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**EFFECTIVENESS OF TELEHEALTH-ENHANCED PRENATAL CARE SYSTEMS:
A SYSTEMATIC REVIEW OF REMOTE MONITORING AND VIRTUAL VISITS**

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The integration of telemedicine into prenatal care has emerged as a significant development in obstetric practice, particularly accelerated by the COVID-19 pandemic. This technological advancement presents a promising solution to address healthcare disparities, especially among Black and Latinx women and rural communities, by minimizing barriers such as transportation, childcare, and work obligations. The American College of Obstetricians and Gynecologists has endorsed telemedicine as a sustainable model for obstetric care, highlighting its potential to transform traditional prenatal care delivery.

This systematic review aimed to evaluate the effectiveness of telemedicine-enhanced prenatal care as an alternative or adjunct to traditional in-person care. The study sought to assess whether telemedicine could maintain or improve maternal and neonatal outcomes while reducing the frequency of in-person visits, with particular attention to its potential in addressing healthcare disparities.

A comprehensive literature search was conducted across PubMed, EMBASE, and Cochrane Library databases following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The initial search yielded 2,707 studies, with 2,067 remaining after duplicate removal. Studies were included if they evaluated telehealth as an adjunct to or substitute for comprehensive prenatal care, comparing outcomes with standard prenatal care. Two independent reviewers screened studies, with conflicts resolved by additional reviewers. Risk of bias was assessed using the Cochrane Collaboration's tool for randomized controlled trials (RCTs) and the ROBINS-I tool for non-randomized studies. Eight studies met the inclusion criteria: one RCT, three non-randomized cohort studies, one quality improvement study, two qualitative studies, and one active clinical trial.

The implemented telemedicine interventions included remote monitoring systems, virtual prenatal visits, smartphone applications, and community health worker involvement. Several studies demonstrated successful implementation of reduced in-person visit schedules, maintaining the quality of care through virtual visits and remote monitoring. Patient satisfaction was notably high, with 94% of participants recommending the telehealth program and 96% expressing intention for future use. The studies reported no significant differences in major maternal and neonatal outcomes between telehealth and standard care groups, including cesarean deliveries, preterm births, and birth weight. However, one study noted a higher rate of preeclampsia in the telehealth group (8.5% vs. 3.4%, $p=0.02$), though the clinical significance remained unclear. Participants in telehealth groups demonstrated lower pregnancy-related stress and higher self-efficacy.

The systematic review provides evidence that telemedicine-enhanced prenatal care can effectively reduce in-person visits while maintaining maternal and neonatal health outcomes comparable to traditional care. The high patient satisfaction rates and improved self-efficacy suggest that telemedicine could be a valuable tool in modern obstetric practice. However, the generalizability of these findings is limited by the predominance of white, college-educated participants of high socioeconomic status in the reviewed studies.

The reviewed studies were underpowered to detect significant differences in adverse maternal and neonatal outcomes. The limited diversity in study populations and moderate risk of bias in non-randomized studies necessitate further research to evaluate telemedicine's effectiveness in underserved populations and high-risk pregnancies. Future studies should focus on larger, more diverse populations and assess long-term safety and efficacy outcomes.