involved a comprehensive and systematic approach to identify relevant literature on midwives' experiences with AMTSL. Initially, we developed specific search terms based on the PICo framework, including keywords and phrases related to midwives, AMTSL, and PPH. We executed searches across the multiple electronic databases discussed above. We tailored each database search to its unique indexing and search functionalities. Additionally, we applied the established inclusion and exclusion criteria to filter the results, ensuring that only studies that focused on midwives' experiences, conducted in SSA, and published in the English Language merit consideration. The search terms used in the study encompassed a range of keywords, including "midwives," "nurse-midwives," "active management of the third stage of labor," "AMTSL," "postpartum hemorrhage," "maternal mortality," "experiences of midwives," and "sub-Saharan Africa." Additionally, we included phrases such as "implementation of AMTSL," "midwifery practice," "childbirth practices," and "qualitative experiences" to capture a comprehensive set of relevant literature for the review.

Ensuring scientific rigor and reproducibility were the primary objectives of the designed selection process. Initially, we conducted searches across the identified databases using the finalized search query. This process involved systematically documenting each step, including the tasks performed and the outcomes achieved. In the first stage, we screened the titles and abstracts of the identified articles according to the established inclusion and exclusion criteria. This preliminary screening allowed us to filter out irrelevant studies and focus on those that aligned with our research objectives. We then subjected eligible articles to a second round of screening, where we assessed the full texts of these articles to verify their relevance and compliance with the inclusion criteria. Throughout this selection process, we meticulously recorded decisions and rationales to ensure transparency and facilitate future reproducibility. This thorough approach aimed to guarantee that only high-quality and pertinent studies were included in the final review, thereby enhancing the validity of our findings.

Data collection process and data extraction

We designed a custom data extraction template to ensure consistent and reliable data extraction from the selected

articles. The data items assessed were categorized into two distinct groups: high-level metadata relevant for characterizing the literature and in-depth findings that captured study-specific data pertinent to the research questions. Each piece of extracted data underwent a thorough validation process to ensure accuracy. The variables captured in this data extraction process included the authors and year of publication, the country and context of the research, the aim of the study, the study design, participant details, and a summary of the authors' findings. This structured approach facilitated a comprehensive understanding of the research landscape related to midwives' experiences with AMTSL.

Results

The following section outlines the key findings from the systematic review. We begin by detailing the study selection process and the characteristics of the included research. Subsequently, we present the main findings, organized according to their primary contributions to the research.

Study selection

A total of 450 articles were identified and imported into EndNote X9, from which 50 duplicates were removed, leaving 400 articles for review. Following an assessment of the titles and abstracts against the inclusion and exclusion criteria, 388 items were eliminated, resulting in 12 articles selected for full-text review. The inclusion and exclusion criteria guided the critical evaluation of these publications, leading to the rejection of eight articles for various reasons, including a lack of focus on AMTSL, non-English publication, absence of qualitative research, and failure to report on midwives' experiences. Ultimately, four high-quality papers were included in the review (See Fig. 1). Although a single reviewer conducted the evaluations, discussions with the academic supervisor ensured quality control. Table 1 summarizes the characteristics of the included studies.

Study characteristics

The studies included in this review span from 2014 to 2021, covering countries such as Ghana, South Africa, Namibia, and Ethiopia. From Table 1, the methodologies employed range from descriptive phenomenological studies and qualitative descriptive exploratory designs to case studies, with most utilizing semi-structured individual interviews and focus group discussions. Participants varied across studies, including midwives with experience ranging from 1 to over 21 years, with sample sizes from 3 to 19. This diversity in study design and participant demographics enriches the understanding of midwives' experiences and challenges in implementing AMTSL across different contexts.

Data analysis

Data analysis employed thematic analysis to identify and interpret patterns within the qualitative data collected from midwives' experiences regarding AMTSL. This approach was chosen for its ability to provide a nuanced understanding of participants' perspectives, allowing for the emergence of key themes related to their experiences, challenges, and suggestions for improving AMTSL implementation. By organizing the data into meaningful categories, thematic analysis facilitated a comprehensive exploration of the complexities surrounding midwives' roles and the barriers they face in promoting effective maternal care.

Thematic classification

Table 2 presents the thematic classification of the findings. Five themes were developed: covering knowledge, practice, experiences, and recommendations for scaling up implementation.

