

Empowering Women's Health: Transformative Advances in Telemedicine

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ABSTRACT

In light of the COVID-19 pandemic and other emergencies, telehealth has become vital for improving women's health since it offers easy access to medical care. This strategy makes virtual consultations, remote monitoring, and access to expert treatment possible to address various health needs, such as mental health, chronic illness management, and reproductive health. Women are enabled via telehealth to take a more active role in their health decisions by removing obstacles associated with time and place. However, issues, including unequal access, digital literacy, and privacy concerns, must be resolved to realize its full potential. To grow these services, it will be crucial to maintain innovation and inclusivity, as this study examines the advantages, difficulties, and potential future directions of telehealth in women's health.

Keywords: Antenatal care, Postnatal care, Postpartum depression, Telemedicine.

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INTRODUCTION

The delivery of healthcare services across distances by all healthcare professionals using information and communication technologies for the exchange of valid information, for the diagnosis, treatment, and prevention of disease and injuries is how the World Health Organization defines telemedicine (TM), staying true to its roots in the Greek word "tele," which means distance.¹ Telemedicine is a fast-developing instrument used by global healthcare systems. Due to its growing acceptance, TM is now a standard component of medical practice.² With the rise in the usage of wearable technology, smartphone apps, text, and multimedia messaging services, short message or text messaging, and live audio-visual communication, technology-enhanced healthcare delivery has rapidly expanded.³ An already overburdened healthcare system faces significant challenges in providing healthcare, particularly in the wake of disasters and pandemics. "Every cloud has a silver lining." Telemedicine has proved to be a light at the end of the tunnel.⁴

Telehealth In Antenatal Care

Antenatal care aims for a healthier mom and a baby. Sufficient antenatal care is essential.⁵ The growing field of TM has emerged as an essential instrument for addressing obstetrical issues in remote and rural areas through technology. It is especially crucial in low-risk pregnancies where a physical consultation is not always necessary.⁶ Many tertiary care hospitals use TM to provide a wide range of obstetrical treatments, such as consultations with physicians specializing in maternal and fetal medicine, genetic consultations, and monitoring pregnancy-induced hypertension (PIH) and gestational diabetes mellitus (GDM).⁷ A study conducted by Mohapatra et al. revealed that 80% of the antenatal women enrolled rated that their TM experience was on par with in-person consultations. High patient satisfaction with the TM indicates that it can be implemented into standard medical care, particularly in low-resource nations like India.⁸

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Remote Monitoring

Technologies for remote monitoring should be used in place of a face-to-face examination to provide a fully virtual consultation. Wearable or portable gadgets allow for the possibility of remote monitoring. Pregnant women who use these send biometric and health data to their healthcare professionals.⁹

Blood Pressure Monitoring

Ambulatory blood pressure monitoring, or at-home blood pressure monitoring, has the potential to reduce white-coat hypertension and identify masked hypertension more accurately than in-clinic monitoring.¹⁰

Fetal Heart Rate Monitoring

The usefulness of HeraBEAT, a portable fetal Doppler that mothers can use to locate and monitor their baby's heartbeat and provide data to medical professionals in real-time, was illustrated by Porter et al.¹¹ Currently available on the market are devices called cardiotocographs.^{12,13} Melody International's iCTG is one such

gadget that has demonstrated accuracy in tracking fetal heart rate patterns in pregnancies affected by fetal growth restriction.¹⁴

Tele Ultrasound

Ultrasound tests can now be performed remotely thanks to emerging technologies. This method, called tele-ultrasound, was formerly employed in rural areas to allow novice sonographers to get remote supervision.¹⁵ The INSTINCT ultrasonography gadget was utilized by Hadar et al. It was created by PulseNmore in Ommer, Israel. With the device connected to her phone, the woman can view ultrasound scans on her phone and transmit the videos to the clinician. The first-time ultrasound users are guided by a skilled professional during their exam. Teach women where to position the device and how to move it around the abdomen with the help of an instructional video for each of the six scan segments that assess the biophysical profile.¹⁶

