

Health-e Babies App Trial

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Abstract

Background

The use of mobile technology such as phone applications (apps) has been proposed as an efficient means of providing health and clinical information in a variety of healthcare settings. We developed the Health-e Babies app as an Android smart phone application for pregnant women attending a tertiary hospital in a low socio-economic community, with the objective of providing health information about early pregnancy that would increase maternal confidence and reduce anxiety. Based on our earlier research, this form of health communication was viewed as a preferred source of information for women of reproductive age. However, the pilot study had a poor participation rate with 76% (n=94) not completing the study requirements. These initial findings raised some very important issues in relation to the difficulties of engaging women with a pregnancy app. This paper analyses the characteristics of the participants who did not complete the study requirements in an attempt to identify potential barriers associated with the implementation of a pregnancy app.

Methods

This retrospective review of quantitative and qualitative data collected at the commencement of the Health-e Babies App trial, related to the participant's communication technology use, confidence in knowing where to seek help and mental health status, maternal-fetal attachment and parenting confidence. Engagement and use of the Health-e Babies App was measured by the completion of a questionnaire about the app and downloaded data from participant's phones. Mental health status, confidence and self-efficacy were measured by questionnaires.

Results

All women were similar in terms of age, race, marital status and level of education. Of the 94 women (76%) who did not complete the trial, they were significantly more anxious as indicated by State Trait Anxiety Inventory ($p=0.001$ Student T-test) and more likely to be unemployed (50% vs 31%, $p=0.012$ Student T-Test).

Conclusion

This study provides important information about the challenges associated with the implementation of a pregnancy app in a socially disadvantaged community. The data suggests that factors including social and mental health issues, financial constraints and technological ability can affect women's engagement with a mobile phone app.

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Protocol

Step 1.

Discuss and provide participant with an information sheet about the study and contact details

Step 2.

Obtain an informed written/signed consent- copy given to participant/original kept on file

Step 3.

Participant given the following questionnaires to complete:

- Demographics and ICT /App use
- Antenatal Risk Questionnaire (ANRQ) and Edinburgh Postnatal Depression Score (EPDS) (done routinely at the clinic for all women)
- General Anxiety Disorder-7 (GAD-7)
- State Trait Anxiety Inventory (STAI)
- Maternal Antenatal Attachment Survey (MAAS)
- Parenting Sense of Competency (PSoC)

Step 4.

On receiving the participant's mobile phone number, a text message or email is sent with the 'link' to download the app

Step 5.

Ensure that the participant has received the message with the link

Step 6.

Explain how to download the app and provide written instructions on downloading and use of the app

Step 7.

Provide written contact information (phone and email address) if problems arise with downloading the app or its use

Step 8.

If possible have the participant download the app immediately. If unable to access free wifi at the time of recruitment, advise locations for free wifi

Step 9.

Advise participant of follow-up at the end of the 10 week trial

Step 10.

21 weeks gestation: Calculated from participant's due date of birth at time of recruitment

Contact participant via phone call, text message or email to arrange appointment for 22 wk follow-up appointment

Step 11.

22 week Appointment:

Participant given the following questionnaires to complete:

- Health-e Babies App evaluation questionnaire

- Antenatal Risk Questionnaire (ANRQ)

- Edinburgh Postnatal Depression Score (EPDS)

- General Anxiety Disorder-7 (GAD-7)

- State Trait Anxiety Inventory (STAI)

- Maternal Antenatal Attachment Survey (MAAS)

- Parenting Sense of Competency (PSoC)

Step 12.

22 week Appointment:

Download data from participant's mobile phone onto a secure laptop

Step 13.

22 week Appointment:

Ask the participant if they would like to be involved in an interview or focus group to discuss the app

Step 14.

If unable to attend an appointment, questionnaires emailed or posted to participant with a stamped return envelope

Step 15.

Follow-up Interview / Focus Group- to be arranged at mutual convenience

Step 16.

Data Collation:

- Excel spread sheet
- SPSS Version 24

Step 17.