Familiarity with AMTSL as a PPH prevention strategy

Midwives acquired knowledge of AMTSL either from their schooling [31, 60, 64] or through on-the-job training. For instance, a quote from a participant in the study of Gowan [31] affirms this:*"The school taught us the three steps of the third stage with a toy model... through drama"* (p.54). Again, *"When they were teaching us [AMTSL]"*(p.5): a quote from a midwife as documented in the study of Schack et al. [60] from the Accra metropolis of Ghana demonstrates the integration of AMTSL as an EBP for PPH prevention in nursing and midwifery curricula. While on-the-job training provided opportunities to learn and refine AMTSL practices, Gowan [31] noted that no specific in-service training on AMTSL had been conducted, as confirmed by the hospital administrator. In spite of the "knowledge adequacy," implementing AMTSL was easier for midwives who had recently completed their midwifery programs compared to those who graduated long ago [60]. Recent midwifery graduates with easier implementation of AMTSL may underline updated training on current EBP, enhanced hands-on experience, and adaptability to modern protocols compared to those who graduated longer ago. This suggests that ongoing training and support are vital for effective AMTSL application across various experience levels.

Benefits of AMTSL in the prevention of PPH

The midwives recognized that blood loss occurs after a baby is born due to placenta separation and understood the risks associated with inadequate uterine contraction, which can jeopardize the mother's life. They were aware that practices for managing the TSL vary globally. Initially apprehensive about the AMTSL steps—administering a

