Web-user profile in pregnant women from two Primary Care centers

Maria Sanz Almazán1, Marta Marina García Alonso1, Marta Esther Vázquez Fernández2, Carolina González Hernando3, Teresa Centeno Robles4, Inmaculada Pérez Sanz5


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Marta Marina García Alonso: mmgaralo@gmail.com

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Resumen

Objetivo: conocer el perfil internauta de las gestantes de dos centros de salud con el fin de desarrollar un blog materno-infantil con contenidos de alto interés.

Material y métodos: estudio descriptivo longitudinal de gestantes con fecha probable de parto de entre el 1 de mayo de 2014 y el 31 de marzo de 2015, con seguimiento de su embarazo y revisiones pediátricas del bebé en dos centros de salud urbanos. Se analizaron variables sociodemográficas y datos sobre frecuencia de uso de Internet, modalidades y expectativas.

Resultados: se analizaron 101 cuestionarios. Edad media de las embarazadas: 32.64 años. En parity groups 53.8% fueron nulliparous, 37.6% second birth, 8.7% third birth or more. 13% had a low education level, 43% medium (secondary studies) and 44.1% high education level. Devices utilized were 88.2% smartphone, 82.6% personal computer, 65.6% tablet and 52.7% family computer. A 79.6% used the Internet every day. The level of education along with the age of the mother influences the use of certain devices and the frequency of internet access. Main uses were email and browsing health information. Most viewed topics were motherhood, food and lifestyle. More than half frequently looked for information before or after visiting the doctor or nurse. The majority of women are willing to communicate and receive information with/from the caregiver by new channels such as blogs, social media, etc. especially in primigravid women.

Conclusiones: pregnant women frequently use the Internet to consult about health problems, specially those with high level of education and aged under 30. Primigravid women are the most interested. This experiment supports further development of education and communication tools such as health-related blogs.
INTRODUCTION

This may or may not be a novel subject. In recent years, we have become immersed in what has come to be known as an information society. These changes not only have a sociological impact, but also affect the health care field.\(^1\) In contrast with the former web 1.0 model, in which information consumers were mere spectators (readers), the web 2.0 concept emerged as a framework with tools that allowed the mutual exchange of information.\(^2\) This is reflected, for instance, in the growth experienced in recent years by health-related contents in platforms such as Twitter\(^\text{®}\), Wikipedia\(^\text{®}\), Blogger\(^\text{®}\), Wordpress\(^\text{®}\) and other social networks.\(^3\)\(^-\)\(^5\)

In Spain, the field of eHealth has developed considerably. Red.es and the Ministry of Health of Spain have been conducting studies on online health since 2005. In 2012, the Observatorio Nacional de Telecomunicaciones y la Sociedad de la Información (National Observatory of Telecommunications and the Information Society [ONTSI]) conducted a study based on a survey of the Spanish population on the use of information and communication technologies (ICTs) in the health care field. According to this study, 62% of the population used the internet, with a high frequency of daily users. In 2015 there was evidence of a significant increase in the search for online information, with the percentage of the population that searched for health-related information reaching 67.7%.\(^6\)

The purpose of our study was to learn the sociodemographic and internet-user profile of pregnant women to facilitate the creation of a blog with contents related to maternal and child health of great interest to the user and as accessible to families as possible.

MATERIALS AND METHODS

Study design

We conducted a longitudinal descriptive study. The study took place in the Arturo Eyres and the Huer-...
and interquartile range. We summarised qualitative variables as absolute and relative frequencies (number of cases and percentages).

We used Student’s t test to compare the means of normally distributed quantitative variables. We established the association or relationship between qualitative variables using the chi square test for 2×2 or r×c contingency tables and proportion comparison. We considered a significance level of 95% (P < .05) statistically significant in all the tests performed.

RESULTS

A total of 101 patients met the inclusion criteria in the two health care centres. The mean maternal age was 32.64 years (SD, 4.79). The distribution by age groups was: 35.6% aged less than 30 years, 38.6% 31 to 35 years, 24.8% 36 to 40 years, and 1% more than 40 years. Of all participants, 53.8% were primiparous, 37.6% had one child, 6.5% had two children and 2.2% had three or more children. The distribution by maternal educational attainment was: 2.2% had no education, 10.8% had completed primary education, 43% secondary education, and 44.1% had a college education. Of all mothers, 73.1% were employed, 17.2% unemployed, 8.6% were housewives and 1.1% were students.

The participants used electronic devices: 88.2% used smartphones, 82.6% laptop computers, 65.6% tablets and 52.7% desktop computers. Educational attainment was significantly associated with the use of specific devices: tablets (P = .03) were used by 0% of those without an education, 40% of those with a primary education, 65% of those with a secondary education and 75.6% of those with a college education; and laptop computers (P = .000) by 0% of those without an education, 30% of those with a primary education, 85% of those with a secondary education and 97.5% of those with a college education.

