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Evaluation of a "Mother and Child Healthcare Blog" and post-use satisfaction: A Qualitative Interview Study

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Abstract

Objective: to increase the promotion of healthcare education and satisfaction by the use of a mother and child healthcare blog. *Design:* descriptive study of intervention with following effects measurement. *Setting:* Primary care center in Valladolid, Spain. Urban. *Participants:* Blog users. 30 weeks pregnant, 15 days post- delivery, and 3 months post-delivery women. *Measurements and findings:* a healthcare blog use was measured along 20 months by Google analytics in order to know the users´ level of satisfaction and their internet profile. 334 women were interviewed in three different stages (30 weeks pregnancy, 15 days, and one month post-delivery). First time pregnant, women have used the blog the most frequently and shown a high degree of satisfaction regarding the usefulness of it. *Conclusions:* we are facing a new type of healthcare education and a new source of information which have many local and international followers. The blog is a powerful and inexpensive mean of communication in mother and child healthcare. *Implications for practice:* In general, terms, nursing professionals are in charge of an important part of healthcare education. Using the type of initiatives shown in this article, they can leader and make visible their competences through multidisciplinary team work.

Keywords: Blog, maternity, pediatrics, health information, Internet.

1. Background and Significance

The health system is getting update, there for renew information and communication technologies are available in hospitals and Primary Care Centers. Professionals have gained fast access to patients' personal histories, prescriptions, and care protocols.

Alongside this modernization, patients are demanding new ways of getting informed, and the Internet has become the preferred tool for browsing health information. A survey carried out by Murray et al. in the US in 2003 showed that 31% of interviewed had looked for health information on the Internet (Murray et al., 2003).

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According to the *Health Information National Trends Survey*, that percentage increased to 61% in 2005, portraying a tectonic shift in the ways in which patients consumed health and medical information. Most patients had already looked for information online before talking to their physicians. The percentage of web users gathering health information from the Internet rose to 64% in 2009(Cohen &Adams, 2011).Only in the Detroit area, a study carried out by Kendra et al. (Schwartz et al., 2006) in 2006 showed that 78% of web users attending a General Practitioners (GP) office had accessed the internet to find information regarding health issues or medical conditions.

Regarding European countries (Beck et al., 2014), conducted a national survey among young adults aged between 15 and 30 years old in France in 2014. It revealed that 48.5% of web users searched for health issues online. In Spain, in 2010, a survey conducted by (Pfizer, 2010) revealed that 80% of the web users between 22 and 55 years old consulted the Internet to find health information. In 2012, the Spanish National Observatory of Telecommunications and Information Society (ONTSI) conducted a survey (Hernando et al., 2012) addressed to the Spanish population about the use of information and communication technology (ICT) in the health sphere. The study revealed that 62% of the populations were Internet users with a high connection frequency (ranging from daily access to 5 days a week in 42.5% of the cases).

Clearly, the Internet has become an easy access source of knowledge, and in the last few years, users have increased its use for gathering health information. Most physicians are already experiencing the effects of patients showing up to their offices armed with printouts from the World Wide Web and requesting certain procedures, tests, or medications(WHO and ITU, 2014; Jadad and Enkin, 2007; Eysenbach, 2008).

The *Health Information National Trends Survey* of the United States concluded in their online health activities survey (Hesse et al., 2005) that on-going attention may be needed to adjust reimbursement policies for time spent with patients interpreting printouts, for accommodating shifts towards informed and shared decision making, for steering consumers to credible information sources, and for attending to the needs of those who fall through the cracks of the digital divide. People are turning to the World Wide Web as an information source of first resort, while relying on health care providers as their most trusted arbiter of information quality (Hesse et al., 2005).Health professionals should find the best way to give information to their patients. Patients with chronic conditions are increasingly engaged, enabled, and empowered to be partners in their personal care and encouraged to take responsibility for managing their conditions with health care professional support (Townsend et al., 2015).

Primary healthcare centers and multidisciplinary teams provide personal and public health services. GPs are meant to be the first port of call and gatekeeper in the health system and solve more than 80% of citizens' health problems. In Spain, public health services are closely linked to primary healthcare. E.g. some public health policies, such as management of epidemiological surveillance and provision of preventive medicine and health promotion, are managed by regional governments. GPs and practice nurses carry out these public health services within their normal workflow (Medinilla et al., 2010).Healthcare professionals have to be able to evaluate their interventions, and communicate more complex information to help patients in different situations.

Subsequently, the great use of the World Wide Web along with social networks has conceived a new way of communication. New concepts such as e-health, m-health, or digital single market have emerged. M-health concept was born within e-health due to the fact that nearly 98% of the world's populations are mobile phone users.

In Spain, e-health has developed considerably since 2005, according to the study carried out by the Department of Health and Red. es (2012). In primary care specifically, 77% of Spanish GP practices use a computer, 51% are connected to the Internet, and only 36% use a broadband connection (Medinilla et al., 2010). The increasing complexity of health services demands more specialised and skilled professionals, able to manage new ICT to assess care and help patients with their different health issues (Martínez, 2007). Women's and children's health are a global imperative incorporated into the Millenium Development Goals which aims to reduce maternal and child mortality in2015 (United Nations, 2010).

