Midwives' Perspectives on Digital Micro-Learning for the Active Management of the Third Stage of Labour: A Qualitative Study

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Abstract

Background: Postpartum haemorrhage (PPH) remains a leading cause of maternal mortality, particularly in low-resource settings. Active Management of the Third Stage of Labour (AMTSL) is a critical intervention for reducing PPH, yet midwives in underserved areas often face challenges accessing updated, practical training.

Objective: This study explored midwives' perceptions of a digital micro-learning video intervention (m-AMTSLV) on AMTSL and its effectiveness in improving knowledge and clinical practice in southern Jordan.

Methods: A qualitative descriptive design involving semi-structured interviews with 13 midwives from two government hospitals was used. Purposive sampling was used to recruit midwives who had completed the m-AMTSLV intervention, worked full-time on labour and postpartum units, and had direct care of childbirth. Data were analysed using thematic analysis based on Braun and Clarke's six-phase framework.

Results: Four major themes emerged. Theme 1: effectiveness of Digital Learning in Real-World Practice, subtheme 1: realistic simulation that boosted clinical confidence and improved maternal care outcomes, and subtheme 2: flexible, self-paced access via phone without disrupting work or family duties. Theme 2: suitability for remote and low-resource settings, subtheme 1: addressing training gaps, and subtheme 2: practical Implementation without advanced tools. Theme 3: user-centred design and language accessibility, subtheme 1: preference for Arabic or bilingual content, and subtheme 2: engaging scenario-based videos. Finally, theme 4: technical and logistical

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challenges, subtheme 1: internet connectivity issues, and subtheme 2: limited access to traditional training opportunities.
Conclusion: The m-AMTSLV intervention was perceived as effective, accessible, and relevant for enhancing midwives' clinical competence in managing PPH, particularly in areas with limited resources. Integrating such micro-learning tools into national midwifery education strategies could strengthen maternal care outcomes in underserved settings.

Keywords: postpartum haemorrhage; midwifery; education; digital micro-learning; qualitative research

Introduction

Postpartum haemorrhage (PPH) is still a major leading cause of maternal deaths worldwide, accounting for close to 27% of all maternal deaths, according to the World Health Organisation (WHO 2023). The WHO has estimated that 810 women die daily due to avoidable complications during pregnancy and childbirth, and that 99% of these deaths are in developing nations (WHO 2023). Severe blood loss of more than 1000 mL within the first 24 hours after birth occurs in 1–6% of deliveries globally and, if left unmonitored, leads to potentially fatal complications (Ngawa 2022). The most common causes of PPH, such as atony, trauma, retained placenta, and coagulopathy, must be managed on time and by experienced staff, especially in low-income settings where advanced medical care might not be available (Almutairi 2021).

Active management of the third stage of labour (AMTSL) is an effective, evidence-based practice that effectively lowers the occurrence of severe PPH by 60–70% (Gelaw et al. 2023). WHO, the International Federation of Gynaecology and Obstetrics (FIGO), and the International Confederation of Midwives (ICM) recommend AMTSL, which includes the immediate administration of uterotonics, controlled cord traction (CCT), and uterine massage to encourage contraction and reduce blood loss (Kundu and Jana 2021). In most situations, its effectiveness depends on the proficiency of the birth attendant, the midwife. Research has confirmed that poor training, lack of access to continuing education, and material limitations weaken midwives' capacity for effective and consistent implementation of AMTSL (Ningtyas and Ainiyah 2022; Mwakawanga et al. 2023).

In Jordan, the Maternal Mortality Ratio (MMR) has shown extreme instability, increasing from 32.4 per 100,000 live births in 2019 to 85.2 in 2021, with PPH recognised as a significant factor in these deaths (Jordan Ministry of Health (JMOH) 2021). The issue is particularly critical in southern Jordan, where hospitals are understaffed, geographically remote, and frequently under-equipped. Although AMTSL is required in the Ministry of Health clinical protocols, most midwives in the institutions report knowledge gaps and practical issues that hinder its effective implementation (Araj and Chappy 2017).

