



Live, interactive, online perinatal education.

Birthly recently completed a study with Penn Medicine measuring key clinical outcomes in a randomized trial for patients.

Patients enrolled in Birthly curriculum showed statistically significant improvement across several key outcomes:

- Significantly lower third trimester PrAS scores (indicating lower anxiety) compared to usual care, 44.6 ± 7.3 vs. 53.9 ± 13.8 , $p < 0.01$ with a decrease in PrAS score of 8.3 points (intervention) vs. 0.7 (usual care), $p < 0.01$
- Fewer emergency visits, with a median of 1 for patients in Birthly compared to 2 for those who received usual prenatal education alone
- Higher breastfeeding rates at delivery
- More likely to be satisfied or very satisfied with their childbirth education (94.6% vs. 64.9%, $p < 0.01$)

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Title: A randomized trial of an interactive childbirth education platform in a high-risk population

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Background: Perinatal anxiety is one of the most common conditions during pregnancy and is associated with adverse maternal and neonatal outcomes. Interventions that are focused on childbirth education and health literacy have been shown to help decrease pregnancy-related anxiety. The COVID-19 pandemic necessitated the transition to telemedicine and increasing the need for internet-based prenatal education. It is uncertain, however, whether an online childbirth education course can help to improve outcomes in a high-risk patient population.

Objective: The objective of this study was to compare an interactive online platform for childbirth education (Birthly), to usual prenatal education on pregnancy-related anxiety, emergency healthcare utilization, and delivery outcomes for high-risk pregnancies.

Methods: We performed a randomized controlled trial comparing an interactive online childbirth education platform along with usual prenatal education to usual prenatal education alone. Nulliparous, English-speaking patients with Internet access and a high-risk pregnancy were included. We defined high risk broadly, including both maternal medical and mental health conditions. Patients were recruited from two clinics that predominantly serve under-resourced patients insured by Medicaid. Patients were enrolled at <20 weeks gestational age and randomized to Birthly or usual care alone. The intervention included 3 interactive courses (Prenatal Bootcamp, Breastfeeding, Newborn care) and access to a clinician-moderated online community. Pregnancy-related Anxiety Scale (PrAS) questionnaires were administered at randomization and in the third trimester. The primary outcome was 3rd trimester PrAS score. Secondary outcomes included change in PrAS score, unscheduled emergency visits, delivery and postpartum outcomes.

Results: 90 patients were randomized with no differences in demographics or baseline PrAS scores between groups. The majority of patients self-identified as Black and were publicly insured. Patients who received Birthly had significantly lower third trimester PrAS scores (indicating lower anxiety) compared to usual care, 44.6 ± 7.3 vs. 53.9 ± 13.8 , $p < 0.01$ with a decrease in PrAS score of 8.3 points (intervention) vs. 0.7 (usual care), $p < 0.01$. Patients in the intervention arm also had fewer emergency visits, with a median of 1 for patients in Birthly compared to 2 for those who received usual prenatal education alone. There were no differences in delivery outcomes. Patients in the intervention arm were more likely to breastfeed at delivery, though this was not different by the postpartum visit. Finally, patients who received the intervention were more likely to be satisfied or very satisfied with their childbirth education (94.6% vs. 64.9%, $p < 0.01$).

Conclusion: An interactive online childbirth education platform can reduce pregnancy-related anxiety and emergency healthcare utilization while improving satisfaction in a high-risk patient population.