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Internet use by Chinese women seeking pregnancy-related information

Ling-ling Gao, PhD, MSc, RN (Associate professor)[a,*], Margareta Larsson, PhD, RNM (Associate professor)[b], Shu-yuan Luo, BSc, RN, RM (Senior nurse)[c]

[a] School of Nursing, Sun Yat-sen University, 74#, Zhongshan Road II, Guangzhou 510089, China
[b] Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden
[c] Labor Room, The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, China

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ABSTRACT

Objective: to investigate whether and how Chinese pregnant women used the Internet to retrieve pregnancy-related information.
Design and setting: a descriptive, cross-sectional design using a waiting-room questionnaire was employed to obtain information from Chinese pregnant women attending the antenatal clinic of a general hospital in Guangzhou, mainland China from September to October in 2011.
Participants: a total of 335 Chinese women pregnant at least 32 weeks participated in the study with the response rate 85%.
Findings: the great majority of the women (91.9%) had access to the Internet. Most of them (88.7%) used it to retrieve health information and began from the beginning of the pregnancy. Fetal development and nutrition in pregnancy were the two most often mentioned topics of interest. More than half of the women regarded the information as reliable. The first most important criterion for judging the trustworthiness of web-based information was if the facts were consistent with information from other sources; the second most important criterion was if references were provided. Most (75.1%) of the women did not discuss the information they retrieved from the Internet with their health professionals.
Conclusion: the Internet was a common source for pregnancy related information among Chinese pregnant women, the same as that in the western countries. Health professionals should be able to guide Chinese pregnant women to high-quality, web-based information and then take the opportunity to discuss this information with them during antenatal visits, consultations and childbirth education classes.

Introduction

The Internet has become one of the most popular sources of health information in the recent years. Worldwide, 4.5% of all Internet searches are health related (Eysenbach and Kohler, 2003). The Internet provides increasingly easy access to health information for the general population. A vast and increasing amount of health-related information is readily available on the Internet. Consumers frequently access health-related information prior to meeting with health professionals as well as after their consultations (McMullan, 2006; McKenna and McLelland, 2011).

The use of the Internet as a source of health information has also become increasingly popular among pregnant women (Lagan et al., 2011). A nationwide survey in the US revealed that more than three quarters of childbearing women turned to the Internet for information about pregnancy and birth (Declercq et al., 2007). Of the 84% of women in a Swedish survey who had sought pregnancy information online, the median number of searches per month was four, with some women reporting going online for pregnancy information as often as twice each day (Larsson, 2009).

Many people searching online for health advice trust the information and advice they find (Mead et al., 2003). However, studies have shown that medical information provided on the Internet is not always reliable or current (Eysenbach et al., 2002; Kunst et al., 2002; Weiss and Moore, 2003). In a systematic meta-analysis of health website evaluations, 70% of studies concluded that quality was a problem on the Internet (Eysenbach et al., 2002).

The information on the Internet lacks regulation. Thus it can be difficult for the general population to distinguish accurate from inaccurate sources on the Internet. A lot of information is commercial and may not easily be identified as such. Studies have shown that Internet users were hesitant about the reliability of health information on the Internet (Dhillon et al., 2003; Bernhardt and Felter, 2004). Without proper guidance, information on the Internet can be harmful, confusing and overwhelming (Skinner et al., 2003).

* Corresponding author.
E-mail addresses: gaoll@mail.sysu.edu.cn (L.-l. Gao), Margareta.Larsson@kbh.uu.se (M. Larsson), swflsy@163.com (S.-y. Luo).

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It was reported that many pregnant women were confused by incorrect information on the Internet and experienced heightened anxiety (Santis et al., 2010).

Even though pregnancy and childbirth could be viewed as a natural phase in life, expectant parents might need support from different sources (Johansson et al., 2010). Health-care professionals meeting pregnant women mostly provide informational support, which has been described as the transmission of knowledge to others or letting others know how to obtain the necessary information (Scharer, 2005). In addition to medical screening and check-ups, antenatal care has been proposed as a means of providing education and as an opportunity to modulate behaviour in pregnancy.

In mainland China, women are expected to be seen in pregnancy every 4 weeks, until 28 weeks of gestation, every 2 weeks until 36 weeks, and weekly until birth. It is estimated that a woman 'booking' at 20 weeks gestation and delivering at 40 weeks would make 10 antenatal care visits (Wang et al., 2008). In the past decades, the midwifery profession was on the wane as China aspired to medical modernisation (Cheung et al., 2009). Obstetric nurses, obstetricians and doulas gradually replaced Chinese midwives, with virtually all of the remaining midwives practicing in labour wards (Cheung et al., 2009, 2011). The antenatal care has been provided by obstetricians in the hospital and has always had a primary focus on the medical aspects of pregnancy, by promoting health and preventing complications in the expectant mother and baby (Yang et al., 2007). In the 1980s, the Chinese government introduced childbirth education as an integrated part of antenatal care with obstetric nurses or midwives as the dominant childbirth educators (Ge et al., 2009).