In response to these challenges, micro-learning, a brief, targeted digital learning module, has emerged as a promising approach for teaching evidence-based, time-critical procedures to healthcare professionals. Micro-learning is flexible, has good retention, and is accessible, making it especially suitable for busy midwives in low-resource or rural areas (Weeks 2025; Roth et al. 2022). However, evidence from research indicates the effectiveness of micro-learning among healthcare professionals (Roth et al. 2022; Weeks 2025). There is still limited knowledge in the literature about midwives' perception of the effectiveness of digital micro-learning, especially in low-resource environments, such as how they undertake AMTSL protocols. This study investigates midwives' perceptions of the effectiveness of the micro-learning Active Management of the Third Stage of Labour Video (m-AMTSLV) intervention in enhancing their knowledge and practice regarding the AMTSL. The study also explores the interactions between the midwives and the programme utilised in the underprivileged southern regions of Jordan, the transfer of skills learnt, and midwives' perceptions about the programme's impact on maternal care outcomes. By taking into account midwives' actual life experiences with digital learning technologies and analysing them, this study seeks to inform the development of large-scale, context-specific training programmes that can reduce maternal deaths due to PPH.

Method

Research Design

The study employed a descriptive exploratory qualitative design, incorporating semi-structured interviews, to gather midwives' perceptions and understanding of the micro-learning m-AMTSLV intervention. This was to gain insight into the contextual, practical, and emotional context of implementing digital microlearning in clinical midwifery practice. Descriptive qualitative exploratory techniques are particularly valuable in healthcare in analysing intricate human actions and decision-making processes that might be lost to quantitative studies (Whitehead 2020).

Setting

The study was conducted in two government hospitals in Jordan's south, Al-Karak Governmental Hospital and Ma'an Governmental Hospital. These were chosen based on their high maternal death ratios and their essential role in local maternity services (JMOH 2021). Interviews were conducted in calm, private meeting rooms within the maternity units to ensure comfort, confidentiality, and undisturbed conversations.

Population

The target population consisted of all registered midwives working full-time in labour and postpartum units in public sector hospitals in southern Jordan. For the study, midwives from Al-Karak Governmental Hospital and Ma'an Governmental Hospital were invited to participate due to the hospitals' high maternal mortality ratios and their critical role in local maternity services.

Sampling and Recruitment

Purposive sampling was employed to recruit midwives who had completed the m-AMTSL intervention, were full-time employees providing direct childbirth care, and expressed willingness to participate in semi-structured interviews. The Director of Nursing in each hospital served as the gatekeeper, facilitating communication between the researcher and potential participants to ensure that only eligible midwives were approached.

A total of 13 (n=13) midwives participated in the qualitative phase, representing varied clinical and geographical settings in southern Jordan. Recruitment continued until data saturation was achieved after the 13th interview, at which point no new codes or themes emerged from the data (Creswell and Poth 2016). The final sample reflected a range of professional experiences, ensuring adequate representation of perspectives related to digital learning and midwifery practice.

Data Collection Method

Information was gathered using semi-structured interviews conducted in the participants' local language, Arabic. The open-ended interview guide was developed in English based on the literature review and research aims (Appendix A) and then translated into Arabic for data collection. The Arabic version was back-translated into English by bilingual experts to ensure accuracy and consistency of meaning. The guide included an opening statement to welcome participants and explain the purpose of the interview, ensuring they felt comfortable sharing their experiences. The main questions focused on five areas: (1) overall experience and relevance of the micro-learning video to daily practice, (2) accessibility and practicality of using training videos, (3) suitability of the training for low-resource or remote work environments, (4) design and language preferences of the materials, and (5) suggestions for future use or improvement of digital learning for midwives. Probes accompanied each main question to facilitate detailed responses and explore specific aspects of clinical relevance, confidence, usability, and implementation challenges. A closing prompt allowed participants to provide additional insights.

