Text messaging to support a perinatal collaborative care model for depression: A multi-methods inquiry

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ABSTRACT

Objective: Mental health care integrated into obstetric settings improves access to perinatal depression treatments. Digital interactions such as text messaging between patient and provider can further improve access. We describe the use of text messaging within a perinatal Collaborative Care (CC) program, and explore the association of text messaging content with perinatal depression outcomes.

Methods: We analyzed data from an open treatment trial of perinatal CC in a rural obstetric clinic. Twenty five women with Patient Health Questionnaire-9 score of ≥ 10 enrolled in CC, and used text messaging to communicate with their Care Manager(CM). We used surveys and focus groups to assess acceptability of text messaging with surveys and focus groups. We calculated the number of text messages exchanged, and analyzed content to understand usage patterns. We explored association between text messaging content and depression outcomes.

Results: CMs initiated 85.4% messages, and patients responded to 86.9% messages. CMs used text messaging for appointment reminders, and patients used it to obtain obstetric and parenting information. CMs had concerns about the likelihood of boundary violations. Patients appreciated the asynchronous nature of text messaging.

Conclusion: Text messaging is feasible and acceptable within a perinatal CC program. We need further research into the effectiveness of text messaging content, and response protocols.

1. Introduction

Every year, 10 to 20% of women screen positive for depression during pregnancy and the postpartum period (perinatal depression) [1]. Less than one third of these women receive adequate treatment for perinatal depression [2]. Several factors, especially relevant in the perinatal period, such as childcare needs, travel and stigma [3] contribute to poor treatment initiation and completion rates. Integrating mental health care delivery with perinatal care is one potential way to improve access and leads to improved retention rates and improved treatment outcomes [4]. Obtaining mental health care as part of prenatal care is acceptable to women [5] and can simultaneously address multiple barriers to care such as stigma and transportation. Digital encounterless and asynchronous interactions such as text messaging can complement and enhance integrated mental health care delivery systems [6] and can also address barriers such as transportation and stigma [7]. Text messaging can be human, computer based or hybrid [8]. In hybrid text messaging systems, a computer facilitates bulk sending of messages, and a human reads and responds to patient's replies [8].

While rigorous evaluation of text messaging programs is lacking, some have demonstrated improved antenatal care attendance [9,10]. In the United States, automated messaging systems such as Text4Baby which deliver scheduled text messages to pregnant and postpartum women aim to promote a broad range of maternal and child health behaviors [11].

Text messaging has also been used as an adjunct to mental health treatments, such as cognitive behavior therapy [12], and to support medication adherence in individuals with psychotic disorders [13]. However, there is a dearth of reports of text messaging used as an adjunct in perinatal mental health treatments [7]. Furthermore, reports of text messaging in the literature are often limited to programmatic evaluations and do not always consider health outcomes. To our knowledge, this is the first description of the use of text messaging in collaborative care for perinatal depression examining feasibility, acceptability, and association of text messaging content with depression outcomes.

