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Impact of Telemedicine on Diabetes Management in Pregnant Women at Rural CHC, Uttar Pradesh: Apollo Telehealth

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Abstract

This study evaluates telehealth's impact on diabetes management in pregnant women at rural antenatal clinics in Uttar Pradesh. Among 63 who completed follow-up, 82% achieved glycemic control, with a 20% reduction in acute hyperglycemia. Telehealth intervention **achieved** improved perinatal outcomes, with **97.6% term deliveries** and a **lower preterm birth rate (2.4%)**. Findings highlight telehealth's effectiveness in improving glycemic control and pregnancy outcomes in resource-limited settings.

Introduction

Diabetes in pregnancy, including gestational diabetes mellitus (GDM) and pre-gestational diabetes (Type 1 & Type 2), affects **1 in 6 live births worldwide**, with **84% of cases attributed to GDM**. Poor glycemic control during pregnancy increases the risk of maternal and neonatal complications, including **preterm birth**, which contributes to **75% of neonatal mortality** and nearly **50% of long-term neurological morbidity**.

Methodology

A one-year prospective study was conducted on **71 pregnant women** with **gestational (66.1%) and pre-gestational (22.5%) diabetes**.
A **12-month pre- and post-intervention analysis** was performed on the same patients. Telehealth interventions included **specialized endocrinology and internal medicine, Diet consultations**, along with **tele-laboratory services**.
Key outcomes assessed were **glycemic control, Pre-Term births, cost-effectiveness, and patient acceptance.**

Results

- **N=71, with 8 lost to follow-up over 12 months.**
- **20% reduction in acute hyperglycemic episodes.**
- **Glycemic targets were met by 82% of participants, while 18% exhibited suboptimal control.**

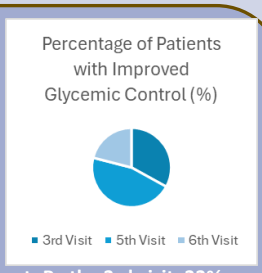

Chart- By the 3rd visit, 33% improved; by the 5th, 46% achieved stable control; by the 6th, 21% improved further, confirming telehealth effectiveness.

Result

- **From better glycemic Control**.

I. **Higher Term Deliveries: 97.6% (61 of 63 pregnancies)**
II. **Lower Preterm Births: 2.4% (2 of 63 pregnancies)**

- **Cost Effectiveness.-** Telehealth reduces consultation costs by **65.7%(₹230 per visit)**, saving **₹1,380 annually** per patient.
- **Telehealth Acceptance.** Younger patients (58.7%) fully adhered, while 30+ showed lower engagement (31.7% missed sessions, 11.26% lost to follow-up).

Parameter	Pre Intervention Values	Post intervention % change
Underweight Population	13.63%	10.63% Corrected
Overweight Population	15.63%	5.63% reduction
HbA1c (%)	7.81%	2.1% absolute reduction
Postprandial Sugar (mg/dL)	247 mg/dL	107 mg/dL reduction (~43%)
Fasting Blood Sugar (mg/dL)	157.66 mg/dL	58.66 mg/dL reduction (~37%)

Discussion

Telehealth enabled 82% to achieve glycemic control, with 33%, 46%, and 21% improving by the 3rd, 5th, and 6th visits, respectively. Acute hyperglycemia decreased by 20%, enhancing metabolic stability.
97.6% term deliveries and **2.4% preterm births** were observed in our study, showing significantly improved outcomes compared to standard care reported in existing literature (e.g., Oros Ruiz et al., 2024).Additionally, our telehealth model offers a **65.7% cost reduction** compared to the **₹350** average expense of traditional in-person consultations, which includes travel and other associated costs (Chauhan AS et al.)

Reference

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