Informatics in Primary Care 2006;14:41–7

Refereed papers

Online discussions mirroring family life during pregnancy

Pirkko Kouri MNSc
Doctoral Student in Nursing, University of Kuopio and Senior Lecturer in Healthcare Technology, Savonia Polytechnic, Health Professions Kuopio, Finland

Hannele Turunen PhD
Senior Lecturer

Kerttu Tossavainen PhD
Professor

Department of Nursing Science, University of Kuopio, Finland

Seppo Saarikoski MD PhD
Professor, Department of Obstetrics and Gynaecology, University of Kuopio and Professor and Chairman, Department of Obstetrics and Gynaecology, University Hospital of Kuopio, Finland

ABSTRACT

Objective The aim of this study was to find out what aspects of their parenthood parents revealed, and how they expressed their thoughts concerning maternity care services on an online communication forum.

Background The 'Information Society' offers a growing variety of health services as part of public primary health care via the internet. Little is known about the contents produced online by pregnant families, and how they reflect on both family life and maternity care services.

Methods The data for this study were obtained from online discussions between families (n=21) in *Net Clinic*, an internet-based service designed for public maternity care. The data included experiences of family life during pregnancy, childbirth and parenting, and was analysed by inductive content analysis.

Results While maturing into parenthood, both women and men recognised the uniqueness of their new role and wanted to prepare for safe childbirth. Online communication in the home environment nourished new social networks among families who were expecting their first, second or third child. In addition, families reflected on maternity care services on the *Net Clinic*'s communication forum. This provided realistic feedback to maternity care professionals.

Conclusions Today, the relationship between clients and professionals is inevitably changing. More online services and advocacy are needed if families are to have access to online health services. The role of professionals is diversifying from being authorities to supporting and facilitating clients' individual self-care. Based on direct client feedback, the quality of maternity care can be improved.

Keywords: internet support groups, online maternity services, pregnant family

Introduction

The role of information and communication technology (ICT) as a mediator or connector between people, between people and information, and even between people and the natural world is expanding.[1,2] According to Gripenberg, we still know little of how our life is affected by the growing role of ICT.[2] The

internet enables individuals to receive up-to-date information quickly from various sources. Families commonly search for information on health-related issues, such as nutrition, exercise and medication.[3] By connecting, analysing, interpreting and finding patterns within pieces of information, we gain more knowledge and understanding.[2,4,5] For an individual person, such as a pregnant parent, knowledge involves both understanding and an ability to make use of information to answer questions, solve problems and make decisions. In addition, the hidden 'tacit knowledge' helps individuals to perceive and define their world with mental models, such as perspectives, beliefs and viewpoints.[4,5] Knowledge is the key to parental support and empowerment.[6,7] The internet introduces new types of online healthcare services and helps to establish new conversation groups, which enable interactive e-communication at all hours.[8,9] Easily recognised virtual support groups already exist in the form of online self-help groups for people with diverse problems such as alcoholism, eating disorders, bereavement, a sick child or Alzheimer's disease, and for older people, cancer patients and people with diabetes or some other chronic illnesses, for instance.[10–22] Many of these virtual communities are provided by voluntary organisations or associations, and individuals are taught how to participate in a 'virtual world'.[10,23,24]

The greatest barriers to the use of the internet for health-related purposes are the potential threats to privacy and the user's inability to evaluate the quality of the information and services available online.[25] Harmful use of virtual discussion forums includes, for instance, sending messages through the forum that could be viewed as inflammatory or rude, showing negative emotions, a large volume of posted messages and the lack of physical contact.[26]

In Finland, maternity care is provided in both the primary and secondary care setting. As part of primary care, maternity services consist of regular follow-ups, various screenings, and related guidance and support for pregnant women and their families. Most babies are born in specialised hospitals. This study describes a one-year period in the five-year Beginning Life (BL) project (1996–2001), where *Net Clinic*, a new service, was introduced as an electronic maternity care service in Finland. *Net Clinic* is a shared environment for both maternity care professionals and pregnant families. Families have their own *Net Clinic* discussion forum, where they communicate anonymously. If necessary, professionals comment on the discussion.[26] This article illustrates how pregnant families used the discussion forum, and what kind of topics they discussed.