When it came to internet use, 79.6% used it daily, 11.8% weekly, 3.2% monthly, 2.2% occasionally and 3.2% never. The frequency of internet use was associated with the educational attainment of the pregnant women (P = .000), and those with a college education used it most often, followed by

Figure 1. Frequency of internet use in pregnant women by educational attainment

![Graph showing internet use by educational attainment](image-url)
those with a secondary education (Figure 1). However, we did not find significant differences when we compared primiparous and multiparous participants (Figure 2).

The reasons for using the internet were the following (in decreasing order): 87.1% to access electronic mail; 82.8% to search for information (health-related); 80.6% to search for information (work-related, travel, etc); 65.6% to participate in social networks and message boards; 65.6% to read the press (online newspapers, news sites, etc); 61.3% for online banking; 59.1% for shopping; 52.7% to download digital contents (music, films); 41.9% for education; 38.7% for entertainment (video websites, online gaming…); 22.6% to manage a blog or website; and 9.7% for other purposes.

Of all participants, 75.8% reported having used the internet in the past week, 17.6% in the past month, 2.2% in the past year and 4.4% not remembering when they had last used it. Maternal age was associated with the frequency of internet use ($P = .004$), with mothers under 30 using it most frequently (Figure 3).

The health-related issues searched most often were motherhood (82.6%); nutrition and lifestyle (52.2%); diseases (29.3%) and medications (14.1%), while 1.1% reported not searching any health-related information.

Information was sought online before or after visiting with the midwife or paediatrician by 44.1% of participants; 14% did it often and 41.9% never did. Of those who sought information, 34.9% did it before their appointment and 58.1% after.

Another factor under study was the use of social networks (Twitter®, Facebook®, LinkedIn®, Google+®, etc.). The ways in which these were used to search for health-related information were: information on a specific topic or to better understand points that were unclear to the participant (32.6%), a general interest in health topics (19.1%), to acquire new health-related knowledge and improve self-care (15.7%), to search for contact information for health professionals (doctors, clinics, medical advances etc; 7.9%), to receive advice and empathy from other individuals that have the same health problem (7.9%), to learn and share experiences on a specific health problem (4.5%), and for other reasons (5.7%).
Of all participants, 77.4% expressed an interest in having their midwife, nurse or paediatrician use new channels (message boards, social networks, blogs) to communicate with patients, 12.9% reported feeling indifferent, and 9.7% that they would not like it. The analysis by parity showed that primigravid participants were most motivated to use new channels of information (84%) followed by women with one child (74.3%) and women with two children (50%) \( (P = .3) \) (Figure 4).

The topics on which they would be interested in receiving more information through new channels are motherhood/fatherhood (87.1%), breastfeeding (74.2%), childbirth preparation (73.1%), healthy nutrition and lifestyles (72.0%), diseases (48.4%), medications (41.9%) and others (5.4%).

**DISCUSSION**

The internet has become the main source of health-related information. The joint review of the World Health Organization and the International Telecommunication Union demonstrates the essential role of ITCs in the health care field.\(^7\) In fact, concepts such as eHealth and telemedicine are already in use.\(^8\) But there is little information on how pregnant women use the internet and their priorities in web browsing. Our study focused on pregnant women, most of who were aged less than 40 years and half of who were pregnant for the first time.

We found that a large number of the pregnant women that receive care in our centres use the internet daily (79.6%), especially by means of mobile devices. Both the use of different devices and the frequency of internet access were associated with age and educational attainment. These results are consistent with those of other studies in which consumers of health information tended to be young and have a higher than average educational attainment.\(^9,10\) However, we found no data in the literature regarding the association with parity.

The search for health-related contents on the internet keeps growing.\(^6\) In our sample of pregnant women, this was the second most frequent reason...
for using the internet, behind shopping, entertainment, online banking etc.

The health-related topics searched most frequently by internet users in general are diseases, nutrition and medication. In addition to these, pregnant women in our study were interested in topics related to motherhood/fatherhood, as expected.

Sixty-six percent of the mothers-to-be sought information before or after visiting their midwife or paediatrician. The fact that more than half of them reported doing so after having face-to-face visits and with the purpose of resolving questions underscores the need to create interactive support tools for these patients that would allow them to actively participate and ask questions and with which providers could promote health care initiatives or disseminate health news at a large scale.11,12

We also cannot forget the role that social networks play in health care in today’s world. According to our survey results, the most frequent reasons to use them were seeking information and clarification of aspects that were poorly understood. Twitter®, Facebook® and other social networks are also increasingly becoming platforms where users share experiences and seek advice.13

Most of the participants would like to receive information from health care professionals through new information and communication channels. The group that expressed the most interest corresponded to primiparous women.

Based on the results of the study and for the purpose of disseminating evidence-based information, the authors consider that communication by means of health blogs and social networks can speed up the health education process and is therefore a good tool for the optimisation of health care.
CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare in relation to the preparation and publication of this article.

ABBREVIATIONS

SD: standard deviation • ONTSI: Observatorio Nacional de Telecomunicaciones y la Sociedad de la Información • ICT: information and communication technology.

REFERENCES