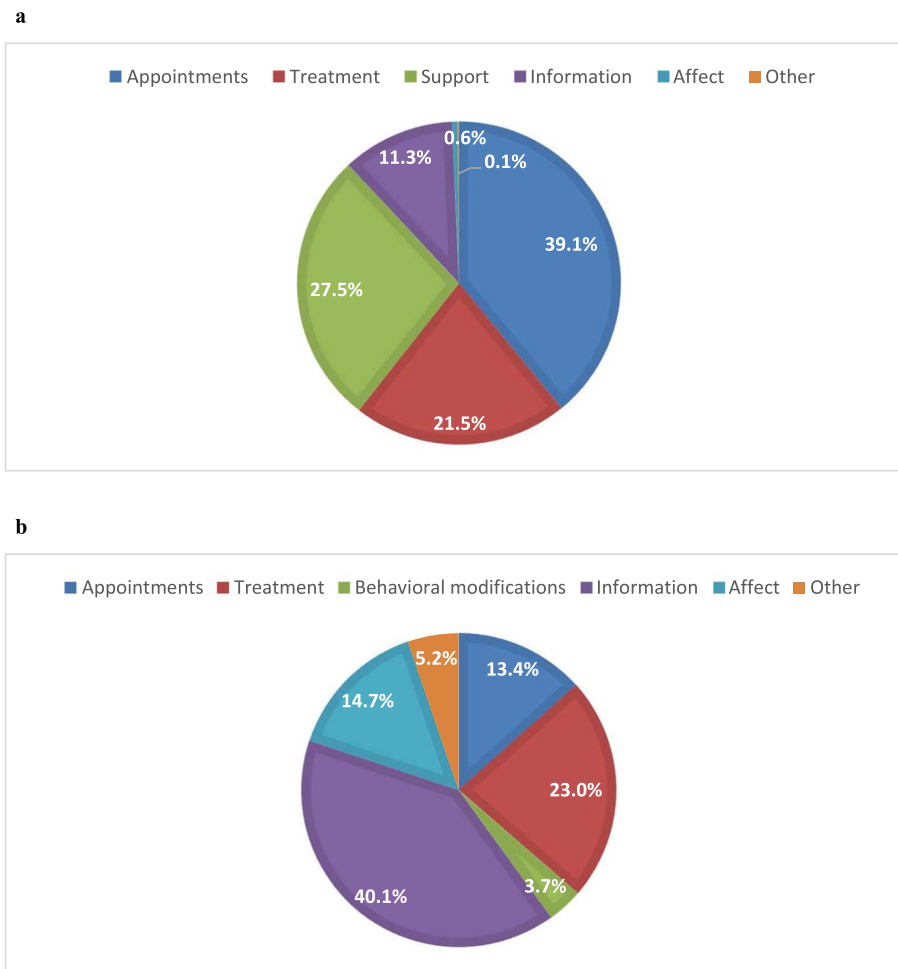In this analysis of data from an open treatment trial of perinatal

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Fig. 1. a: Care Manager initiated content themes (n = 888)
b: Patient initiated content themes (n = 382).

Collaborative Care in a rural obstetric clinic, we aimed to: (1) Describe patients' and Care Manager's (CM's) messaging behavior in terms of frequency of use and content; (2) Explore the association of text messaging content with depression outcomes; and (3) Conduct a qualitative analysis of patients and CM's experiences of use of text messaging in perinatal depression treatment.

2. Methods

We conducted this analysis on data obtained from an open treatment trial of perinatal Collaborative Care in a rural obstetric clinic. Details of the trial have been previously described [5]. From October 2015 through March 2016, we enrolled into Collaborative Care 27 pregnant or postpartum women from an ethnically diverse population, based on meeting eligibility criteria of positive screen for depression (Patient Health Questionnaire – 9 [14] - PHQ-9 score 10 or greater), English speaking, and 18 years and older. The Institutional Review Board at the University of Washington approved all study procedures. Three CMs were trained in an engagement session (manualized), Problem Solving Therapy (PST), text messaging protocols, and general information on perinatal mental health and pharmacotherapy. The CMs met with patients in the obstetric clinic or in the patients' home and provided six to eight weekly sessions of PST, if chosen by the patient. CMs participated in weekly consultation calls with the study psychiatrist (AB) in which they discussed the CM's caseload and received treatment recommendations to implement or convey to the patient's Obstetrician.

2.1. Text messaging communication protocol

Between sessions, CMs communicated with patients via text messaging. CMs used text messaging to send appointment reminders and information about depression, antidepressants and parenting. We provided CMs with semi-structured guidelines for the content of text messages, but encouraged them to be responsive to the unique needs of their patients with regard to frequency and follow up of text messages. No formal treatment was provided by text messaging but the content did include reminders about PST homework and behavioral activation. CMs also told patients that they could initiate text messages at any time with their CM, informed patients that they would be able to respond to messages only during working hours, and gave patients frequent reminders that this number was not an appropriate number to contact in case of emergency. CMs also emphasized that the CM phones were password protected and not shared, and that patients should use similar caution due to limits to confidentiality of text message exchanges. CMs uploaded the messages to a Microsoft Excel workbook and then deleted them from their phones.

2.2. Measures

We measured PHQ-9 scores at baseline, study end, and at every CM visit over an average treatment time of 14.4 weeks (SD 4.8, range 5.7 to 23.1). Twenty five patients had at least two recorded PHQ – 9 scores. We collected information on number and content of text messages sent and received for the duration of the study.