Basic sociodemographic variables were also collected from the 13 participating midwives, including age, hospital setting, educational level, professional qualification, years of experience as a midwife, years of experience in the labour ward, and prior obstetric care training. These variables provided context for understanding participant perspectives and ensured transparency in sampling and recruitment. Individual face-to-face interviews, lasting approximately 30–45 minutes, were conducted with each of the 13 participating midwives. All interviews were audio-recorded after obtaining signed informed consent. The facilitator maintained neutrality, encouraged each participant to share their perspectives fully, and allowed the conversation to unfold naturally. Field notes were also taken to capture non-verbal cues and contextual factors.

Data Analysis

All the audio files were transcribed word for word into Arabic and cross-checked with the research team to ensure accuracy. The data were analysed thematically using inductive thematic analysis and Braun and Clarke's (2006) six-phase process: familiarisation with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Clarke and Braun 2017). Coding was initially done manually before the NVivo software was used to organise data systematically. Two additional qualitative independent researchers checked the coding and themes emerging for rigour and consistency. Differences were resolved through discussion and consensus.

Trustworthiness

To establish methodological rigour, the research ensured credibility, dependability, confirmability, and transferability, as described by Lincoln and Guba (Guba and Lincoln 1994). Credibility was improved through member checking, where participants read and authorised the transcripts and thematic accounts. To enhance the credibility of the findings, data were collected from midwives across both Al-Karak Governmental Hospital and Ma'an Governmental Hospital. This triangulation across multiple hospital settings allowed for capturing diverse perspectives and experiences within different clinical contexts. Dependability was sustained through an open audit trail by a standardised interview procedure and a clear record of methodological choice. Confirmability was supported through researcher reflexive journaling, peer debriefing, and verbatim participant quotations to support findings. Transferability was facilitated by providing rich descriptions of the research setting, participant information, and analytic process so that readers can determine relevance to their own contexts.

Ethical Considerations

The study was ethically approved by the Institutional Review Board of the XX and the XX. All participants were provided with a clear explanation of the study's purposes, procedures, and rights, including the right to withdraw at any time without penalty. Informed written consent was obtained from participants for audio recording and participation. Confidentiality of participants was ensured using anonymised codes and secure, encrypted storage of audio recordings and transcripts. Participants were not financially compensated, but they were valued and appreciated for volunteering and for providing helpful data.

Results

A total of 13 midwives participated in the study from two hospitals: Ma'an Governmental Hospital (n = 5) and Al-Karak Governmental Hospital (n = 8). Participants' years of experience as midwives ranged from one to 10 years, with most having one to four years of professional experience. All participants were full-time

employees in labour and postpartum units and had previously completed the digital AMTSL training. Thematic analysis of the interviews with midwives revealed four main themes reflecting their perceptions of the effectiveness of digital micro-learning for training midwives to manage the third stage of labour actively. These themes are described in Table 1, with illustrative quotes from participants.

Themes and Sub-Themes Emerged from the Midwives' Interviews.

Main Theme	**Sub-Themes**
1. Effectiveness of Digital Learning in Real-World Practice	1. Realistic simulation that boosted clinical confidence and improved maternal care outcomes 2. Flexible, self-paced access via phone without disrupting work or family duties
2. Suitability for Remote and Low-Resource Settings	1. Fulfils training gaps and promotes evidence-based autonomy in limited-resource, underserved settings 2. Easily implemented without advanced tools or physician presence
3. User-Centred Design and Language Accessibility	1. Preference for Arabic or bilingual content tailored to all educational levels 2. Engaging, short videos with suggestions for more translation, interactivity, and scenario diversity
4. Technical, logistical, and accessibility Challenges of Digital Learning.	1. Internet connectivity issues in remote hospitals delayed access to videos 2. Training programmes often exclude midwives or are conducted far from their locations

1. Effectiveness of Digital Micro-Learning in Real-World Practice

Participants consistently highlighted the realism of the digital simulations and their direct impact on clinical confidence and maternal care outcomes. Integrating step-by-step procedures, voice narration, and clinical footage created an immersive experience.

