

Information and Communication Technology for Obstetric Good Practices

ORIGINAL

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Abstract

Objective: To investigate the use of information and communication technologies in good obstetrical practices.

Method: It is an integrative review, carried out in December 2016, by three researchers. For the search of the works, the descriptors indexed in DECS were used: "Information Technology; Obstetrics; Software; Professional Practice". We found 105 articles, of which 6 were the sample used.

Results and Discussion: The studies found have dealt with the use of different information technologies, demonstrating that they are essential to good obstetrical practices because they provide security and greater access to information, as well as provide a more efficient diagnosis and consequently an adequate treatment.

Conclusion: It is essential to use the technologies to achieve good obstetric practices throughout the health team. However, it is still necessary to carry out studies, as well as the creation of software that gives greater security to the welfare practices.

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Keywords

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Professional Practice.

Introduction

The Information Technology (IT) has become part of everyday life for people around the world. The application and use of technology pro-

ducts and computer-based technologies for health care is a permanent process in evolution [1]. This accelerated development of scientific and technological modernization has generated new ways of building knowledge and establishing relationships with the world of work. It is believed that in the following years, advances in computational technology will revolutionize the processes at all levels of nursing services in health institutions, providing operational and strategic benefits for the organization and development of professional practice [2].

Information and Communication Technologies (ICTs) are used by individuals and organizations to monitor the speed with which transformations are happening in the world; To increase production and improve product quality; to support the analysis of markets and to make agile and effective interaction with markets, with customers and even with competitors [3]. In health, information is made available exacerbated and, inherent in them, technology must be present and necessary to the adherence of ICTs to the processing of this information as quickly as possible [4].

IT is one of the fundamental components of the organizational environment today, as it offers many opportunities for institutions that are successful in taking advantage of the advantages that technology can offer. The use of IT offers business benefits that include cost, productivity, quality, flexibility and innovation, and each use has its own composition of these benefits. The challenge for organizations is to determine, more precisely, which technologies, among the ones offered by the market, best fit the needs of the service, because such identification can increase the benefits in organizational performance [5].

However, the discussion that involves the theme of being human, care and technology becomes increasingly conflictual and critical, with pessimistic and optimistic opinions. ITs and their relation to human care in nursing can be thought of as a complex challenge. This fact permeates the Nursing scenario

when, on the one hand, some professionals resist the appropriation of these technologies and, on the other, the challenge is placed in its use as a tool to integrate the various dimensions in the care context [6].

In its daily routine, Nursing uses computer technology to monitor patients, electronic records, search for knowledge and online surveys, and access to the Internet and the institutional intranet. *Softwares* are built to support care and patients. Through these actions, computerization has increasingly approached the nurse, which has given more effective options and solutions to this user's needs [7].

It is important to consider that nursing practice can reach levels of excellence through the use of these technologies, which should be integral elements of the assistance context as a tool to support decision-making, obtain data and generate new information and knowledge [8].

The concept of technology also involves knowledge and skills that need to be distinguished from equipment or apparatus. With a focus on health, it can then be understood as a structured knowledge applied with intentionality and justification and that produces a result that satisfies the individualized needs of human beings [9].

In the context of the use of ICT for good obstetrical practices, it is understood that the combination of its dimensions - light, light-hard and hard - emphasizes the emphasis on the potentialization of knowledge aimed at the elaboration of the development of care practices related to the processes of gestation and birth that are not invasive to the physiology of the body, mind and privacy of the female being [10].

The non-invasive nature of obstetric nursing care technologies lies in believing that when the subject establishes a bond of trust with the professional, both share the decisions in planning their care. Therefore, even when the procedures touch intimate parts of the biological body or the socio-

cultural body of the woman, these are not perceived as invasion of privacy, the physiology of the body or even the mind. Therefore, the objective of the present study was based on research on the use of information and communication technology for good obstetrical practices.

Method

This is a systematic review of the literature that sought to answer the following question: How new information and communication technologies have been used to develop good obstetrical practices?

A systematic review, as well as other types of review studies, is a form of research that uses as literature data a specific topic. This type of research provides a summary of the evidence related to a specific intervention strategy, through the application of explicit and systematized methods of searching, critical appraisal and synthesis of the selected information [11].

