

The perceptions of Midwives regarding the use of telehealth. A systematic review of qualitative research

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World Journal of Biology Pharmacy and Health Sciences, 2023, 16(01), 008–015

Publication history: Received on 22 August 2023; revised on 28 September 2023; accepted on 01 October 2023

Article DOI: <https://doi.org/10.30574/wjbphs.2023.16.1.0411>

Abstract

Introduction: Telehealth, originally designed to serve rural and remote areas, is now increasingly utilized in urban centers. Various medical specialties widely employ it. However, its use in midwifery remains limited. The purpose of this particular study is to elucidate the perspectives of midwives regarding the utilization of telehealth resources.

Methodology: A systematic review of the electronic database PubMed was conducted to identify qualitative studies pertaining to midwives' perspectives on the use of telehealth. A critical assessment of the selected studies was performed.

Results: Four studies met the inclusion criteria. Telehealth modalities can complement private encounters between midwives and women during pregnancy, in the latent phase of labor, and in the postpartum period. Barriers to the integration of these technologies include midwives' lack of familiarity with them, issues related to data security, workplace organization, and the way of implementation of these technologies.

Discussion: Midwives acknowledge the potential offered by modern telehealth technologies. However, legal considerations and midwives' training to familiarize them with these technologies should be taken into account.

Keywords: Midwife; Telehealth; Teleconsultation; Systematic review

1. Introduction

The rise in the average age of the population has led to increased healthcare costs. For this reason, governments are focusing on providing quality healthcare services at a low cost. Although telemedicine initially began with the use of telephones, it now encompasses a wide range of modern communication methods. Modern telemedicine technologies have been transferred to internet-based platforms, which offer two significant advantages:

- The ability to distribute knowledge quickly and without boundaries.
- Low cost [1].

The World Health Organization defines telemedicine as "the delivery of healthcare services where patients and healthcare professionals are located in remote areas. Telemedicine uses information and communication technologies for the exchange of diagnosis and treatment information for diseases and injuries, research and evaluation, and for the continuous education and training of healthcare professionals" [2]. In the 21st century, mobile phones have been integrated into telemedicine services. Mobile phone applications aim to provide:

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- Information for individuals to adopt healthy habits such as diet, weight management, and smoking cessation.
- Medical care, such as monitoring blood sugar levels in diabetes care [3].

However, the quality of these applications in terms of information provision is often questioned since many times they are not recommended by an official authority, or healthcare professionals do not always participate [4].

In this study, following the example of the World Health Organization, the term "telehealth" will be used instead of "telemedicine." Telehealth is a broader term that encompasses various services, such as teleconsultation (videoconferencing), videocalls, virtual visits, and remote monitoring.

Weight control, blood pressure measurement, and fetal heart rate monitoring are part of routine pregnancy monitoring. In the United States, digital visits have already been added to routine prenatal care for low-risk pregnancies [5]. This results in a reduced number of in-person visits, saving time and money for pregnant women and their families as they avoid transportation expenses [6].

High-risk pregnant women often need hospitalization for further monitoring, which can be a stressful process. Monitoring blood pressure and fetal heart rate at home allows these women to stay in their familiar environment [7]. Moreover, it appears to contribute to cost savings without compromising the health of the mother and fetus [8]. The study by Lanssens et al. (2017, 2018) reports significant clinical findings: in the group of pregnant women monitored at home, spontaneous onset of labor was more likely to occur, and induction of labor was less likely than in the control group [9,10].

Empowering pregnant women with more responsibilities, such as measuring vital signs, seems to provide them with a deeper understanding of their pregnancy, particularly in the case of multiparous women [11].

Despite the potential of telehealth, its application in clinical practice is limited. Before implementing these services, it is crucial to research and highlight the perspectives of the ultimate recipients of these services, namely women and healthcare professionals [12]. The purpose of this specific study is to elucidate the midwives' views on the use of telehealth services.

2. Material and methods

The systematic literature review was conducted following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for qualitative studies. The literature search was performed on the electronic database PubMed to find studies that explored the opinions of midwives regarding the use of telehealth.