The 2014 Joint Report from the World Health Organization and the International Telecommunication Union (WHO and ITU, 2014) shows the ITC central role in information and communication and in particular in electronic health or e-health, to achieve these objectives.

The volume of information has grown exponentially as a consequence of the increase of internet use. However, it has not been accompanied by an increase in interaction as the communication and education processes have barely been modified (they are still reduced to face to face encounters). This requires extra time from the doctor's and nurses' to solve doubts related to information found on the Internet (usually from non-reliable sources). The web 2.0 has become a potential source of health communication, and in particular blogs (Carrillo et al., 2011).The usefulness of blogs is based on psychological and emotional aspects that can involve a closer relationship with the health professional (Castells et al., 2007). Blogs have proved benefits as health education complement (Estévez, 2010), although there are not many studies to compare the potential of these tools yet (González de Dios et al., 2013; Alvarez et al., 2007).The bounce rate is the percentage of single-page, visits in which the person left the site from the entrance page. It is a rate is a measure of visit quality and a high bounce rate generally indicates that site entrance pages are not relevant to visitors(Google Analytics, 2015).Thus, the higher rebound ratio, the lower Google ranking Web 2.0 is based on its capacity to establish a professional and client fluent dialogue and therefore offers possibility to provide information, broaden knowledge, publish news, and to communicate despite the distance, etc. (Valverde, 2008).The *Asociación Española de Pediatría* (Spanish National Pediatrics Association)considers blogs to be a reliable and easy access source without failing to be rigorous and ethical (González de Dios et al., 2013).

In the field of Primary Care, and specifically in the areas of maternity and pediatrics, the need for health information has been detected. Pregnant women and parents demand useful and reliable information to fully complement verbal information.

The institutional publications or individual professionals websites are the most trusted (Red.es, 2012).The study carried out in Spain in 2012 directed by ONTSI revealed that health providers and pharmaceuticals were the most trusted (8.42 and 7.44 over 10 respectively) (ONTSI, 2012). Therefore, due to Web 2.0 revolution and the reliability that information coming from the professionals means to the patients, the present project aims to verify the utility of a blog as a health education tool that was born to client's demand (Vázquez & González, 2013).

Objective

To create and evaluate a maternal and pediatric health blog directed to pregnant women, women who have just given birth, and parents. To increase diffusion of health education and raise the satisfaction level of the users of the blog.

Methods

In the design of this descriptive exploratory study, the descriptive blog variables were measured through the platform Blogger and the Google Analytics program after 20 months in use from 8 December 2013 to 15 August 2015.

Satisfaction surveys were carried out. Women coming for their first pregnancy control willing to participate in the study completed the survey consecutively in their 30 week pregnancy, 15 days post-delivery, and 3 months post-delivery. An ad-hoc questionnaire was elaborated for each moment. A health blog directed to pregnant women, women who have just given birth and parents, was designed, and implemented by the research team. This interventional study with post-effect measurement was conducted in a Health Centre in Valladolid (Spain) that covers a population of 19 578 inhabitants, 10 212 women and 9 366 men, and has 125 births per year. The collaborating team for this project was formed by two pediatric nurses, two pediatricians, a social worker, a midwife and an Internal Nursing Resident as well as two Internal Medicine Residents.

Other professionals, such as community nurses, dermatologists, psychologists, gynecologists and physiotherapists, also participated in the project to bring a multidisciplinary focus to the blog.

Quality of information

The midwife, pediatrician, and pediatric nurse interviewed every pregnant women attending scheduled monitoring visits, women attending birth preparation classes, women who had just given birth or parents attending the clinic with their children. They were asked to participate in a study to evaluate a maternity and pediatric health blog as a complement of the in office consultation. Those who were willing to participate signed the informed consent and were included in the study. Once included in the study, access to the blog was explained to the participants, and they were asked to enter the blog and navigate, as they felt useful. The blog was edited by two members of the research team, a midwife, and pediatrician, in order to filter entries and control the scientific and quality content of the page. Literature research was made on every subject and the contents were written in easy, comprehensible language. Periodic controls of the use of the blog during the study period were carried out through the indicators in Google Analytics: number of visitors, number of visits, average time of use in each visit, bounce rate (users that visit the blog and leave without visiting any page), new users visits (to assess the users fidelity) pages visited, demographic data (country, city and language of the users), system of access (to know what navigator the users used, operational system and service supplier), access via mobile phone (and what operational system they use), number of publications, post, comments, etc.

Limitations of the study

The creation and implementation of the blog will show results that are more specific over a longer time period. The education level of users was difficult to measure, for this reason, indirect indicators were used.

Ethical aspects

This project was designed under the recommendations of the Declaration of Helsinki 2013. The Data Protection Law 15/1999 was strictly obeyed. There was no funding available for this project. No conflict of interest exists.

