Preliminary evidence for the clinical effectiveness of adjunctive prenatal telehealthcare

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Background

Use of telehealth for maternity-related healthcare is on the rise. Yet despite growing interest in these services, evidence for the effectiveness of prenatal telehealth programs is scant. Studies suggest that implementation of telehealth services is feasible, but few have evaluated impact on clinical outcomes. This study provides a preliminary demonstration of prenatal telehealth's clinical value, demonstrating associations between program utilization and delivery outcomes.

Method

Sample. Data are from a sample of women who first enrolled in the Maven telehealth program in 2019. Women accessed Maven as an employment health benefit (as beneficiary or dependent). Based on enrollment data (n = 1261), median age was 33 years (*IQR* = 30-36); median BMI was 24.2 (*IQR* = 21.6 -28.3). Most women enrolled in their first (35%) or second (41%) trimester.

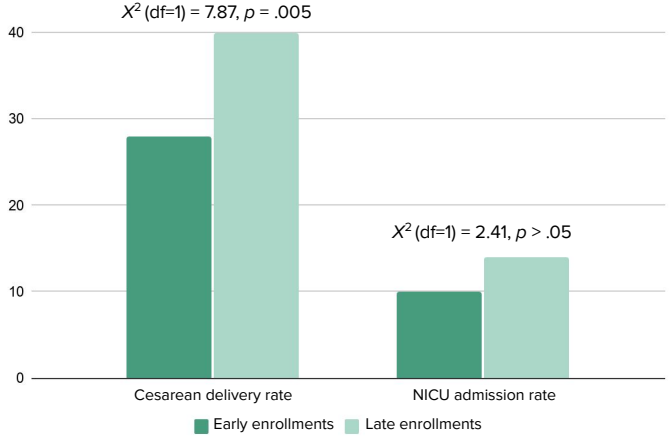
Data collection. Optional, self-report assessments were administered in-app at time of enrollment (age, BMI, parity) and after delivery (modality, NICU).

Program description. The Maven program supplemented standard, in-person prenatal care with access to an on-demand, comprehensive virtual provider network of physicians, mental health providers, and coaches. Members also received emails and viewed developmentally-tailored educational materials calibrated to their week of pregnancy. Resources were accessible via web portal and mobile app.

Results

Half of the women who provided data at enrollment also provided post-delivery data regarding mode of delivery (n = 609) and delivery complications (including NICU; n= 630). Post-delivery response was slightly higher among primiparous women ($p < .05$). Group comparisons assessed delivery outcomes among women who enrolled in Maven during their first or second trimester (early enrollments) verus third trimester (late enrollments). These groups did not differ in age, BMI, or prevalence of existing health conditions ($ps > .05$).

Chi-squared analyses. Cesarean delivery rate was significantly lower among the early versus late enrollment group (28% versus 40%; below).



Results (continued)

NICU rate was also lower among the early versus late enrollment group (10% versus 14%), but this difference did not reach statistical significance.

When stratifying women by relative engagement level (high, medium, low), no statistically significant differences were seen in delivery outcomes ($ps > .05$).

Logistic regression analyses. Logistic regression models assessed associations between enrollment and outcomes, controlling for age, BMI, parity, and engagement level.

Earlier enrollment was significantly associated with lower likelihood of cesarean delivery ($e^B = 1.53$, $p = .04$, model X^2 (df=6) = 29.52, $p < .001$). The association between earlier enrollment and NICU admission only approached significance ($p = .07$).

Conclusion

Women who enrolled earlier in their pregnancy (versus later) in an adjunctive, prenatal telehealth program were less likely to report cesarean delivery. Potentially, use of on-demand care and engagement with developmentally-tailored information early in pregnancy, rather than engagement per se, was beneficial to delivery outcomes. Future studies with controlled designs are needed to establish the impact of supplemental telehealth programs on mode of delivery. Research should also examine facilitators and barriers to early engagement with telehealthcare.