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Enhancing Obstetrics and Gynaecology Training through Prompt Engineering and Digital Health Integration

Objective

This e-poster aims to explore the rapidly evolving role of Artificial Intelligence (AI) in Obstetrics and Gynaecology, with a particular focus on its capacity to enhance efficiency, clinical accuracy, and patient outcomes. The objective is to highlight practical, ethical, and innovative applications of AI across key domains including direct clinical care, administrative processes, medical research, and patient engagement strategies.

Design

This work presents a synthesis of current real-world implementations and future directions for AI integration within Obstetrics and Gynaecology. Drawing on peer-reviewed literature, national and international guidelines, and illustrative case studies, the poster provides a balanced overview of both the benefits and limitations of AI, including its ethical implications. It also offers a forward-looking perspective on how AI can be embedded into daily practice and medical education.

Method

A comprehensive review of AI applications was conducted, spanning both clinical and non-clinical settings. The scope included AI-assisted tools for:

- Personalised venous thromboembolism (VTE) risk assessments
- Prediction of surgical risks and intraoperative complications
- Optimisation of antenatal and gynaecological care pathways
- Automated documentation and patient correspondence
- AI-supported literature synthesis and research analytics
- Creation of culturally adapted, visually enhanced patient education resources

In parallel, a critical evaluation of ethical considerations such as data privacy, bias in algorithm training, clinician responsibility, and patient consent was undertaken to ensure a holistic view of AI integration.

Results

Emerging evidence and case studies show that AI-driven tools have led to tangible improvements in multiple facets of care. Notable outcomes include:

- Reduction in medication errors and enhancement in safety protocols
- Streamlined clinical workflows, reducing time spent on administrative documentation
- Improved risk stratification in high-risk pregnancies and surgical candidates
- Enhanced communication through AI-generated visual aids and tailored counselling material
- Accelerated literature reviews and improved clarity in data presentation for academic and clinical audit use

Moreover, early feedback from healthcare professionals and patients indicates a positive reception when AI is used transparently and ethically, particularly when it empowers patient involvement and clinician efficiency.

Conclusion

Artificial Intelligence is no longer a future prospect—it is an evolving force that is reshaping the landscape of Obstetrics and Gynaecology. It offers the potential to transform how we deliver care, conduct research, and engage with patients. However, responsible adoption is essential. Clinicians must remain at the centre of all AI-augmented decisions to preserve the human element of care. As we look ahead, sustained collaboration between clinicians, developers, and policymakers will be essential in refining AI tools, safeguarding patient trust, and ensuring equitable access. Ongoing research into long-term outcomes and ethical implications will further define AI's rightful place in clinical practice.

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