Findings

Blog descriptive

After 20 months, 232 posts were published. Eleven categories were created: contraceptives, health care, pregnancy care, children care, child education, breastfeeding, maternity, children's health, birth preparation, social and health problems. The most visited entries were: "mosquito bites", "rhino conjunctivitis" "when a mummy is born, a baby is born" "how much a baby must sleep" and "Keel exercise and vaginal balls". Most of the visits came from Spain (73.7%), followed by United States (10.49%), Mexico (2.7%), Chile (1.9%), Argentina (1.9), Peru(1.06%), Colombia (0.91%), Germany(0.83%), France (0.82%) and Switzerland(0.59%) among others. The total number of visited pages was 85697, the number of users 13875, and 19 375 sessions and an average duration of 1.40 minutes. The average number of visited pages per session was 4.42. The 71.6% were new visitors. The bounce rate was 42.15%.

Relating the socio-demographic data, the results obtained were as follows: 82.7% of the users were women. 41% were aged between 25 and 34 years old, followed by users aged between 35-44 years old (33%). Most of the visits were from users from Spain (73.5%) and 26.3% were international visitors.

Satisfaction surveys

One hundred and six surveys showed that our average pregnant women's age was 31.3 years old (SD 4.9). 63.5% of the users were women during their first pregnancy, 28.6% had one child, 4.8% two children, 1.6% three children and 1.6% four or more children. 1.6% of the mothers interviewed were not educated, 11.1% had passed primary education, 47.6% secondary studies, and 39.7% had higher education studies. 66.7% were actively working, 31.7% were unemployed, and 1.6% was a student.

The level of satisfaction (Table 1) about contents, utility, ability to clarify problems was, in all cases, above eight on a scale of ten for the three groups of women.

Table 1: Level of satisfaction of the blog in 30 weeks pregnant women, 15 days post-delivery and 3 months post delivery.

	Thirty weeks pregnancy N=33	Fifteen days postpartum N=42	Three months postpartum N=31
Contents	8.39 (±0.86)	8.50 (±1.21)	8.22 (±2.02)
Utility	8.27 (±1.15)	8.62 (±1.30)	8.35 (±1.97)
Problem solving	8.15 (±1.52)	8.68 (±1.19)	8.39 (±1.96)
Reliability	9.12 (±0.93)	8.92 (±1.24)	8.77 (±1.94)
Global satisfaction	8.78 (±1.05)	8.78 (±1.32)	8.25 (±1.96)

The use of our blog exceeded the minute of average duration, and five pages were visited per session. Satisfaction was also determined by the content of comments and acknowledgments. In addition, the blog has received the award "Heath Interest Web" by the Regional Government in October 2014 and financial support for further development in October 2015.

Discussion

It is crucial that the information user's receive from a blog is scientifically reliable. Our blog has quality accreditation awarded by the Regional Government in October 2014. According to the results obtained, we confirm that blogs complement the health education implemented inductors', nurses' and midwives' daily practice (portalesmedicos.com, 2014).

Therefore, healthcare professionals should have the ability to communicate with their patients the ways required, and the Internet is an option that has developed significant currency. Web 2.0 allows reliable health information to be broadcasted to users. However, its scientific value can only be restated through the appropriate knowledge and use by health professionals (de la Torre et al., 2014).

We agree with other authors (WHO & ITU, 2014; Jadad & Enkin, 2007; Eysenbach, 2008) that it is not only an information tool but also an attitude. The health blog provides more efficient actions generating quality information that responds to the needs of parents or future parents.

The most visited entries were: "mosquito bites," "rhino conjunctivitis" "when a mummy is born, a baby is born" "how much a baby must sleep" and "Kegel exercise and vaginal balls." This confirms the fact that the major Internet health information engine searches are related to disease or ailment, and to a lesser extent, food of lifestyle related prevention. This data coincides with the study published by the ONTSI and (Red.es, 2012) carried out in 2012 in Spain.

The health blog provides more efficient performances generating quality information prepared for the needs of the parents or future parents. It has also improved teamwork, technology management, participation, and professional enrichment from various disciplines. It has great implications for nursing researchers as they will be able to study in a longitudinal way the interest of their patients (Keim-Malpass et al., 2014). As expected, most of the visits were local. However, it has been observed a surprising international demand. In General, terms, it has been described that the average time users spend reading any blog posts is 20 seconds. Patients have expressed their acknowledgement and great satisfaction through good results in satisfaction surveys, but also through personal comments left on the blog.

This project is the first Spanish experience from primary care professionals directed to public health pregnant and pediatric patients.

Conclusions

- The technological development achieved through blogs and social networks for health is a very practical support for in-practice midwives, GPs, pediatric nurses, and pediatricians' consultations.
- A blog can complement the education for health activities allowing an active patient role.
- A blog improves knowledge with scientific evidence, as well as the interaction between e-patients and professionals and the informed decision-making process for pregnant women and parents in relation to their child's health.
- Nursing professionals can lead initiatives and make their competencies visible through initiatives like this one.
- The Web 2.0 tools improve the use of health services and the satisfaction of patients providing information coming from health professionals.
- The blog has received a Quality Award "Heath Interest Web" by the Regional Government in October 2014 and financial support to continue with the project in October 2015.

Conflict of interest

No conflict of interests has declared by the authors

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