Systematic reviews are particularly useful for integrating information from a set of studies performed separately on a particular therapy/intervention, which may present conflicting and/or overlapping results, as well as identify issues that require evidence, assisting in guiding future research [11].

The review followed the following steps: 1- formulation of the scientific question; 2 - location and selection of studies; 3 - critical evaluation of studies; 4 - data collection; 5 - analysis and presentation of data; 6 - data interpretation, 7 - improvement and updated revision [11].

This study was conducted with the participation of three researchers who independently researched and evaluated the quality of each article. To go through the research steps, a research protocol was created, being used in the search of articles, containing the forms of research, the inclusion and exclusion criteria, presentation of the variables of interest and the analysis of the results obtained by each study.

This study was carried out in the national and international databases, where scientific articles were searched; On PubMed, whose database was the Medical Literature Analysis and Retrieve System Online (Medline); in the Virtual Health Library (VHL), whose database was used in Latin American and Caribbean Literature in Health Sciences (LILACS); in the Scientific Electronic Library Online (SciElo) and Google Scholar. The search in the databases took place in December 2016. For the search of the works, the descriptors indexed in English and Portuguese were used, "Information Technology; Obstetrics; Software; Professional Practice"; all interleaved by the Boolean operator "AND", with which the combinations shown in **Table 1**.

Table 1. Study search strategies, 2016.

Combination of descriptors/ Databases searched	Identification	Screening	Eligibility
Information Technology and Obstetrics			
LILACS	10	2	1
MEDLINE	3	1	0
SCIELO	0	0	0
Google	57	4	2
Obstetrics and software and professional practice			
LILACS	4	2	1
MEDLINE	2	1	0
SCIELO	7	2	1
Google	22	3	1
Total	105	14	6

Source: Research Data, 2016.

Therefore, inclusion criteria were included: full text available; Languages: English or Portuguese; Published in the period from 2006 to December 2016, in the format of article. Exclusion criteria: documents in duplicate, in addition to those studies that did not directly address the issue in focus.

In this way, the research found 105 studies. With the filtering of the manuscripts and application of

the previously established inclusion and exclusion criteria, 14 studies were found. Subsequently, the titles and abstracts were read, followed by a thorough reading of the selected articles. Filtration of materials ended with 06 articles.

The analysis and presentation of the articles was carried out based on the instrument constructed containing the categorical variables to be extracted from the manuscripts: authors, year of publication, journal name, impact factor, database, article title, study characteristics, challenges in the use of technologies, advantages with the use of technology. The analysis of the articles was carried out in a systematic and critical way, through a thorough reading of the studies.

Results and Discussion

Table 2 was constructed to construct the results. Thus, the studies belonging to the sample ($n = 6$) were characterized when the authors, language, publication magazine, database and study title. Therefore, in this classification, it was observed that

most of the articles are available in Portuguese ($n = 5$), published in several national and international journals, and the Google Academic Directory is the place where the greatest number of searches indexed to the subject.

Therefore, the number of publications on the subject in focus is small, which shows a gap in research on the use of technologies. This finding reflects, therefore, the innovative character of the present study. (**Table 2**)

The investigated studies dealt with different information technologies applied in the context of obstetrical practices. The article of number 1, deals with the application of software known as DI@Next, which raises questions and reflections on adolescent pregnancy and emergency contraception, in order to guide the health teams [12].

A multimedia application used by researchers, presents cases in the form of comics with musical background, the answers that the adolescents of the research gave on the cases presented, the opinions of the professionals on each of the answers and general information on emergency contracep-

Table 1. Distribution of the domains and facets of QoL. João Pessoa, PB, 2015.