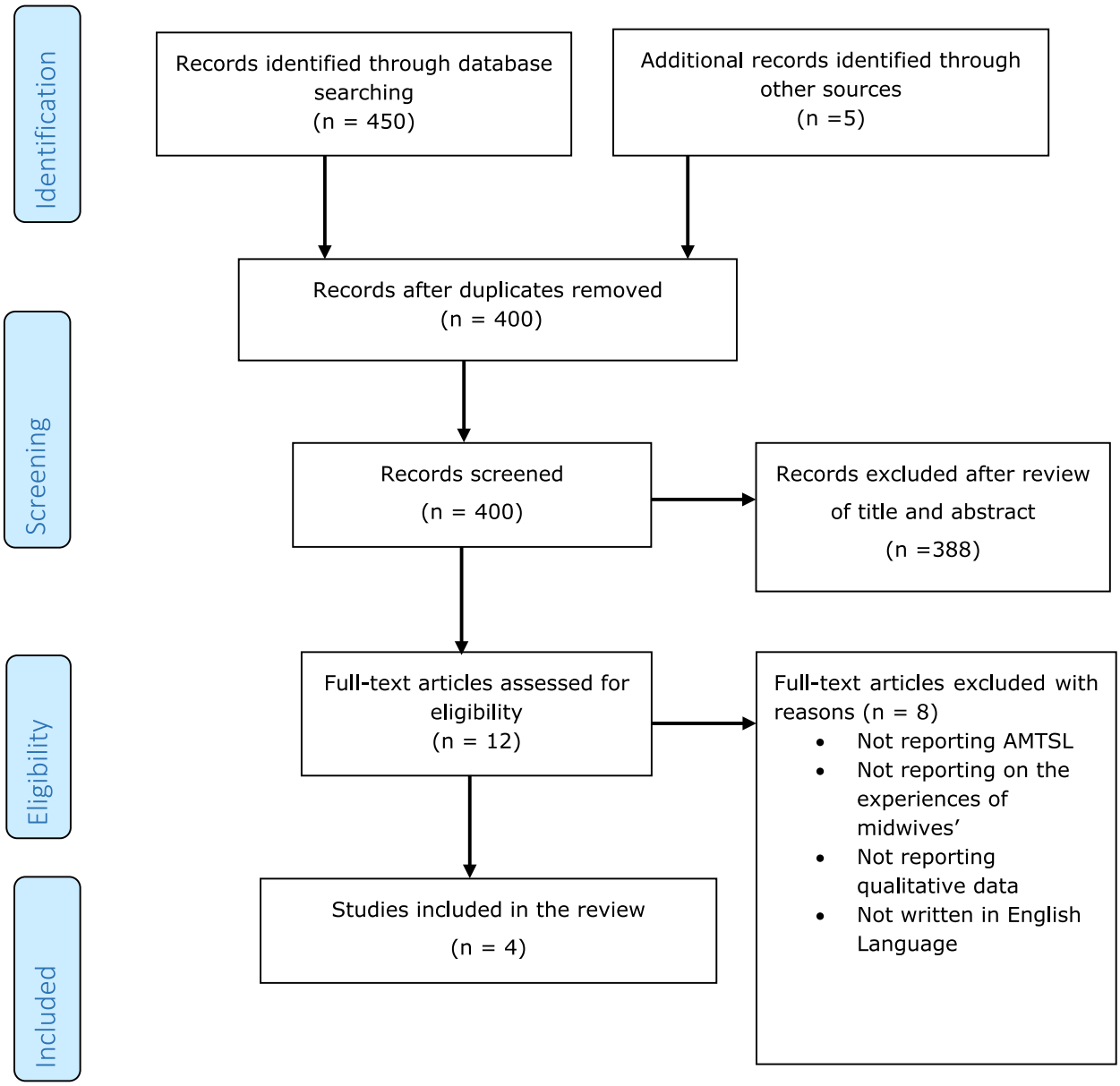

Fig. 1 PRISMA flow diagram: midwives' experiences of AMTSL. Source: Adapted from [44, 45]

uterotonic, performing CCT, and uterine massage—they found that personal experience was crucial for adopting this new approach. One midwife reflected, *"When they were teaching us [AMTSL], I felt, how could you just deliver the placenta when it is not fully separated? … So, I started to practice it and found that with this method, we did not get the PPH as we used to"* ([60], p.5). This experience underscores the importance of hands-on practice in overcoming initial doubts. That said, individual understandings and approaches to AMTSL varied among midwives, who generally believed it was more effective than expectant management in preventing PPH by reducing its incidence, the need for blood transfusions, and the risk of maternal death. One participant noted,*"I started to practice it and found that with this method, we did not get the PPH as we used to"* ([60], p.5). Additionally, midwives emphasized that using AMTSL could save time, allowing them to avoid prolonged waiting during the third stage and minimizing complications.

Experiences of midwives on the application of AMTSL

Studies examining midwives' preparations for AMTSL revealed that they prioritized administering oxytocin and performing CCT when outlining the phases of AMTSL

Table 1 Characteristics of the included studies

Authors and Year	Country and context	Aim of the study	Study methods	Participants	Summary of findings
Schack et al., 2014 [60]	Ghana Labor wards of three hospitals in the Accra metropolis	To explore midwives' experiences with the implementation of AMTSL	Descriptive phenomenological study In-depth individual interviews Purposive sampling	12 midwives (18 months to 21 years of experience)	Thematic analysis resulted in 4 main themes 1) Familiarity with AMTSL as a PPH prevention strategy 2) Benefits of AMTSL in the prevention of PPH 3) Barriers to the implementation of AMTSL in the prevention of PPH 4) How to improve the implementation of AMTSL, for the prevention of PPH
Ramavhoya et al., 2021 [57]	South Africa Midwives in primary healthcare facilities	To assess the challenges to the management of PPH in primary health facilities in rural areas	Qualitative descriptive exploratory research design Semi-structured interviews ($n=18$) Purposive sampling	18 Midwives (All between and more than 5 years of experience)	One main theme emerged from the content analysis 1) Barriers to the implementation of AMTSL
Shikongo, 2019 [64]	Namibia Four district hospitals in the Omusati region of Namibia	To gain insight into midwives' experiences on the implementation of AMTSL	Descriptive exploratory Face-to-face individual interviews and focus group discussions Purposive sampling	19 midwives (1–15 years of experience)	Thematic framework analysis resulted in 2 main themes with sub-themes 1) Experiences of midwives on the application of AMTSL 2) Challenges experienced in the implementation and practice of AMTSL
Gowan, 2015 [31]	Ethiopia AMTSL implementation in a rural regional hospital	To explore skilled birth attendants' experience in the implementation of AMTSL in a rural setting	Case study design Semi-structured interviews Purposive sampling	3 midwives 2 nurses 1 doctor (with 15 months to 6 years experience)	Thematic analysis resulted in 2 main themes 1) Experiences of midwives on the application of AMTSL 2) Challenges experienced in the implementation and practice of AMTSL

Table 2 Thematic classification

Themes	Explanation
Familiarity with AMTSL as a PPH prevention strategy	Covers how comprehensive education and in-service training empower midwives with the knowledge and skills necessary for effective implementation of AMTSL—transforming theoretical understanding into practical competence
Benefits of AMTSL in the prevention of PPH	Captures midwives' apprehensive feelings about AMTSL and its benefits: but now observe the substantial benefits, increasing their confidence in applying AMTSL increases
Experiences of midwives on the application of AMTSL	Catalogues variations with AMTSL implementation, with some consistently administering uterotonics, while others do so based on the mother's status
Barriers to the implementation of AMTSL in the prevention of PPH	Covers the barriers to implementing AMTSL, which include shortages of essential supplies and staff, leading to inconsistent practices. It also discusses workloads, which hinder midwives' ability to administer AMTSL
How to improve the implementation of AMTSL, for PPH prevention	This theme discusses ways to improve the implementation of AMTSL. It focuses on strategies to enhance midwives' performance

