

Original Paper

# Integrating SMS Text Messages Into a Preventive Intervention for Postpartum Depression Delivered via In-Home Visitation Programs: Feasibility and



of SMS text messages to the MB-1-on-1 intervention would be acceptable, as measured by participants' understanding of and engagement with the MB-TXT. The home visitors' adherence to the MB-TXT protocol was also measured and is described in this report as part of examining how feasible the SMS enhancements were. A description of the full trial, including the psychological outcomes, is presented elsewhere.

## *Methods*

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### **Setting**

The research team partnered with 9 HV programs in the Midwest to recruit women at high risk of poor pregnancy and parenting outcomes. Participant recruitment was conducted between June 2017 and July 2018. Data from the MB-TXT arm of this study

are presented in this report. The Northwestern University Institutional Review Board approved all study procedures (STU00203918).

### **Participants**

The MB-TXT participants included 28 pregnant women m(tp)Tj1 024 0 1

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**Table 1.** Participant characteristics (N=28).

Demographic characteristics	Value
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**Table 2.** Mothers and Babies Plus Text Messaging (MB-TXT) examples classified by Mothers and Babies (MB) 1-on-1 session topics.

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Topic and HV <sup>a</sup> #	Skill reinforcement	Homework reminder	Self-monitoring
<b>Course introduction</b>			
	Everybody has stress. It affects how you feel and how you interact with your baby. Do	PP <sup>b</sup> : Watch and make notes about the 15 min video on being your child's first teacher [38]	How stressed do you feel when you think about becoming or being

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Topic	Skill reinforcement and the HV <sup>a</sup> #	Homework reminder	Self-monitoring	or
11	It is important to have your needs met and express what you need. Positive, clear, and direct requests are the best way to communicate. Practice being assertive	PP: This week try to ask for something from anyone—even your home visitor! What way of asking will help get your needs met—passive, aggressive, and assertive?	Reply and let us know your mood for today on a scale of 1 to 9 (with 9 being the best)	
<b>Planning for the future</b>				
12	Creating a healthy reality for you and your baby must do with your activities, your thoughts, and your contact with others	Congratulations on finishing the MB! On a scale of 1 to 9, how helpful were texts in reminding you about main ideas and personal projects (9 is most helpful)?	Congratulations on finishing the MB! On a scale of 1 to 9, how helpful were texts in reminding you about main ideas and personal projects (9 is most helpful)?	

<sup>a</sup>HV: home visiting.

<sup>b</sup>PP: personal project.

### Measures

Demographic information included age, race or ethnicity, language spoken at home, country of birth and years in the United States, marital status, education, employment, and annual income. Pregnancy history assessed for pregnancy planning, pregnancy length, and previous childbirth.

### Feasibility of MB-TXT

MB-TXT feasibility was defined by HV adherence to the MB-TXT protocol, which included postsession documentation of the participant session data (ie, date when the MB 1-on-1 session was conducted), whether the personal project for each MB 1-on-1 session was completed [yes/no], text message ratings for usefulness and understanding, and optional notes), and the triggering of SMS text messages within 7 days of completing each in-person MB 1-on-1 session.

The participants and were used as a proxy measure of engagement and readability of the SMS text messages. Six of the 12 self-monitoring SMS text messages invited participants to provide a numerical rating of their stress (session 1; 9=most stressed to 1=least stressed), their mood (sessions 2, 5, 8, and 11; 9=best day ever to 1=worst day ever), or overall helpfulness of the SMS text messages (session 12; 9=most helpful to 1=least helpful). The remaining 6 self-monitoring SMS text messages invited participants to respond with a message describing how they applied the intervention skills taught during the MB 1-on-1 sessions.

### Acceptability of MB-TXT

Participants' perceived utility and comprehension of the SMS text messages was measured using a 4-point Likert scale that assessed the usefulness (ie, 4=very useful to 1=not at all useful) and understanding (ie, 4=totally understood to 1=did not understand at all) of each SMS text message. Participant engagement in the MB-TXT was based on the number of SMS text messages sent by the participant in response to the self-monitoring texts that prompted a response (eg, *Are you working on creating your list of pleasant activities you like to do? Reply Y or N*).

### SMS Platform

Healthy SMS [39] is a web-based platform designed to send health-related SMS text messages. The platform includes a dashboard that allows administrators to set up users as individual recipients or within groups, to trigger (ie, initiate) texts, to view planned activities (eg, upcoming messages) or generate data (eg, messages received by users), and to track project-specific information, such as home visitor entries of MB 1-on-1 session data. Home visitors received formal training

the Health study.

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## *Results*

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### **Feasibility**

Feasibility was defined by home visitors' adherence to the MB-TXT protocol, which instructed them to enter session data into the HealthySMS platform within 7 days of each of the MB 1-on-1 sessions. MB-TXT SMS text messages were triggered, on average, 26.18 (SD 14.40) days following the MB 1-on-1 session (range 5.50-61.17 days).

### **Response Rates**

Overall, 68% (19/28) of participants completed the MB 1-on-1

**Table 4.** Participant responses to Mothers and Babies Plus Text Messaging self-monitoring text messages.

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Session	Topic	Text message	Narrative responses
4	<ul style="list-style-type: none"><li>• Pleasant activities</li><li>• What do you like to do?</li><li>• Overcoming obstacles</li></ul>	Were you able to schedule or complete a pleasant activity? Reply Y/N (If Y, also text us what you did!)	<ul style="list-style-type: none"><li>• “Yes, dancing.”</li><li>• “Yes, I went shopping for Christmas gifts (Spanish)”</li><li>• “Yes, I crocheted on my son’s blanket while we listened to music”</li><li>• “Yes, I was able to take my kids to the park and teach my daughter how to rollerblade and jump rope”</li><li>• “Yes, I went shopping and to a family BBQ”</li></ul>
6	<ul style="list-style-type: none"><li>• Thoughts</li><li>• What are thoughts? oφ</li></ul>	Text us a positive thought you have about becoming or being a mom	<ul style="list-style-type: none"><li>• “I am excited to see my baby’s eyes and smile”</li><li>• “I must take care of myself so I can take care of those I love”</li></ul>

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interventions [36,42]. Similarly, home visitors indicated that approximately 50% of the women completed session-specific personal projects, which exceeds the rates found in previous MB trials [43].

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