bump2bump: Online Peer Support in First-Time Pregnancy

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Abstract

First-time pregnancy is a significant life event and
holistic maternal wellbeing is important. Dominant
social narratives state that pregnancy is a time of
fulfilment and stability but many women report feeling
otherwise. Healthcare prioritises generic information
relating to physical health and psychological support is
often overlooked. Social support is an important
mediator of maternal wellbeing and significant numbers
of pregnant women go online to seek out others they
can talk to. This research is exploring the potential of
digital resources to provide social support in first time
pregnancy. Participatory design methods will be used to
develop a prototype digital resource with the aim of
facilitating tailored peer support to enhance subjective
wellbeing during pregnancy and beyond birth.

Author Keywords

Motherhood; HCI; pregnancy; peer support

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g.,
HCI): Miscellaneous; H.5.2 User interfaces
(prototyping. user-centered design)

Research situation

I am a second year PhD student in the Dept. of Computer Science at University College London. My doctorate focuses on the multidisciplinary nature of contemporary digital health and is influenced by computer science and public health paradigms. I have completed my first year assessment and my upgrade viva will take place in spring of 2016. I anticipate submitting my thesis in late 2017. I am a social scientist with a background in psychology and digital intervention design. My research explores the potential of digital resources as a source of social support in first time pregnancy. The aim of the research is to develop an intervention to facilitate safe and effective online peer support within the context of first time pregnancy. I am currently completing a systematic integrative review of the evidence relating to design features which facilitate online peer to peer interaction in digital resources for pregnant women. I am also conducting interviews with pregnant women, first time mothers and health professionals in order to determine basic user needs and requirements and develop theory around digital peer support in pregnancy. I intend to conduct several cycles of prototype development and evaluation before moving on to a qualitative evaluation 'in the wild'. I see the CHI2016 doctoral consortium as an invaluable opportunity to engage with the diversity within the CHI community; a substantial part of my doctoral work involves effective communication and 'translation' between public health and computer science - the interdisciplinary nature of the doctoral consortium will help me with this.

Context and Motivation

First-time pregnancy is a time of huge physical and emotional change and women often need support. One way of providing this is to provide wellbeing information. However, pregnant women are bombarded with information, much of it generic, conflicting or anecdotal. Crucially, receipt of information does not translate into subjectively feeling supported and prepared for parenthood. Indeed, women are highly informed about their antenatal physical health and yet ante- and postnatal affective disorders and perceived low self-efficacy continues to rise. Large numbers of women look for information and advice online, increasingly engaging with alternative forms of 'expert' information, in the form of other people's experiences. This context provides a unique opportunity for digital resources to act as preventative medicine: bringing women together in a safe online environment allows them to speak freely, develop practical skills and feel supported as they become parents. This in turn relieves healthcare burden by preventing negative maternal and neonatal outcomes.

Background and Related Work

Up to 20% of women experience clinical levels of anxiety or depression during pregnancy [1] and poor antenatal wellbeing is associated with negative outcomes for mother and baby [2]. Research suggests that standard antenatal care often does not meet women's wellbeing needs [3] and that poor antenatal wellbeing in uncomplicated first time pregnancy is connected to issues of identity change and low perceived social support [4]. Social support in first time pregnancy is associated with better maternal health, relationship satisfaction, child outcomes and coping [5]. Satisfaction with social support protects against postpartum depressive symptoms and has a positive association with parental self-efficacy [6].

Fields such as nursing, midwifery and cultural geography have researched the relationship between motherhood and technology but HCI research is starting to explore technology's growing role in the experience of pregnancy [7]. Pregnant women seek out support in navigating new responsibilities through social connection offered via digital media. Internet and smartphone access and usage is ubiquitous within this group, and research confirms that pregnant women routinely source information and support via the Internet, particularly when they deem their antenatal care to be insufficient [8]. The potential for online resources to provide social connectedness and support to pregnant women is profound [9].

Medical technology has transformed women's conception choices and allowed foetal development to be tracked in ever-finer detail. From digital support for the management of chronic conditions in pregnancy [10] to lifestyle support [11], to apps which allow you to listen to your baby's heartbeat, pregnancy has unquestionably 'gone wired' [12]. However, a minority of antenatal digital resources focus specifically on social support: peer-to-peer contact is usually unmoderated and offered as an add-on to the main event of information dissemination. This is despite women consistently stating a desire to connect with other women 'like them' and acknowledgement of the enormous benefits of well-designed online peer support in parenting [13]. Digital interventions employ heterogeneous methodologies and often collate existing online resources and push information out via text message or email [14]. Prototype exceptions do exist but to the best of our knowledge, no research has been conducted on the efficacy of digital peer support specifically in first time pregnancy.

Problem, Research Goals and Methods

This research seeks to answer the following question: Can online peer support during first time pregnancy improve subjective wellbeing?

An exploratory approach is being followed with a focus on user studies and the development of a working prototype of an online peer support resource. In order to answer this statement, several sub-problems need to be addressed:

Goal 1: Conceptual clarification of 'wellbeing' in first time pregnancy. **Methods:** (i) Conduct semi-structured interviews with pregnant women, mothers and health professionals; (ii) Analysis of the interview data will determine key features of antenatal wellbeing.

Goal 2: Understanding what characteristics define those who are willing to engage with online peer support. **Methods:** (i) Conduct semi-structured interviews with pregnant women, mothers and health professionals; (ii) Analysis of the interview data will determine which group/s of women might find online peer support more useful than others.

Goal 3: What are the user requirements of those who are willing to engage with online peer support? **Methods:** (i) Conduct semi-structured interviews with pregnant women, mothers and health professionals; (ii) Analysis of the interview data will provide basic user requirements which will inform the development of a preliminary prototype. (iii) Test these basic user requirements in subsequent participatory design development cycles.

Goal 4: Understanding the impact of the intervention. **Methods:** (i) Evaluate the prototype 'in the wild', incorporating measures of satisfaction, acceptability and adherence. (ii) Conduct interviews with users.

Dissertation Status

Interviews are currently being undertaken with pregnant women, first time mothers and healthcare professionals in order to determine conceptual clarity of antenatal wellbeing and to explore user needs and requirements. Interviews are semi-structured and follow an appreciative enquiry approach. Data is being analysed and informs data collection. These interviews will inform the first development and evaluation cycle of a preliminary prototype. This will follow a participatory design paradigm. I anticipate undertaking 3 development cycles to address major, minor and then editorial revisions. The final objective is to evaluate the prototype 'in the wild'. Interviews are to be concluded by January 2016, the final iteration of the prototype evaluated in October 2016 before full evaluation begins in November 2016. My thesis is currently in outline /draft stage. I am particularly hoping to gain insight into participatory design approaches from involvement in the doctoral consortium.

Expected contributions

The outcome of this research will inform the design of a personalised digital social support resource in first time pregnancy. The proposed digital resource will provide evidence that such resources need to be tailored to unique user needs. A summary of my contribution:

1. A working prototype of an online peer-to-peer support resource for use in first time pregnancy and evaluation of this prototype.

2. Definition of the user needs and requirements of this specific group, beyond information requirements.
3. Conceptual clarity around subjective wellbeing in first time pregnancy.
4. Contribution to methodology: multidisciplinary approach grounded in the positive principles of action research, appreciative enquiry and participatory design.
5. Drawing attention to the intersection of motherhood and HCI as an emergent area, where digital interactions play a vital role in the experience of motherhood.

Acknowledgements

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