> I felt like I was applying the procedures in real time, like it was a live case. After the training, I actually noticed improvement in postpartum bleeding cases I managed. (P1).

The ability to review training materials on personal phones added flexibility, allowing learning to occur without interfering with work or family obligations.

> I saved the videos on my phone. I watch them even on my way to work. I didn't have to leave my job or travel to benefit from this training. (P2).

2. Suitability For Remote and Low-Resource Settings

Midwives working in underserved or rural areas emphasised how the training addressed critical gaps where resources and professional support are often limited. The programme empowered them to make evidence-based decisions independently.

> We often work alone in delivery rooms without an obstetrician or gynaecologist present. These steps became part of my routine practice and helped prevent complications before they happened. (P3)

Moreover, the simplicity and practicality of the protocol made it easy to implement in settings with limited equipment.

> This training can be applied to every mother and doesn't need special tools. That's exactly what we need here. (P4)

3. User-Centred Design and Language Accessibility

Many participants strongly preferred Arabic or bilingual content to enhance understanding and memory retention, particularly midwives with diploma-level education.

> Even though I understand English, having the videos in Arabic would help me focus better and remember the clinical points more easily. (P3).

The design of the training is commended for being concise, engaging, and free from information overload. Some midwives proposed enhancements, including translation, interactivity, and the inclusion of more clinical scenarios.

> I'd love to see more topics like this with short, clear videos that reflect our real-world cases. (P5).

4. Technical, Logistical, and Accessibility Challenges of Digital Learning

Despite the overall enthusiasm, a few challenges were identified. Poor internet connectivity in remote hospitals occasionally delayed access to the videos.

> The only issue I faced was the weak internet connection in the maternity unit, so I downloaded the videos at home. (P1).

Participants also noted that formal training opportunities are often geographically and professionally inaccessible to midwives.

> Most workshops are in the capital and aimed at nurses or doctors. We midwives are usually left out unless we participate on our own time and expense. (P4).

Discussion

This study explored midwives' perceptions of a micro-learning video intervention on the m-AMTSLV and its role in improving knowledge and clinical practice in southern Jordan. The thematic analysis provided rich insights into how digital micro-learning, particularly via mobile devices, can address existing gaps in maternal care training, especially in underserved and low-resource regions. Four core themes emerged: effectiveness of digital learning in real-world practice, suitability for remote and low-resource settings, user-centred design and language accessibility, and technical, logistical and accessibility challenges of digital learning. These themes not only reflect participants' experiences but also highlight the broader potential and limitations of digital micro-learning in maternal healthcare.

The first theme emphasised the effectiveness of digital learning in real-world clinical practice. Participants described the m-AMTSLV as highly relevant, realistic, and immersive, enhancing their confidence and practical skills in managing the third stage of labour. The integration of step-by-step procedural demonstrations, clinical footage, and voice narration allowed participants to engage cognitively and emotionally, simulating real-life scenarios. Similarly, research indicates that video-based interventions improve clinical reasoning, procedural accuracy, and retention of information, particularly when aligned with Mayer's Cognitive Theory of Multimedia Learning (CTML) and Cognitive Load Theory, which advocate synchronised visual-auditory stimuli and manageable content segmentation to optimise learning (Cleary et al. 2020; Mayer 2005; Sweller 2011). Conversely, some literature cautions that video-based learning alone may not lead to sustained behavioural change or skill acquisition without hands-on reinforcement, mentorship, or supervised practice, suggesting the importance of hybrid learning approaches (Morgado et al. 2024). This aligns with participants' own reflections, as several noted that applying the skills in real clinical situations consolidated their learning and improved outcomes, such as the management of postpartum haemorrhage, which remains a leading contributor to maternal mortality in low-resource contexts (Yang et al. 2025).