N°	Authors	Year	Language	Newspaper	Data Base	Study Title
01	Lefevre	2012	Portuguese	R. Eletr. de Com. Inf. Inov. Saúde.	Google Academic	Adolescent pregnancy and emergency contraception. ODI @ software as a virtual help for teams of health
02	Sciarra; Batigália; Cabral	2011	English	J. Morphol. Sci	LILACS	Development of an educational software for the learning of obstetric anatomy addressed to nursing
03	Carvalho	2009	Portuguese	Digital Library of Computer Science	Google Academic	Digital Pre-Natal: A Collaborative Environment for Discussion of Clinical Cases in Obstetrics
04	Araújo Júnior	2008	Portuguese	FEMINA	LILACS	Application of new software in 3D ultrasound For the prenatal diagnosis of fetal malformations
05	Macedo	2008	Portuguese	Esc Anna Nery Rev Enferm	SciELO	The Care Technologies of Obstetrical Nursing Based in the Environmental Theories of Florence Nightingale
06	Silva	2007	Portuguese	Academic seminar of academic production	Google Academic	The inclusion of mobile technology in Obstetrical office records

Source: Research Data, 2016

tion. This type of technology makes the individual identify with the situation, which is very important in the context of obstetrics, since it may be able to make the adolescent aware of having habits that avoid an unwanted pregnancy [12].

The article developed by the authors Sciarra, Batigália and Cabral (2011), also discusses the use of software, in this case, a tool to enhance the teaching-learning process. Thus, it is a software (didactic CD-ROM) about the Learning Process of the Obstetric Anatomy of Nursing through a careful selection of anatomical keywords related to Obstetrics. The development of educational software favors an interaction between Human Anatomy, Pedagogy and Computer Science. These authors also identified how useful these tools are for providing knowledge in the various virtual scenarios and complementing learning [13].

The study proposed by Carvalho et al. (2009) reflects on the importance of the use of telemedicine, strengthening that through this one can manipulate information at a distance, using the electronic means, for support and assistance to medical practice and health services. This fact corroborates with the previous study on the use of technologies for good care practices in obstetrics. From its use, it is observed that the possible mistakes made can be avoided. The professional when consulting and making use of telemedicine as well as another application will have more confidence in its prescription and assistance [14].

Araújo Júnior et al. (2008) worked on the use of hard technology, through the application of 3D ultrasonography for the diagnosis of fetal malformations in prenatal care. These authors used the technology known as multiplanar mode, with which multiple planes can be obtained in different directions, a fact that is not possible in the conventional two-dimensional mode. This surface model allows to evaluate in detail the fetal surface and promotes an easier understanding of the existing/diagnosed disease [15].

It is emphasized that in the medical literature, there are only three studies describing the potential applicability of this new technique. Thus, it should be emphasized that in many fetal malformations magnetic resonance imaging is shown as a complementary methodology to ultrasonography and, therefore, the development of three-dimensional software that associates the benefits of both techniques would be of great practical importance due to lower costs and more accessibility [15].

It is valid to add the view brought by Macedo et al. (2008), regarding the care provided to women, especially nursing. These professionals, who use the technologies of care, aim mainly at the decision-making power of the woman, so as to help her to make the best use of the delivery, without performing interventions that are unnecessary [16, 17].

Finally, in a comprehensive way, Silva et al. (2007) raises questions about the electronic medical record and the importance of its use. Currently the individuals' records are documents in *bits*. This new model has come to reduce costs, increase information agility and security. However, resistance is still strong in using such technologies, given the lack of knowledge on the part of the professionals themselves [18].

Brazil is still a beginner when it comes to mobility in the obstetric medical field. Therefore, there are many areas that still require devices and applications developed with specific purpose for collaboration, agility and reliability in the treatment aided by the complete and growing set of information compiled about the pathology of each patient [18].

Conclusion

The study was able to reflect on the importance of the use of information technology and communication of the assistance process and good practices in the obstetric environment. There are several technologies that can be employed, even if they are light,

light-hard and hard. However, more emphasis was placed on hard technologies for the application of the mentioned softwares.

Thus, it has been clearly understood that information technology is increasingly being used by the health sector. This association is of paramount importance for the diagnosis and guidance of critical care and diagnostic practices for patients. Their use confers greater possibilities of treatment and safety in the recommendations given by the health professionals.

It was observed that the insertion of Brazil still leaves something to be desired in this medium, but that it has walked in short steps, which shows that there are professionals attentive to the new demands of the health market. It is therefore of the utmost importance that studies on the development of information technologies are developed, especially on light and hard technologies.

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