[31, 60, 64]. However, many midwives did not mention uterine massage as part of the AMTSL protocol, as they did not perform it. The implementation of AMTSL was often influenced by perceived maternal risk factors; for instance, midwives might deprioritize AMTSL when they believed the risk of PPH was low. One midwife noted,*"Then after oxytocin, you make sure you deliver because the oxytocin helps to contract and helps in separation of the placenta"* ([60], p. 5). Another stated,*"I never do it [AMTSL] any other way if the mother is normal. I do the three steps"* ([31], p.54). Additionally, some of the midwives applying AMTSL often report a mix of confidence and challenges. Many feel empowered by the structured approach, which includes administering uterotonics, CCT, and uterine massage to prevent PPH. However, they encounter difficulties within resource-constrained environments, where access to logistics and training can be inconsistent. Positive experiences often stem from witnessing improved maternal outcomes, while ongoing education and supportive teamwork play crucial roles in enhancing their proficiency and comfort with AMTSL practices.

Barriers to the implementation of AMTSL in the prevention of PPH

CCT and uterine massage, essential components of AMTSL were performed. They explained that CCT involves applying tension to the umbilical cord after the uterus contracts following childbirth, followed by counter pressure on the uterus until the placenta separates from the uterine wall [31, 60, 64]. One midwife stated,*"We were told to do the counter traction this way... put pressure on the uterus upwards and then start retracting the placenta"* ([60], p.6). Another noted,*"The baby comes out... and then I do CCT"* ([31], p. 55), illustrating their systematic approach to AMTSL. Some of the midwives however felt that bleeding is a natural consequence of childbirth, and regardless of whether oxytocin, a uterotonic is administered bleeding would occur.*"I would say that bleeding is an individual event, when the person will bleed she will bleed. If she wouldn't she wouldn't bleed. I don't think the administration of oxytocin is really a contributing factor to the person bleeding or not (*[60]*, p.5).*

Midwives recognized the importance of implementing AMTSL but faced significant constraints that hindered effective application. Key barriers included excessive workloads and understaffing, particularly as the number of expectant mothers increased [57, 60, 64]. One midwife stated,*"There was no time to check what the guideline says... shortage of midwives is a problem in our facility"* ([57], p. 315). Another noted,*"It is not easy to manage the women alone... using the guidelines alone, in reality, is not possible"* ([57], p. 315). This lack of staffing led to challenges in adhering to established protocols.

Beyond understaffing, the adequacy and capacity of labor rooms significantly influence midwives' ability to implement AMTSL effectively. In crowded environments, births often occur simultaneously, compromising the execution of AMTSL. One midwife explained, *"About three people are pushing at the same time... sometimes the active management is not well performed"* ([60], p.6). Additionally, the mother-baby dilemma emerged as a challenge,midwives sometimes neglected to provide CCT and oxytocin when focusing on stabilizing an asphyxiating infant. One midwife stated,*"You want to prioritize what to do first... this is where the midwife makes her decision"* ([60], p.6). Furthermore, communication barriers existed between inexperienced and senior midwives, with younger midwives hesitant to challenge their seniors' techniques. One commented, *"If I say, 'Don't do it*

this way…' they will feel that I was looking down at them" ([60], p.6). Logistical issues, such as the unavailability of essential drugs, also hindered AMTSL implementation, as illustrated by a midwife's experience:*"When I worked in the rural area, we didn't have oxytocin… we just pulled the placenta out"* ([31], p.57).

How to improve the implementation of AMTSL, for PPH prevention

Recommendations for improving AMTSL implementation include delegating specific tasks and engaging women in labor to enhance AMTSL practices [60]. For instance, midwives sometimes delegated the administration of oxytocin to assistants, relying on their capabilities. One midwife noted,*"If I realize she can administer the oxytocin injection… I can ask her to do that for me"* ([60], p.7). Additionally, some midwives encouraged mothers to perform uterine massage based on their condition, thereby alleviating their workload. However, midwives emphasized that successful delegation depended on clear communication and the mother's willingness, especially after a difficult delivery. Another midwife explained,*"If you tell them… they might bleed, but you see, there is some resistance"* ([60], p.7). Engaging women in shared decision-making was proffered as vital for improving health outcomes during AMTSL implementation.