The second theme highlighted the suitability of the intervention for remote and low-resource settings. Midwives working independently or without direct supervision emphasised that the training empowered them to apply evidence-based AMTSL protocols safely, addressing gaps in local training. The intervention's low reliance on advanced equipment and its adaptability to varied clinical contexts demonstrate practical feasibility. Similarly, a previous study shows that well-trained midwives can manage third-stage labour safely in resource-limited settings, improving maternal outcomes (Sirisomboon et al. 2024). Nonetheless, some studies argue that the effectiveness of digital training may depend on the baseline experience of the practitioners and the presence of supervisory support, highlighting that technology cannot completely replace traditional in-person training (Hartzler et al. 2023; Hilty et al. 2021). These contrasting perspectives underscore the importance of combining digital micro-learning with practical mentorship and institutional support to maximise its impact.

The third theme addressed user-centred design and linguistic accessibility. Participants expressed a strong preference for Arabic or bilingual content, highlighting that native-language instruction facilitates understanding, retention, and confidence in applying new skills (Pottle 2019). In addition, concise, scenario-based, and visually engaging videos were appreciated for their cognitive and motivational benefits, including the promotion of curiosity and sustained attention (Nikkhoo et al. 2023; Kossen and Ooi 2021). The participants' feedback also suggested areas for improvement, such as enhanced interactivity, additional clinical scenarios, and translation options to tailor further learning to diverse educational backgrounds. However, other studies note that overly simplified micro-learning modules can risk omitting critical clinical details, potentially limiting the depth of learning and application in complex situations (Monib, Qazi, and Apong 2025; Boumalek et al. 2025). Thus, while micro-learning is effective for rapid skill acquisition, careful content design is essential to ensure clinical comprehensiveness.

The fourth theme captured technical, logistical, and accessibility challenges. Participants reported issues such as limited internet connectivity, especially in geographically isolated hospitals, which delayed access to the training videos. This reflects broader structural inequities in digital infrastructure that impede equitable access to educational resources in low-resource healthcare settings (Were 2022; King'ori 2024). Participants also described exclusion from formal training programmes, which are often designed for physicians and conducted in urban centres, further marginalising midwives in continuing professional development. Similar observations have been reported in other low-income contexts, where midwives face systemic barriers to formal education despite being primary providers of maternal care (Mohammed and Abdulaziz 2024). Contrasting evidence suggests that these challenges can be partially mitigated when digital interventions are combined with organisational support, such as scheduled sessions, peer mentoring, and downloadable content (Pietrantoni et al. 2024; Hill et al. 2021). Addressing these infrastructural and policy-

related barriers is critical for ensuring the long-term effectiveness of digital learning interventions.

Overall, the findings demonstrate that the m-AMTSLV intervention enhanced midwives' confidence, knowledge, and clinical performance, particularly in managing postpartum haemorrhage. Participants valued the realism, flexibility, and user-centred design of the videos, while also identifying limitations such as digital access issues and exclusion from formal training programmes. The study underscores that mobile micro-learning interventions hold substantial promise for improving maternal care in low-resource and remote settings, provided they are integrated with supportive institutional policies, appropriate mentorship, and investment in digital infrastructure. Future research should explore hybrid models that combine digital learning with practical skills reinforcement and assess long-term outcomes on maternal morbidity and mortality.

Implications

This study reinforces the potential of micro-learning as a transformative approach to midwifery education in underserved contexts. The findings validate the importance of integrating m-AMTSL Video-type modules into structured continuing education programmes and national midwifery curricula. By promoting skill acquisition, confidence, and evidence-based autonomy, digital micro-learning can significantly improve maternal care outcomes, especially where traditional education pathways are inaccessible.

