

## A Review on Leveraging Technology for Enhanced Pregnancy Care

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### Abstract

Technological advancements have the potential to revolutionise prenatal care, improving outcomes for expectant mothers and their unborn children. This comprehensive review explores the efficacy, challenges, and potential benefits of integrating User Experience/ User Interface (UX/UI), Natural Language Processing (NLP), Machine Learning (ML), and data mining in pregnancy care. The UX/UI aspect focuses on User-Centered Design, providing intuitive interfaces that cater to the unique needs of expectant mothers. NLP techniques enable the early detection of pregnancy abnormalities, allowing for timely interventions and personalised care. ML algorithms aid in predicting outcomes and identifying potential issues, empowering healthcare providers to make informed decisions. Data mining uncovers hidden patterns within large datasets, facilitating early intervention strategies and improved prenatal care. Future directions involve refining UX/UI design, incorporating domain expertise in NLP models, exploring advanced ML algorithms, and expanding data mining analysis to include diverse influencing factors. Integrating expert knowledge, personalised approaches, ethical considerations, and clinical validation is crucial. Multidisciplinary collaborations will drive the development and implementation of technology-driven solutions. The paper concludes by discussing the potential benefits of integrating technology into routine prenatal care practices, including improved access to care, enhanced patient engagement, and better health outcomes. However, it also acknowledges the challenges and limitations that need to be addressed for wider adoption of technology-driven approaches.

**Keywords:** *Pregnancy Care, Health and Wellness, User Experience/ User Interface*