Discussion

Clinical studies have robustly supported the benefits of AMTSL in preventing PPH [6, 16, 24, 46, 54], leading to its inclusion in the WHO handbook Managing Complications in Pregnancy and Childbirth [72]. The goal of this systematic review was to synthesize and assess qualitative evidence regarding midwives' experiences with the implementation of AMTSL, contrasting it with conventional expectant management. Astonishingly, only four papers [31, 57, 60, 64] met the inclusion criteria, highlighting a significant gap in qualitative research on midwives' experiences with AMTSL in SSA. The review revealed that midwives possessed adequate knowledge of AMTSL, acquired through formal education and in-service training [35, 40, 50, 67]. However, the limited transfer of this knowledge among colleagues impedes the adoption of EBP [60]. The implications of these findings highlight possible gaps in midwifery practice, as it relates to the application of AMTSL. The limited opportunities for knowledge transfer may thwart the efficacy of midwives in implementing best practices such as AMTSL. Furthermore, workplace factors like time constraints, excessive hierarchical structures, and poor organizational cultures—lack of emphasis on continuous training and collaborative practices can contribute to inconsistencies in care delivery. This situation underscores the need for addressing barriers that affect the practical application of AMTSL— a best practice for PPH prevention.

The narratives from midwives indicated that insufficient in-service training adversely affects their implementation of AMTSL [31, 60, 64]. Schack et al. [60] noted that midwives with less in-service training on AMTSL and lower personal motivation were less likely to fully engage with the intervention. This situation helps explain the varied applications of AMTSL reported by previous scholars [1, 28]. The importance of ongoing training is further underscored by the doubtfulness some midwives exhibit regarding AMTSL's effectiveness in preventing PPH [31, 60, 64]. In low-resource settings, like SSA, the lack of training may lead to the unjudicious use of personnel, as midwives may not be equipped to perform their roles effectively, potentially compromising patient care. The lack of in-service training as a barrier to AMTSL implementation speaks to a significant gap in continuing professional development for midwives. Such a deficit would lead to inconsistencies in practice and result in compromised quality of maternal health care. Moreover, without regular training, midwives might find it difficult to keep up with the latest evidence-based practices, which would affect both their confidence and competence. This may finally lead to suboptimal maternal and neonatal outcomes, which further shows the importance of continuing education in nursing practice.

Midwives demonstrated considerable knowledge about AMTSL benefits, focusing primarily on oxytocin administration and CCT [31, 60, 64]. They reported administering 10 IU of oxytocin intramuscularly within a minute of childbirth, aligning with findings from other studies [5, 55]. Oxytocin, a uterotonic that enhances uterine contractions, is administered immediately after the baby's shoulder delivery, which may reduce blood loss and the need for additional uterotonics [5, 55]. Cochrane systematic reviews and meta-synthesis [46, 53, 69] and randomized controlled trials (RCTs) [6, 24, 54], supports the notion that oxytocin administration lowers PPH risk compared to placebo. Furthermore, Molla et al. [46] argued that the low incidence of PPH cannot solely be attributed to early cord clamping or CCT. CCT is vital for expediting placenta delivery, particularly in overcrowded labor wards. Given that CCT and uterine massage are essential for managing retained placenta or uterine atony [27, 32, 71], ongoing training should encompass all AMTSL components.

Despite the significant benefits of AMTSL, midwives reported that some steps were not fully executed. For instance, certain midwives did not perform uterine massage [31, 60], and perceived risks to the mother influenced the application of specific steps [31, 60]. Research has led to evolving recommendations for AMTSL, with

FIGO and ICM endorsing uterine massage, while the WHO considers it optional [13]. However, variations in national guidelines across SSA may affect the inclusion of uterine massage in practice, indicating possible gaps in knowledge or its perceived significance [60]. The little mention of uterine massage as part of AMTSL by midwives may mean that it is held in belief to be ineffective, coupled with time constraints and heavy workloads that discourage its implementation. This lack of practice may also stem from limited knowledge of the benefits of uterine massage, which has meant that opportunities to enhance maternal safety are being missed. Such gaps in knowledge and practice not only put the effectiveness of AMTSL at risk but also reveal a need for comprehensive training that would ensure all components, even the optional ones, are well addressed in midwifery practice.