However, technological solutions must be accompanied by policy-level interventions that ensure inclusivity and equity. Ministries of health and academic institutions must prioritise midwife-specific content, expand Arabic-language offerings, and invest in digital infrastructure to support universal access. Moreover, as the results highlight, midwives should not be peripheral training recipients but central stakeholders in shaping maternal health services and education.

Conclusion

This qualitative study confirms that mobile-based micro-learning is an effective, accessible, and context-sensitive tool for enhancing midwives' knowledge and practice in AMTSL. Grounded in established learning theories and supported by contemporary evidence, the m-AMTSLV intervention bridges the gap between global clinical standards and the realities of practice in low-resource environments. While the benefits are evident, systemic barriers, such as digital inequities and training exclusion, must be addressed to unlock the full potential of such innovations. By embedding micro-learning into national strategies and ensuring midwives' full inclusion, health systems can move closer to achieving equity and excellence in maternal care.

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Appendix A

Semi-Structured Interviews

Section A: Demographic and Experience Characteristics

Q1. What is your age in years?

A. <25

B. 25–35

C. 36–44

D. 45 and above

Q2. Which hospital setting are you working in?

Ma'an Governmental Hospital

Karak Governmental Hospital

Q3. What is your highest level of education?

A. Certificate

B. Diploma

C. Bachelor

Q4. What is your professional qualification?

A. Registered midwife

B. Registered nurse midwife

C. Any other specific……

Q5. How many years of experience as a midwife?

A. Less than one year

B. 1–4 years

C. 5–10 years

D. 11–15 years

E. 16–20years

F. >21 years

Q6. How many years have you worked in a labour ward setting?

A. Less than one year

B. 1–4 years

C. 5–10 years

D. 11–15 years

E. 16–20years

F. >21 years

Q7. Have you ever been trained on the following?

A. yes

B. no

If yes (Tick all training attended)

A. AMSTL-Active management of the third stage of labour

B. PMTSL-Physiological management of the third stage of labour

C. BeMOC-Basic emergency obstetric care

D. CeMOC-Comprehensive emergency obstetric care

Interview Guide: Midwives' Perceptions of Digital Micro-Learning for AMTSL

Opening Statement:

"Thank you for taking the time to participate. This interview explores your experiences with the micro-learning video on the Active Management of the Third Stage of Labor (AMTSL). Your insights will help improve future training for midwives. Please feel free to express your honest opinions."

Main Question 1:

Can you describe your overall experience with the AMTSL micro-learning video and how realistic or relevant it felt to your daily practice?

Probes:

Did the videos reflect actual clinical situations you encounter?

How did the training influence your confidence or ability to manage the third stage of labour?

Can you share examples where it improved care or patient outcomes?

Main Question 2:

How did you find the accessibility and practicality of using the training videos in your daily work?

Probes:

How convenient was it to access the videos on your phone?

Did it fit well with your work and personal responsibilities?

Were there any challenges related to internet access or downloading?

Main Question 3:

How suitable do you think this digital training is for your work environment, particularly in low-resource or remote settings?

Probes:

Did it support you when working independently without physician assistance?

Was it easy to apply the content without advanced equipment?

Does it fill existing training gaps for midwives in your region?

Main Question 4:

What are your opinions on the design and language of the training materials?

Probes:

Was the language clear and easy to understand?

Would you prefer Arabic, English, or bilingual content?

Were the videos engaging, and what could be improved (e.g., translation, interactivity, variety)?

Main Question 5:

What are your thoughts on the future use or improvement of such digital learning approaches for midwives?

Probes:

How does this compare with other training opportunities you've had?

Are midwives usually included in such programmes in your hospital or region?

What suggestions do you have for improving this learning format or expanding it to other topics?

Closing Prompt:

"Is there anything else you would like to share about your experience with the micro-learning video or its impact on your practice?"