The complete search query in the Greek language was as follows:

"Μαί*" OR "κλινική μαί*" OR "μαί κοινότητας *" AND "τηλεϊατρική" OR "τηλε-υγεία" OR "τηλεφροντίδα" OR "τηλεδιάσκεψη*" OR "παρακολούθηση από μακριά" OR "συμβουλευτική από μακριά*"

The search in the English language was as follows:

"Midwi*" OR "Clinical midwi*" OR "Community midwi*" AND "Telehealth" OR "Telemedicine" OR "Videoconference*" OR "Telecare" OR "Remote monitoring" OR "Remote consult*"

2.1. Studies Selection and Data Extraction

To be included in the study, the research had to meet the following criteria:

- The studies had to be qualitative or mixed-method studies with qualitative content.
- The studies had to include midwives. If other healthcare professionals were also involved, the midwives' opinions had to be distinct.
- The opinions of midwives regarding telehealth services had to be related to clinical practice rather than documents.
- The studies had to be published in the English language.

2.2. Exclusion criteria

- Studies such as commentaries, newspaper articles, reports, books, protocols, expert opinions, or theses.
- Systematic reviews.

2.3. Critical Appraisal

Critical appraisal of the included studies was conducted according to the Health and Care Excellence (NICE) assessment checklist [13]. If most criteria were not met or significant flaws were identified in the study design, the rating was considered low with a minus symbol (-). If several criteria were met, but it was recognized that there might still be some errors in the study, the rating was considered moderate with a plus symbol (+). Finally, if the majority of the assessment criteria were met, and the study was deemed reliable, the rating was considered excellent with a double plus symbol (++). The critical appraisal of the studies under investigation is presented in Table 1.

3. Results

The flowchart resulting from the study selection process is shown in Figure 1. In total, three hundred and six scientific articles were identified, out of which four were included in the review. The characteristics of the studies are presented in Table 2.

3.1. Description of included studies

According to the study by Lindberg et al., teleconsultation can provide support to parents who are discharged early from the maternity ward after childbirth. It outperforms telephone calls since midwives can acquire more information regarding the health of both the mother and the newborn. The technological equipment was easily manageable with good quality audio and video. The only difficulty encountered was related to the newborn's skin color. Ensuring parents' privacy was not a problem because, on the one hand, midwives had taken the appropriate measures, and on the other hand, they relied on parents to have this control. This also indicates a shift in the relationship between healthcare professionals and parents, with the latter taking a more active role and participating in decision-making. Therefore, technology can contribute to building parents' self-confidence in their new role, especially in remote areas or when home visits are not possible. Concerns relate to workplace organization and access to technical support [14].

3.2. Flowchart of the studies

The study by Spiby et al. concerns the opinions of midwives regarding video calls in the early stages of childbirth. This study included midwives from the United States, some of whom had applied video calls in the latent phase of labor, and midwives from the United Kingdom who had not used them. According to this study, most midwives had a positive response to video calls. They believe that they can better assess whether the woman is in the latent or active phase of labor compared to a phone call, regardless of the description of contractions or whether the woman or her husband is speaking to them. Additionally, through technology, time and resources can be saved for both the healthcare system and the families of pregnant women. Furthermore, reducing unnecessary admissions to the maternity ward and childbirth during transportation will result in more positive experiences for women. Second thoughts concern legal issues, such as data protection and equality in maternity care provision because pregnant women may not have a computer or may be digitally illiterate. Moreover, midwives argue that there should be a plan before implementing video calls in clinical practice, in which they should also participate to avoid obstacles. Training in these technologies will play a catalytic role for both midwives and women. Pregnant women could receive training during the antenatal period in preparation for being parents in parenthood classes [15].

The study by White et al. examines the perceptions of midwives practicing in rural and remote areas of Scotland regarding the implementation of a monitoring system for pregnant women with pre-eclampsia using mobile phones. The toolkit includes technical equipment for measuring blood pressure, urine protein levels, and an oximeter. A mobile application with informational material for midwives and women is available on the mobile phone without the need for internet access. Providing midwifery care in rural and remote areas presents several challenges, such as weather conditions, road network conditions, and long journeys to reach hospitals. In addition to geographical isolation, there is digital isolation due to the lack of mobile phone signal, which hinders communication with colleagues, hospitals, and specialists. The inability to access the internet impedes immediate training on the latest developments in midwifery, particularly in the context of pre-eclampsia. It also complicates the interaction between midwives and pregnant women with pre-eclampsia, as visual and auditory technologies that could help inform women about the meaning of pre-eclampsia cannot be used. Despite these challenges, the midwives in this study were generally positive about integrating such an application. However, overcoming the unfamiliarity with such technologies remains an obstacle that needs to be addressed [16].