Data and methods

Net Clinic was used as a courtesy service in an authentic maternity care environment. The organisations responsible for the BL project approved of the experiment as part of the project agreement, which was based on each organisation's principles of research ethics. The BL project calculated that it could equip 20 pregnant families with the information, communication and technology (ICT) tools needed to participate in the introductory phase of *Net Clinic*. One more family joined the BL project because they moved abroad and wanted to have virtual maternity care services via *Net Clinic*. At a certain point, at about 8–12 weeks of pregnancy, the public health nurse asked each family with normal pregnancy at their first visit to the maternity care centre if they were interested in using *Net Clinic* for a year. There were more families willing to join the introductory phase than resources available, but the families were recruited in the order in which they first visited the public health nurse at the start of the *Net Clinic* introductory phase. The families enrolled in the project voluntarily. They were informed about the research and asked for oral informed consent. In line with Finnish legislation, each mother and father had a personal username and password.[27]

On the discussion forum, all communication was by asynchronous interaction, giving the users time to consider their thoughts. Most participants included their first name in the closing salutation. The data in this study included the messages (f=280) posted on the discussion forum; the timeline of the messages ranged from December 1999 till April 2001. Each pregnant family participated for approximately one year, starting from the time the family came for their first visit to the maternity clinic and agreed to *Net Clinic* usage. Typed with 1.5-line spacing, the material amounted to 83 pages. Messages had the mother's name 86 times (31%), the father's name 19 times (7%), the names of all family members 163 times (58%), and no name of the sender 12 times (4%).

In this study, qualitative content analysis was used to understand the pregnant families and the social and cultural contexts within which they lived. The reason for choosing a qualitative research design was the observation that one of the things that distinguishes human beings from the natural world is their ability to express themselves by talking and writing.[28–30] The purpose was to analyse the content of the messages and to outline a general description of the topics covered. The qualitative content analysis of the conversations produced by pregnant families helped to systematise and categorise the needs, values and preferences of the families and their thoughts on the maternity care services given. The method of data collection meant that a profound understanding was gained of the

family experiences via these open discussions. The analysis was started by carefully reading through the data to understand the contents. The unit of analysis was a word or a phrase, and the units were classified based on their content into six subcategories. On the basis of the subcategories, two generic categories were formed, which illustrated the parents' thoughts on pregnancy and feedback on the maternity care services available (see Figure 1). Direct quotes of the authentic original data illustrate the choices that were made.[28–30]

Results

The families were advised how to use *Net Clinic* by the technical secretary of the project. The characteristics of the study participants were recorded during the *Net Clinic* introduction. According to a computer literacy inquiry, all parents had basic computer skills (that is, word processing, copying and saving data, and use of email) (see Table 1).

Table 1 Background information of participating families (*n*=21)

Pregnancy	
First child	*n*=16
Second or more child	*n*=5
Parental age	
Women	range 23–42 years, average 31 yrs
Men	range 25–53 years, average 33 yrs
Residence	
Suburban	*n*=16
Rural	*n*=5
Internet usage	
Had used	*n*=19
Had not used	*n*=2

Parenthood from pregnancy to safe birth-giving

Pregnant families' conversations focused significantly on sharing views about their growth towards parenthood and included discussion on unknown parenthood and unique and safe birth-giving (see Figure 1).

The first generic category, *unknown parenthood*, consisted of *growth into parenthood*, *concern about being a successful parent* and *parturient's need for personal support.*

Growth into parenthood meant that the parents' relationship with the baby was extremely personal, and they reflected on these new emotions. Mothers mostly felt a sense of solidarity with the baby. The development of a 'traditional' family was promoted by the fact that all *Net Clinic* families consisted of a mother and a father expecting their own baby. The mothers talked to their unborn babies and expected the father–baby relationship to become more concrete after the birth.

> 'Even now that the baby is still inside me, it seems that we belong together somehow. On the other hand, especially when it was not visible yet, I felt really funny talking to my tummy.'

> 'The interaction between the baby and the mother arises when the baby is still unborn. After the birth, the father will have more chances to be involved in interaction.'

Concern about being a successful parent showed that the participants experienced parenthood as a new situation, where they felt uncertain about their competence. During their pregnancy, especially during their maternity leave, mothers had time to think about things, including their new, exciting and even partly frightening life situation. They thought that the baby's needs would be small, but felt worried about their ability to recognise these needs.