New sources of information, such as the Internet, have been developed in mainland China recently. It has been reported that Internet penetration rate rose to 38.3% in 2011, increasing by 55.8 million Internet users in mainland China (China Internet Network Information Center, 2012). A few studies have explored pregnant women's use of the Internet as a source of health information in western countries (Larsson, 2009; Lagan et al., 2010; Santis et al., 2010). However, little is known about Chinese pregnant women's use of the Internet.

An understanding of how pregnant women use the Internet as an information tool is important to guide the work of childbirth educators and other health professionals' worldwide (Lagan et al., 2010). Thus, the aim of this study was to describe access to and use of the Internet among pregnant women in mainland China. The questions addressed were: whether, and how often, pregnant women in mainland China searched the Internet; what kind of information they looked for; how they perceived the reliability of the information and whether or not this was reflected in interactions with their health professionals?

Methods

A cross-sectional descriptive study was used to meet the objectives of this study. It was carried out in Guangzhou from September to October in 2011. Guangzhou is the capital of Guangdong Province located in southeastern China and has a population of approximately 10 million people. The study was carried out in one general hospital, a leader in providing obstetric services in Guangzhou, where about 3,000 babies are delivered per year. Chinese women, who were at least 32 weeks pregnant, visited the antenatal clinics in the study hospital and finished the childbirth education classes, were invited to participate in the study.

Permission to access the study site and ethical approval were gained from the study hospital and the Sun Yat-sen University. Potential respondents were informed about the purpose and procedure of the study and the women's written consents were obtained before inclusion. Voluntary participation and confidentiality of data were assured. It was emphasised that refusal or withdrawal from the study would not influence the care received.

After gaining ethical approval, a pilot study on 10 eligible women was carried out to assess the logistic issues in the feasibility of the study and to identify any unpredicted data collection problems. No problem was reported. A training session was provided for the research assistant (RA) to ensure the accuracy and consistency of the data collection.

The trained RA was responsible for collecting data. All eligible subjects who were waiting for their appointments at the obstetric out-patient clinic of the study hospital were invited to participate in the study. After giving informed consent, the participant was asked to complete the questionnaire in an interview room. The RA remained in the vicinity to answer questions and received returned questionnaires personally. The duration of each data collection was approximately 15–20 mins. All data were collected during a 2 month period in 2011.

The questionnaire contained 23 items: Eight of the questions were on the demographics (age, parity, gravity, gestational week, education level, job and monthly household income); eight questions explored the extent of Internet use including access to the Internet, type of Internet connection, and characteristics of the Internet use. One open-ended question explored the kind of information searched for on the Internet. Two questions identified women's perceptions of the reliability of the information and how they judged it. Two questions investigated women's interactions with their health professionals. Two questions asked the multiparous pregnant women whether they searched for the Internet in their previous pregnancies and how they perceived the usefulness of the information.

The 23-item survey questionnaire was based on the literature reviewed (Boer et al., 2007; Larsson, 2009; Lagan et al., 2010). Of them, 21 items were adopted from Larsson's study (2009). After the questionnaire was developed, it was reviewed for content validity by five midwives. These experts provided written feedback on the clarity and relevance of the questionnaire, but were not requested to provide a quantitative rating for each item. No item was revised. Before the investigation the questionnaire was pilot tested among 10 pregnant women in this hospital. All women could understand and complete the questionnaire easily, so no changes were needed. The 4-week test–retest correlation for the questionnaire was 0.96.

Quantitative data were entered and analysed using the SPSS for Windows, version 16.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to explore the sample characteristics (age, education level, pregnancy status, etc.). The respondents were divided into two age groups: 20–30 years and 31 years and older. They were also grouped by education level: 9–12 year schooling and university level of education. Differences in Internet use between the groups were tested with χ^2-test with Fisher's exact correction, and the significance level was determined for an alpha of 0.05. The responses to the open-ended question were analysed with content analysis; similar answers were grouped together to form the different categories presented in the results (Graneheim and Lundman, 2004).

Findings

Sample characteristics

A total of 400 eligible women visited the clinics during the period of investigation. Sixty-five women chose not to participate because of time constraints ($n=34$), and no interest ($n=31$). A total of 335 pregnant women consented to participate in this