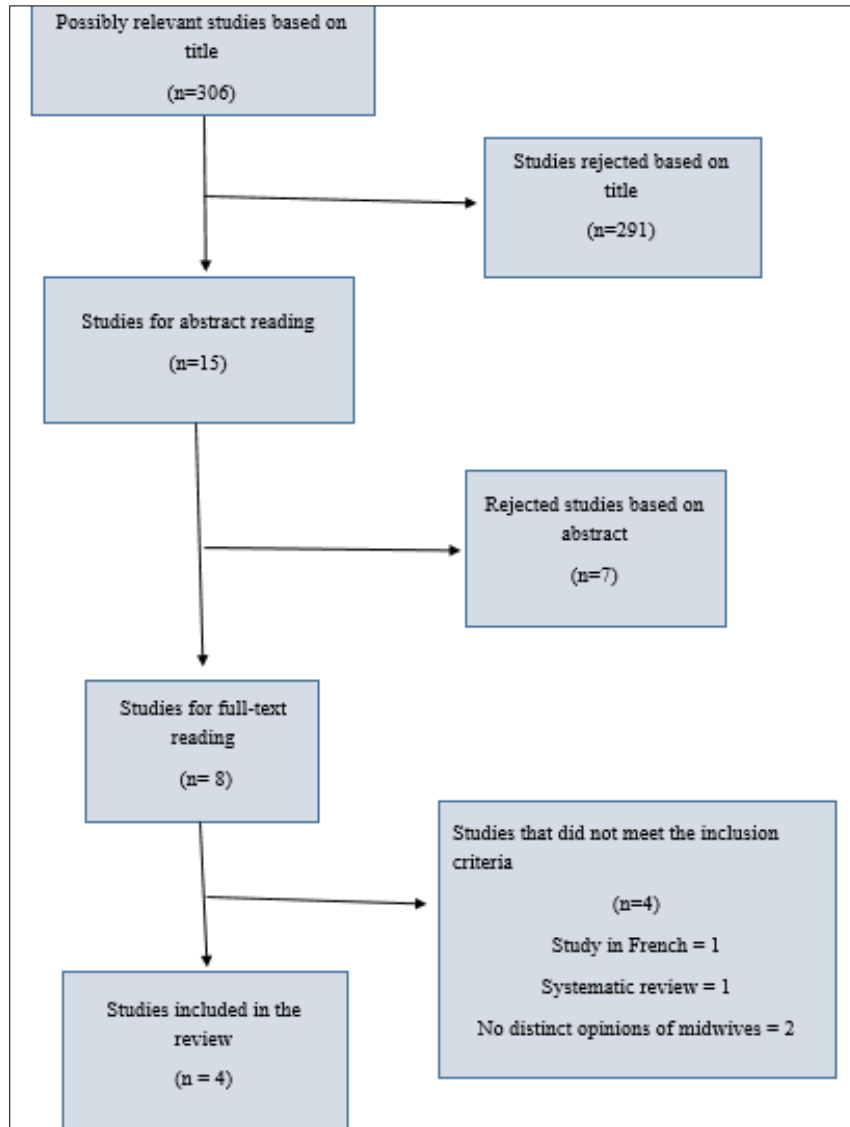


Figure 1 Flowchart of Studies

The latest study by Dalton et al. focuses on the integration of Information and Communication Technologies (ICTs) by midwives in the education of pregnant women during the antenatal period. There are four reasons that hinder midwives from incorporating these technologies into their practice:

- The computers available in hospitals are primarily used for updating electronic patient records rather than for internet access.
- Midwives' skills regarding technology. Younger midwives **are** more familiar.
- Limited time poses a deterrent for midwives to effectively train pregnant women.
- Lack of motivation.

Midwives expressed a preference for face-to-face communication with women, outright rejecting the use of social media platforms like Facebook for communication with pregnant women. For digital meetings, they would prefer platforms like Skype, while also expressing concerns about online harassment. Additionally, they questioned the reliability of many mobile phone applications. In Table 2, the characteristics of the scientific articles under study are summarized [17].

Limitations

This systematic review, while attempting to delve into midwives' perspectives on telehealth by choosing qualitative researches, nonetheless excludes significant information from studies employing quantitative characteristics.

Additionally, the samples in the included research are small and restricted, thus limiting generalizability. More studies, with a larger number of participants across all healthcare levels, are needed to draw secure conclusions. The selection of studies written in the English language represents an additional constraint.

4. Discussion

This systematic review highlights the opinions of midwives regarding the use of telehealth. Midwives seem to adopt a critical stance towards the integration of these technologies, recognizing both their advantages and disadvantages. They believe that technology can complement daily practice, much more so than telephone calls. However, under no circumstances can it replace face-to-face communication. The systematic review conducted by Penny et al. on the experiences of nurses and midwives with teleconsultation in clinical practice reaches the same conclusion [18].