Monitoring of Glycemic Control

During pregnancy, one of the most prevalent conditions is GDM, which warrants continuous monitoring of blood glucose levels. When utilized in conjunction with conventional care for GDM, TM enhances perinatal and glycemic outcomes (GDM). A randomized control study done by Munda et al. showed that when compared to standard in-person care for GDM, TM treatment may be more effective and secure. GDM women in the TM group did, in fact, show decreased rates of cesarean sections and lower average postprandial glucose concentration.¹⁷

Telehealth in Post Natal Care

The postpartum period accounts for more than 50% of maternal deaths, it is a crucial phase for obstetrical care. Still, only around 60% of patients show up for a postpartum appointment. Lifestyle changes brought on by taking care of a newborn, a lack of childcare options, and a lack of transportation are a few challenges for women to attend postpartum visits. Some of these challenges might be solved by expanding access to postpartum care through telehealth. A study conducted by Arias et al. suggested that increased postpartum visit attendance and postpartum depression screening are linked to the availability of TM during the COVID-19 pandemic. On the other hand, long-acting reversible contraception and permanent sterilization were used less frequently in the TM population.¹⁸ A smartphone application or text message-based platform is used by post-delivery remote blood pressure monitoring programs to remind patients to take and submit their blood pressure readings at predetermined intervals throughout the postpartum phase, thus decreasing the risk of adverse maternal outcomes.^{19,20} A randomized trial exploring the effects of a smartphone-based platform on breastfeeding rates over time involved about 200 breastfeeding women. Lactation rates were greater among the users of the site than in controls at 6 and 12 weeks. The platform offered daily feedback and counseling from a multidisciplinary lactation team.²¹

Telehealth For Contraceptive Service

Telehealth has been advised for a range of contraceptive services since the start of the COVID-19 epidemic, including counseling, determining one's eligibility for contraceptive methods, and prescribing new methods and refills.²² Roa et al. conducted a survey among contraception providers in the United States during the COVID-19 pandemic. The delivery of contraceptive healthcare was greatly impacted by the pandemic. Although there are still

many obstacles to overcome, such as privacy concerns and limited technology access, telehealth has significantly improved access to contraception.²³

Telehealth in Postpartum Depression (PPD)

Most new mothers experience the baby blues, often called postpartum blues, which are essentially mild, temporary episodes of melancholy that pass when hormone levels stabilize. Roughly 85% of recently delivered mothers will experience postpartum depression. Common psychotherapies for PPD, including cognitive behavioral therapy (CBT), interpersonal therapy, peer support therapy, and mindfulness therapy, are clinically helpful. However, time and financial constraints, childcare concerns, and social stigma fear may prevent many women from accessing traditional face-to-face psychotherapy.²⁴ The majority of TM therapies assessed in randomized control trials (RCTs) were effective.²⁵

Limitations

Although TM has been encouraging possibilities for expanding healthcare access, there are several drawbacks, especially with regard to women's health. There is no virtual substitute for the need for physical examinations like mammograms and pelvic exams.

A bad Internet connection or frequent connectivity outages were noted as one of the main issues faced by healthcare providers who mostly used their personal smartphones to conduct telehealth services. Establishing a connection with rural women who had unreliable Wi-Fi was difficult. For both women and healthcare professionals, not having the necessary abilities to operate the software and equipment for telehealth seemed to be a big barrier. One of the biggest drawbacks of prenatal, postnatal, and neonatal consultations via video/phone conversations, according to healthcare providers, was their incapacity to conduct physical tests (such as measuring fundal height, taking blood pressure, or monitoring fetal heartbeat). The use of TM was welcomed by many physicians, but they also pointed out that many of their patients cannot afford it since they do not have the funds to buy the required technology.²⁶

CONCLUSION

Telehealth represents a transformative approach to women's healthcare, offering increased accessibility, convenience, and personalized support. By bridging geographical barriers and providing a platform for timely consultations, telehealth empowers women to prioritize their health. As technology continues to evolve, integrating telehealth into standard practices will likely enhance health outcomes and foster greater engagement in women's health issues. Moving forward, ongoing efforts to address challenges such as digital literacy and equitable access will be essential to ensuring that all women can benefit from these advancements.

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