Can Technology-Assisted Nursing Intervention Improve Postpartum Mood and Decrease Parenting Stress?

Deborah McCarter, PhD, RN\textsuperscript{1}; Eugene Demidenko, PhD\textsuperscript{2}; Mark T. Hegel\textsuperscript{2}, PhD
\textsuperscript{1}Saint Anselm College and Catholic Medical Center, Manchester, NH \textsuperscript{2}Dartmouth College Geisel School of Medicine

Background and Significance

- Postpartum depression (PPD) affects up to 1 in 5 women in the first year after childbirth.
- Untreated PPD has negative effects on health and well-being of mothers, children, and families.
- Women at socioeconomic risk are disproportionately affected by PPD but have less access to resources and support.
- Perinatal nurses may be in a unique position to screen, identify, and manage follow-up for women at risk.
- Technology adjuncts to clinician support have shown promising results and increase outreach to underserved groups.

Research Design

**Phase 1 & 2**: Evaluation for feasibility and acceptability of the technology and messages.

**Phase 3**: Randomized controlled trial with three equal groups
- Group 1: Control (usual hospital care)
- Group 2: Intervention I: Messages only
- Group 3: Intervention II: Messages plus option for nurse call

Purpose

To determine if a nurse-led, web-based messaging intervention provided during the first six months postpartum is effective in improving mood and/or decreasing parenting stress, and is acceptable to postpartum mothers.

Web-based messaging intervention:
- Delivered four times/week for six months postpartum via text or email
- Content standardized: including infant care, maternal self-care, and inspirational messages
- Technology used is Televox, an appointment reminder system

Measures

- Baseline characteristics
  - Demographics
  - Delivery mode and infant feeding
  - History of depression and/or anxiety
- Edinburgh Postnatal Depression Scale (EPDS)
  - 10-item survey in Likert format
  - Scores 13 or above indicate high risk of major depression
  - Scores 10-12 may suggest depression
  - Measured at baseline, 3 weeks, 3 months, and 6 months postpartum
- Parenting Stress Index Short Form
  - 36-item scale
  - Measures stress related to child characteristics, parental characteristics, and situational/demographic factors
  - Measured at 3 weeks, 3 months, and 6 months postpartum
- Patient satisfaction with intervention
- Nursing time and expertise required

Results

**Sample Characteristics**

Total enrolled = 539
- Control = 167
- Intervention I = 181
- Intervention II = 190

No significant differences between groups in:
- Age
- Parity
- Education
- Partner status
- Infant feeding plan
- Prior history of depression
- Depression/anxiety during pregnancy

Group 3 (text plus nurse) had slightly fewer women with EPDS=10 at baseline.

Preliminary Results

- Preliminary analysis focused on the group level did not reveal a statistically significant difference perhaps due to large variation of the EPDS score between women and even for the same woman over the time course.
- More sophisticated analysis is warranted to determine if intervention effective on individual basis.
- Nursing time required not a burden
- Intervention six months for each participant (96 messages total for each)
- 35 requests for phone calls from Intervention (Group 3, n=190) each offered a call 48 times
- 65 calls initiated by study staff for EPDS=13 or higher (sample size=539)
- Participants found messages to be helpful
  - Most (63-74%) reported the messages had a positive effect on their mood
  - Over 80% would recommend them to other mothers
  - “I felt like I was always connected to someone who could help me if I needed it. It was nice to feel like someone was checking in and that help was potentially just a text message away. It made me feel less alone as a new mother and I am going to miss receiving them.”

Selection Criteria

- Recruited on day prior to discharge from maternity hospitalization
- Age 18 or older
- Able to speak and read English
- Eligible if newborn healthy or receiving care in Level II or Level III nursery
- Safety protocol: Women contacted if EPDS score 13 or greater, or reported thoughts of self-harm; assessed for safety and referred as indicated

For more information contact:
Deborah McCarter, PhD, RN; dmccarter@anselm.edu

\textsuperscript{1}Saint Anselm College and Catholic Medical Center, Manchester, NH \textsuperscript{2}Dartmouth College Geisel School of Medicine

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