The use of technology can contribute to building trusting relationships between midwives and women. Moreover, it appears to lead to a shift in the role of women and their families in making decisions about their health, as they feel greater self-confidence. As a result, the use of telehealth technologies is associated with high patient satisfaction rates [19].

Midwives' concerns revolve around the integration of these technologies into the workplace and the organization's methods, access to technical support, and legal issues such as data protection and the privacy of women. Furthermore, a factor that needs to be considered by healthcare policymakers is the participation of both midwives and healthcare professionals, as well as patients, in the design and implementation of these technologies.

It is necessary to provide midwives with education on telehealth tools at the undergraduate level, as well as training for existing healthcare personnel. According to the systematic review by Koivunen & Saranto, the behavior and skills of nursing staff potentially hinder the integration of telehealth into clinical practice. Additionally, according to Fahlman (2017), the familiarity of nursing staff with the technologies offered by mobile phones contributes to the acceptance and integration of these technologies into clinical practice [20].

Table 1 Critical Assessment of the Reviewed Articles

Assessment Checklist Questions	1	2	3	4
Is a qualitative approach appropriate?	appropriate	Appropriate	Appropriate	appropriate
Is the study clear in what it seeks to do?	Clear	Clear	Clear	clear
How defensible/rigorous is the research design/methodology?	defensible	Defensible	Defensible	defensible
How well was the data collection carried out?	appropriately	Appropriately	Appropriately	appropriately
Is the role of the researcher clearly described?	Not described	Clearly described	Clearly described	Clearly described
Is the context clearly described?	Clear	Clear	Clear	Not sure
Were the methods reliable?	Reliable	Reliable	Reliable	reliable
Is the data analysis sufficiently rigorous?	Rigorous	Rigorous	Rigorous	Not sure not reported
Is the data rich?	Rich	Rich	Rich	rich
Is the analysis reliable?	Unreliable	Reliable	Reliable	unreliable
Are the findings convincing?	Convincing	Convincing	Convincing	convincing
Are the findings relevant to the aims of the study?	Relevant	Relevant	Relevant	relevant
Conclusions	Adequate	Adequate	Adequate	adequate

How clear and coherent is the reporting of ethics?	Appropriate	Appropriate	Appropriate	appropriate
As far as can be ascertained from the paper, how well was the study conducted?	Excellent	Excellent	Excellent	Moderate

Table 2 Characteristics of the Studied Scientific Articles

Characteristics of the studies						
Authors, year, country	Purpose	Sample size	Implementation	Data collection	Results	Quality
Lindberg et al 2007 SWEDEN	The purpose of the study was to record the experiences of midwives regarding the use of teleconsultations with parents who are discharged early from the hospital	n=20	Teleconsultation	Combination of questionnaire and interviews	Teleconsultation can function as a supplement to home visits but not to replace them.	Excellent
White et al. 2019 SCOTLAND	The study investigates the opinions of midwives working in rural and remote areas, particularly regarding the implementation of a work kit in combination with a mobile phone for monitoring women with pre-eclampsia	n=18	Toolkit and mobile phone	Interviews	The innovation was generally accepted by midwives. However, unfamiliarity with these technologies is a barrier to their integration.	Excellent
Spiby et al 2019 UNITED KINGDOM AND U.S.A.	This qualitative study explores the possibility of monitoring contractions during the latent phase of labor through video calls	n=22 British women and n=27 American women	Video call	Interviews	The midwives considered that video calls would be more helpful than the telephone. Attention should be given to legal issues and ensuring access to this technology for all pregnant women.	Excellent

Dalton et al 2014 AUSTRALIA	The study aims to investigate how certain factors, particularly the lack of motivation, act as barriers to the adoption and integration of communication and information technologies	n=19	Communication and information technologies	Questionnaire and interviews	Midwives prefer in-person communication for prenatal care, rejected social media, and showed a preference for platforms like Skype. Social harassment and the reliability of mobile applications were particularly emphasized.	Moderate
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5. Conclusion

The traditional methods through which medical care is supplied have been modified in order to provide better quality healthcare services while keeping costs down. It is now vital that information and communication technology play a more active role in healthcare field. The World Health Organization defines telehealth as the provision of medical care by all healthcare professionals using information and communication technologies to exchange accurate information for diagnosis, treatment, and disease prevention in cases where distance is a critical factor. Regardless of location, health systems should provide all individuals with outstanding medical services, advanced equipment, and qualified healthcare workers, especially during a period of crisis like the one we are currently facing.

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