> 'As a novice, I find it kind of exciting, but also a little scary. Even though you know that the needs of the little one are not that big, the challenge might be to recognise them correctly. And whether you make too many demands on yourself for maternity.'

Parturient's need for personal support was expressed by the future mothers. It was obvious through the discussions that all mothers, even those expecting second and subsequent babies, wanted to give birth in a hospital environment. Most fathers were able to be present at the delivery. If the father had to work at the time of the delivery, the mother often had someone else, such as a sister, present as a support person. The woman in labour needed comforting nearness.

> 'But because I went into labour in a different hospital last time, we would like to get acquainted with this hospital, too ...'

> 'It is best to have someone who is intimate and reliable.'

The other generic category, *unique and safe birth-giving*, was based on *preparation for safe delivery, need for professional support* and *families as a mirror of maternity care services.*

Preparation for safe delivery was shown by the fact that the parents expecting a baby actively and collaboratively searched for empirical knowledge based on research and good clinical procedures and aesthetic

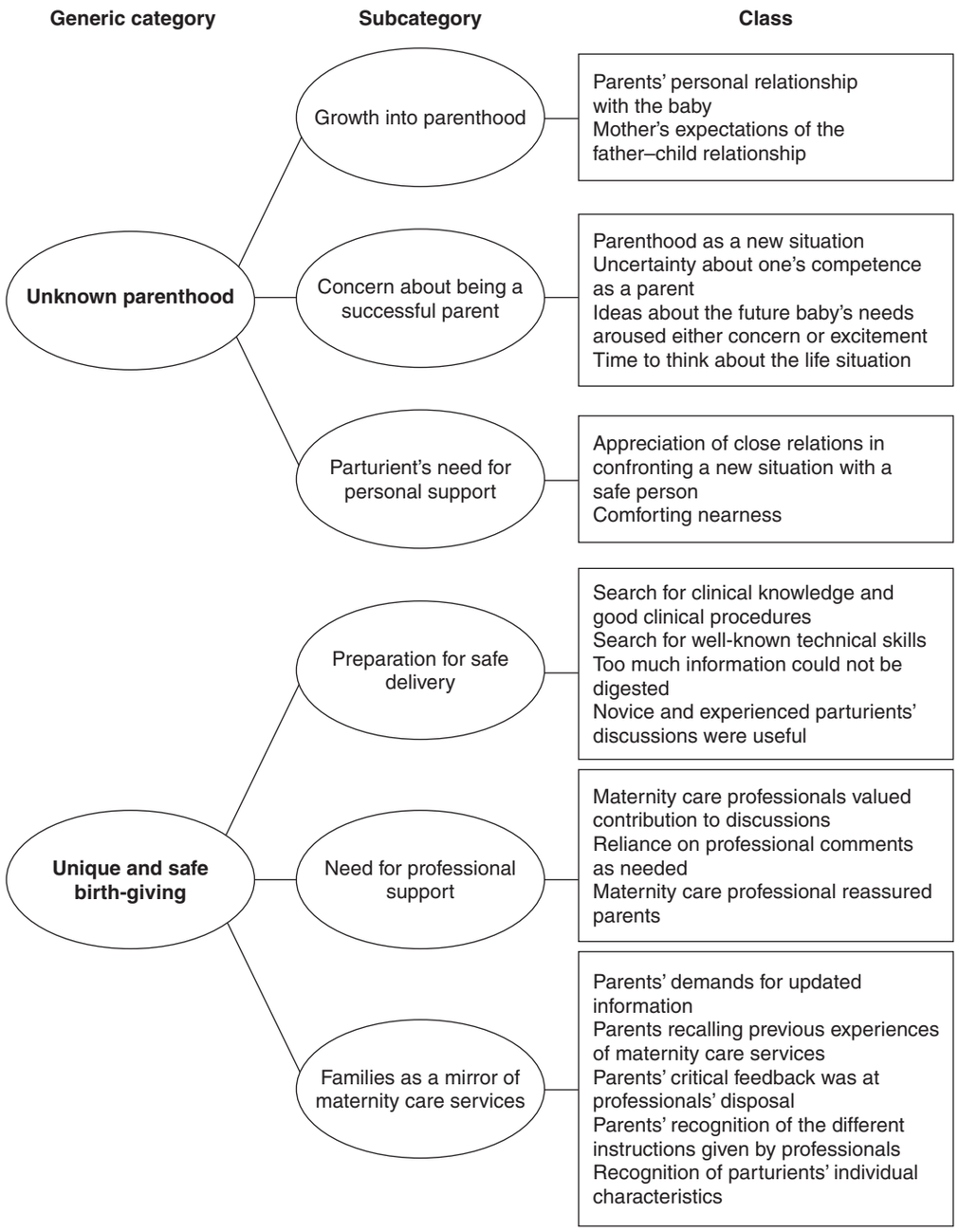

Figure 1 Growing towards parenthood

knowledge about well-known technical skills related to the actual moment of delivery. When there was too much information available, parents with meagre background knowledge were not able to digest it all. Novice parents found the discussions between experienced parents useful, and pointed out that they learned much from this communication. They also went through the information given by maternity care professionals.

> 'Which phone number can be used to get instructions on when to leave for the obstetric hospital? If there were instructions, there wouldn't be unnecessary departures, and in the case of emergency, one could ask for advice quickly.'

The *need for professional support* was shown by the fact that the mothers trusted in maternity care professionals' knowledge and appreciated that they contributed to the discussion, commented on matters and

reassured the parents. All participants were aware that their communication was followed by professionals, who commented on it when necessary, always identifying themselves.

> 'As the public health nurse/midwife wrote, the mother is allowed to sleep in the position she finds best.'

Families as a mirror of maternity care services originated from parents' demands for updated information about the time of delivery. The families recalled their previous experiences of maternity care services. The contradictory pieces of information, particularly, were thoroughly analysed and clarified. When one parent expressed her worry about when to leave for hospital, the others quoted the instructions given to them and commented on the contradictory quality of the instructions available to expectant parents.

> 'If your waters break, you have to go to the hospital in an ambulance. Do instructions vary in different hospitals? Because when I went into labour the first time and my waters broke, the local hospital advised me to just stay at home and wait for the contractions to become stronger and then to go to the hospital by car. I was at home for at least another six to seven hours.'