The review also highlighted barriers affecting AMTSL implementation, notably high workloads and time constraints [57, 60, 64]. In SSA, a critical shortage of healthcare workers exacerbates these issues, with fewer than 20 nurses per 10,000 people in many countries [21]. This understaffing often leads midwives to skip AMTSL steps, especially when faced with late admissions and the unavailability of essential medications like oxytocin [18, 30, 46, 55]. Consequently, patients might have poor outcomes due to rushed or incomplete care—a situation with adequate staffing could improve.

Midwives often prioritize the life of the newborn over AMTSL, especially when emergencies arise, which can lead to neglecting AMTSL procedures [60]. Similar findings in Dar es Salaam, Tanzania, indicated that simultaneous emergencies increased the likelihood of improper AMTSL application, attributed to staffing shortages [56]. Both maternal and neonatal lives are equally crucial,thus, improving staffing in health facilities is vital. To enhance the midwifery profession, it is essential to establish desirable training, favourable working conditions, adequate remuneration, and effective staff retention strategies [18, 19, 38, 49]. Addressing spatial disparities in service conditions can help mitigate the urban migration of health workers. Healthcare administrators must create supportive workplaces that improve performance and provide midwives with the necessary tools, supplies, safety equipment, and social support. Furthermore, fostering positive workplace relationships can enhance information exchange and decision-making [12, 47, 66, 68]. However, the review noted weak interpersonal relationships among midwives, with junior staff fearing repercussions for correcting seniors [60]. To address this, health facility managers should implement effective communication mechanisms. Lastly, national policies should promote AMTSL, ensuring the availability and proper storage of high-quality oxytocin [31, 64].

Strength and weaknesses

The review's strengths include its adherence to the PRISMA guidelines, ensuring a systematic and transparent approach to analyzing midwives' experiences with AMTSL. It effectively addresses a significant gap in the literature regarding AMTSL practices in SSA, providing valuable insights for evidence-based midwifery. However, weaknesses include the limited number of studies included, which may affect the generalizability of the findings. Additionally, the variability in study designs and contexts may restrict the depth of understanding regarding the challenges and facilitators of AMTSL implementation among midwives.

Conclusion

In this systematic review of the experiences of midwives on the implementation of AMTSL in SSA, we found that although knowledge regarding AMTSL is adequate—partly through education and in-service training, opportunities for sharing with colleagues were limited. Similarly, workload and logistical challenges hinder its effective implementation. Our findings underscore the critical role of midwives in implementing AMTSL to reduce PPH and enhance maternal health outcomes. While midwives demonstrate competence in key AMTSL processes, challenges persist that hinder full adherence to all recommended practices. Addressing these barriers is essential for maximizing the effectiveness of AMTSL. The recommendations emphasize the necessity for ongoing professional development—through in-service training. Additionally, structured mentorship programs and dedicated time for training within the workplace to facilitate the sharing of knowledge and skills are required. More so, improved labor room conditions and increased midwifery staffing to support comprehensive care must be pursued. Furthermore, fostering a collaborative environment for idea exchange and involving women in decision-making is vital for successful AMTSL implementation. In addition, monitoring systems should be established to enforce adherence to protocols, particularly in settings where such systems are lacking. Moreover, to ensure continuous implementation, there is a need to demonstrate the advantages of uterine massage in large-scale RCTs, and harmonization of FIGO/ICM and WHO protocols is essential. By prioritizing these initiatives, the healthcare community can significantly advance maternal health and reduce PPH incidence globally.

Abbreviations

AJOL	African Journals Online
AMTSL	Active Management of the Third Stage of Labor
CCT	Controlled Cord Traction
CINAHL	Cumulative Index to Nursing and Allied Health Literature
DOAJ	Directory of Open Access Journals
EBP	Evidence-Based Practices

FIGO	International Federation of Gynecology and Obstetrics
HICs	High-Income Countries
ICM	International Confederation of Midwives
LICs	Low-Income Countries
LMICs	Lower Middle-Income Countries
MMR	Maternal Mortality Rate
PPH	Post-Partum Hemorrhage
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCTs	Randomized Controlled Trials
SSA	Sub-Saharan Africa
TSL	Third Stage of Labor
WHO	World Health Organization

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Authors' contributions
ED conceived and implemented the study. Acquisition of data and interpretation of data was done by AKM. Both ED and AKM were involved in the study design, data cleaning, analysis, and drafting of the manuscript. All authors read and approved the final manuscript.

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Data availability
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Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
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Competing interests
The authors declare no competing interests.

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