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Digital Health Transformation in Midwifery Care: From Mobile Apps to Predictive AI

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Backgrounds

Integrating digital tech promises enhanced care, but lacks a clear roadmap. We synthesized evidence to propose a structured adoption framework.

Methods

- Design: Systematic review (PRISMA 2020).
- **Sources:** PubMed, Scopus, CINAHL, IEEE.
- **Scope:** Pre-conception to postpartum.

2,158 records screened → 74 included.

Findings

The Digital Midwifery Care Framework

1. Mother-Enabled

Apps for tracking, education, and psychological support.

2. Remotely Monitored

Telemedicine and wearables for professional oversight.

3. Clinician-Supported

Clinical decision support systems (CDSS) for risk assessment.

4. AI-Augmented

Predictive machine learning models and automated pattern recognition.

Evidence & Implementation Barriers

Levels 1 & 2 (User-Facing)

- ✓ High patient engagement and satisfaction.
- ✓ Non-inferior clinical outcomes (low-risk cases).
- Barrier: Variable data privacy & digital divide.
- Barrier: Limited impact on hard clinical endpoints.

Levels 3 & 4 (Intelligence)

- ✓ High predictive accuracy (AUC 0.85-0.95).
- ✓ Improved clinical protocol adherence.
- Barrier: "Black-box" models limit clinical trust.
- Barrier: Alert fatigue & poor interoperability.

Conclusion

An evolutionary path from user tools to embedded intelligence.

Future Roadmap Requires:

1. Implementation Science
2. Ethical & Explainable AI (XAI)
3. Interoperable Infrastructure
4. Midwife-led Co-design

References

1. World Health Organization. WHO guideline: recommendations on digital interventions for health system strengthening. Geneva: World Health Organization; 2019.
2. 2. Alami H, et al. The challenge of integrating digital health into health systems: a systematic review of implementation science. NPJ Digit Med. 2022;5(1):1-12.
3. 3. Kennedy HP, et al. The landscape of midwifery care in the digital age: a scoping review. J Midwifery Womens Health. 2023;68(2):145-56.