> 'I also have conflicting information about this, actually more than about any other thing. I truly don't know what I would do if my waters broke.'

The discussion between the parents was useful information to professionals about the matters that preoccupy expectant parents and should be openly discussed in more detail. Some of the parents moved to a different locality and the catchment area of a different hospital, and the new hospital usually had different instructions and practices. Experienced parents were allowed to choose whether they wanted to attend a preparatory course during their pregnancy. The parents recognised the differences between the instructions given to first-time and experienced parents.

> 'I have been wondering that if the first child is delivered by Caesarean section, and the second one will probably come vaginally, when is the right time to leave for hospital? Different times have been given for the duration of contractions and their frequency for first-time mothers and those having second or subsequent babies.'

Although some parents had already been through one delivery, they recognised that all parturients are different and were concerned about their ability to act correctly.

> 'Now I am a little afraid that if the contractions start at home, I don't know how soon I should leave for hospital, since the first one [labour] went so quickly.'

Discussion

According to Myers,[30] over the past ten years there has been an increasing interest in using ICT as part of qualitative research methods in studies of social and cultural phenomena. In general, qualitative research attempts to describe and interpret a human phenomenon, often in the words of selected informants. In this study, with the help of qualitative content analysis, the data produced by pregnant families on *Net Clinic*'s discussion forum were conceptualised without losing the actual contents and meanings of the conversations. The classification structure summarised the information and formulated a clear overview of the families' new experiences, the collaborative development of parenthood and the use of *Net Clinic* as a 'growing tool'.[28–30] The participants consisted of a group of Finnish expectant families, that is, married or cohabiting couples, who were moderately computer-literate. The limitation of this study was that it did not involve foreigners, one-parent families and families without a computer.[28] Because some messages had no identifiable sender, there is some ambiguity regarding senders in the dataset. The findings should be confirmed through further research with single-parent families and non-computer-using families. However, the research findings highlight the experiences of the 'internet-familiar' families who participated in the research, and may be generalised to apply to similar expectant families.[28–30]

The pregnant families knew the prevailing *Net Clinic* practice and were informed about the presence of maternity care professionals on the discussion forum. There was no evidence to show whether the awareness of the discussion forum had influenced the parents' behaviour. The number of contacts from each family was not calculated, because the choice of whether to write a message or just to follow the conversation was left to each participant. The times when the messages were sent were not reported in the pooled conversation data, so therefore were not known, though internet access allowed the participants to reach the discussion forum at any time.

