

The intersection of Artificial Intelligence (AI) and Maternal Health: Reg ID: 291

Niket Verma

All India Institute of Medical Sciences Bathinda

CORRESPONDING AUTHOR

Dr Niket Verma, All India Institute of Medical Sciences Bathinda

Email: drniketverma@gmail.com

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ARTICLE CYCLE

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ABSTRACT

Artificial Intelligence (AI) algorithms identify patterns and risk factors for potential complications by analyzing large datasets, thereby enabling early detection, monitoring and intervention. By supporting clinical decision-making and reducing diagnostic errors, AI can predict complications such as preeclampsia, gestational diabetes and preterm labour. AI-powered risk stratification tools categorize expectant mothers according to their risk levels and design personalized care plans tailored to individual needs. Wearables and remote monitoring technologies allow continuous tracking of maternal and fetal health parameters. Mobile health apps linked with AI-enabled wearables collect real-time data which is analyzed by AI-based platforms, enabling continuous care. This is helpful for pre- and post-natal monitoring, sending reminders for appointments or medication and issuing alerts for deviations from normal parameters. AI Chatbots provide virtual prenatal consultations and 24/7 AI-based support, improving access in remote, underserved areas and reducing dependency on in-person consultations for basic queries. AI algorithms help in identifying early signs of postpartum depression and can provide virtual cognitive behavioural therapy. Natural Language Processing tools can analyze speech and text for emotional distress during online consultations. Advanced image analysis by AI algorithms can detect abnormalities the human eye may overlook, reducing diagnostic errors. AI based genomic analysis can screen for foetal genetic conditions. Early detection of genetic disorders leads to better planning and maternal health outcomes. Real-time translation of healthcare information and consultations by AI-translation services, overcomes language barriers in multicultural or migrant communities. Developing AI-driven solutions and comprehensive maternal health monitoring systems will be crucial as the global community works towards achieving the Sustainable Development Goals related to maternal and child health. Integrating AI into global maternal health programs can significantly enhance their reach and impact, leading to improved maternal health outcomes. Governments and technology developers must collaborate to ensure accessible and effective AI solutions.

KEYWORDS