The results contain feedback on the practical implementation of new technologies in maternity care services. The parents approached pregnancy individually, with the mothers feeling it more concretely. Many of the mothers realised they were living between two phases of life, being simultaneously a non-parent and a prospective parent. Parents benefit from participating in parents' groups in a number of ways: by forming social networks, by gaining self-confidence and by sharing relevant information on parenting, pregnancy and child health. This is congruent with previous studies.[10,31–34] The results showed that pregnant women, especially first-time mothers, were concerned about their competence as future parents. Several studies

show that parents need support from maternity care professionals in their growth into parenthood, instructions on child care and rearing, help with marital problems and social support networks.[31–34]

Textual communication is pivotal to understanding modern communities, for it is through texts that the participants in virtual environments create, affirm or change shared meanings and culture.[31,33] *Net Clinic* offered the participating parents a forum for sharing knowledge and enabled them to use their creativity in innovative ways. According to previous studies, families search actively for information[8–9,35,36] and need support for their information search and lack of health literacy skills.[9,25] The parents had a huge need for information, and they even sought information collaboratively. They also needed time to 'digest' all the new information and the different kinds of knowledge, and they wanted to discuss it with maternity care professionals.

Professionals' knowledge was expected to be empirical and to guide the parents in their growth into parenthood. Aesthetic knowledge was gained in unique situations and by intuitively learning from both other expectant families and professionals. Additionally, the parents shared ethical knowledge when discussing 'what was the right thing to do in different situations'.[9,25,37,38] There are suggestions that interaction with and through ICT might change individuals' perceptions of time and space, social roles and proper ways to communicate – these changes will result in societal change at some point, generating, for example, new ways of acting and knowing things.[9,36,38]

The expectant parents considered the birth of their baby a unique event and wanted personalised maternity care services. Childbearing aroused a desire for being secure during childbirth. This is congruent with the study of Paavilainen.[32] Other studies show that pregnant families expect professional competence, a safe atmosphere and confidential relationships.[22,32–35] Experiences and critical feedback about services are easy to give when anonymously using virtual networks.[24,36,38]

By offering pregnant families social support and helping them access and evaluate health information on the internet, the maternity care professionals taught pregnant families skills that will hopefully serve them for a lifetime. The virtual discussion forum allowed the pregnant parents to exchange ideas and to provide and receive support at any time of the day or night, without the kind of time and travel constraints imposed by traditional pregnant families' support groups. The *Net Clinic* service also allowed interaction with maternity care experts, who facilitated the discussions on health and welfare topics and answered the questions posed by the parents on the discussion forum. When necessary, the professionals put the record straight when the parents shared misinformation or presumptions.

The policy of public virtual discussion forums states that online conversations open to all people are, in fact, public. The threat of misuse is always a possibility on virtual discussion forums like *Net Clinic*. The 'netiquette', that is, the network etiquette, lists the 'dos and don'ts' of online communication. Netiquette covers both common courtesy online and the informal 'rules of the conversation road'. In this study, no rude or inappropriate behaviour was shown by the pregnant families in their online communication.

The implications of the results of this study for maternity care include the importance of the new connections between families. *Net Clinic* offers families a way to contact others while staying at home or at work, and even families living abroad are able to have services in their mother tongue 24 hours a day. Real-time assessment challenges us to develop the quality of maternity care services in such a way that they will respond to the variable needs of childbearing families. Furthermore, there is a need to examine whether virtual communities can substitute or complement face-to-face support groups, and even save progressively diminishing resources. This also means that families with easy access to information will control their own health care and, by doing so, consult healthcare professionals much less often.

ACKNOWLEDGEMENTS

The Finnish Association of Caring Sciences, the Foundation for Nursing Education in Finland, and the Department of Nursing Science at the University of Kuopio appropriated a grant to make this research possible in practice.

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CONFLICTS OF INTEREST

None.

ADDRESS FOR CORRESPONDENCE

Pirkko Kouri MNSc
Doctoral Student, University of Kuopio
Department of Nursing Science
PO Box 1627
FIN-70211 Kuopio
Finland
Tel: +358 44 7856404
Fax: +358 17 2556422
Email: Pirkko.Kouri@savonia-amk.fi

Accepted February 2006