

## Technology Advances in Health Area: A Literature Review Aper Title

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**Abstract:** *Technology influences the life of human beings in different ways always with the objective of promoting the rise and development of knowledge in pursuit of quality of life and health, in health, technology is not opposed to human touch, but is configured as agent and the object of this touch. This study aims to know the literature production in the selected area on the analysis of the technological development in health. This is a descriptive, exploratory study with a qualitative approach, the literature review type, and made from certain inclusion criteria: that specifically address the proposed theme; in Portuguese; available in its entirety on the selected databases; restricted to fifteen years (2000-2015). As a result, they found 43 articles related to the undertaken search and only fourteen met the proposed criteria, this study-bucou unfold a little more about the reflections of this area can be said that the advancement of technology in health is essential to provide better patient care and consequently a better quality of life.*

**Keywords:** *Health, Technology, Technological development*

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### I. Introduction

Humanity is constantly evolving, always looking for innovations that facilitate our lives in some way, it would be necessary to live today without certain features and tools such as electric power, automobile, airplane, computer, landline and mobile telephony, television and internet. Through this life the influence of the human technology in different ways always with the objective of promoting the rise and development of knowledge in pursuit of quality of life and health [1]. Computers entered the nursing, especially in the area of greatest work of nurses at the time, ie, in hospitals, in the 50s The biggest challenge initially was to understand the capacity of available programs and tools, they were more used in management areas improving their use in the institutions. Today, we have to focus our attention to the applicability of these many resources in order to bring benefits and improvement in nursing work in any area of expertise, not only manages more also in patient care [2].

In the health field, the technology is not opposed to human touch, but is configured as agent and object of this touch. The care provided by the nursing is a process that involves many actions and given the complexity of its implementation, it is necessary the use of appropriate technologies. Technological innovation, when used for health contributes directly to the quality and effectiveness of care promoted to the patient. Thus it is believed that there is room for technology and ethical care / humanized [3]. There are three categories in health that address the use of technology, they are interrelated and are part of care, they are: hard technology: represented by concrete material and equipment, furniture; the hard light technology: represented in structured knowledge operating in the health work process, such as the medical clinic, the psychoanalytic clinic and epidemiology; and light technologies: relationships represented by the type of bonding, host management as a way to govern work processes emphasizes [4].

One of the great achievements of health due to technology is the electronic patient record and the records to the registration form most commonly used in hospitals, a source of primary information, essential for the patient in monitoring their health and disease. Because it is an extremely important document for generating knowledge of administrative, research and legal aspect, it is essential that it be fast and clear access to staff that provides assistance, making the computer a helpful tool in evolution that records in institutions [5]. The electronic medical record seeks to improve the work of the health team, as it allows faster access to patient information and documentation of care provided throughout life; also provides readability of data and integration with other information systems. The PEP should be a confidential system, which has assistance character, ethical, legal and scientific, providing communication between the members of the multidisciplinary team, the continuity of care provided to patients and have as main characteristic the simplicity of its use [6].

Technological innovations have come to add and improve health care, it is necessary to keep pace with technological development without untying the ethical and humanitarian aspects essential to the profession,

given that the objective of this work is to know the production of literature in the selected databases on the review technological development in health [7].

## II. Method

This is an exploratory, descriptive study, the type literature, qualitative approach, by identifying, reading and synthesis of the results of scientific articles. 20 articles related to search undertaken were found, though only 14 met the inclusion criteria, presented below, using the following keywords: Technology; Health and Technological Development. The search for articles was held in October 2015, through databases (oases), Virtual Health Library (BIREME), Digital Library of the USP and Scientific Electronic Library Online (SCIELO). The search amounted to 459 publications, of which only 274 of these were available in full in the selected databases. After that, we proceeded to the critical analysis of articles, based on inclusion criteria: studies that focused on the theme proposal for technology advances in health; articles available in full on the selected databases; in Portuguese language and published in the last fifteen years (2000-2015). not being related to technological advances: the articles addressed technologies for other purposes were excluded. After floating reading the titles and abstracts, excluding the repeated items, we reached a number of 43 items. Then, reading of selected articles was performed, if noting that 14 of these met the inclusion / exclusion established, these being selected for the study. Finally the data were analyzed initially on the title / author, database, periodic and year of publication.

## III. Results And Discussion

**Table1-** Articles on the topic.

Title	Author	Year
The new information technology and consumerism in health.	<b>Paulo Roberto, Vasconcelos-Silva, Luis David Castiel, Marcos Bagrichevsky, Rosane Harter Griep</b>	<b>2010</b>
There is no health without research: advances in Brazil 2003 to 2010.	<b>Reinaldo Guimarães, Luis Eugenio de Souza, Leonor Maria Pacheco Santos, Suzzane Jacob Serruya.</b>	<b>2012</b>
Nursing care Innovative Technologies.	<b>Elisabeta Albertina Nietsche, Marcia Gabriela Rodrigues de Lima, Maria d Graca Soler Rodrigues, Joice Ane Teixeira, Betimeire Nunes Bitencourt de Oliveira, Cristiane Apio Motta, Carine Soprano Gribler, Vitor Miguel Gliber, Daniele Deprá Ilha Lucas, Marta Kirchoff Fagundes de Farias.</b>	<b>2012</b>
Bioethics and Technology Assessment in Health.	<b>Fermin Roland Schramm, Claudia Caminha Escosteguy.</b>	<b>2000</b>
Technology and Innovation for nursing care.	<b>Pétala Tuani Cândido de Oliveira Salvador, Ramonyer Kayo de Oliveira, Theo Duarte da Costa, Viviane Euzebia Pereira Santos, Francis Solange Vieira Tourinho.</b>	<b>2012</b>
Historical evolution and impact of health care technology and nursing.	<b>Daniela Couto Carvalho Barra, Eliane Regina Pereira do Nascimento, Josiane de Jesus Martins, Gelson Luiz Albuquerque, Alacoque Lorenzini Erdmann.</b>	<b>2006</b>
The specifics of the healthcare system.	<b>Eduardo da Motta e Albuquerque, Jose Eduardo Cassiolato</b>	<b>2002</b>
Use of Health Technology Assessment review process for incorporating technology in the Unified Health System in the Ministry of Health.	<b>Hillegonda Maria Dutilh Novaes, Flavia Tavares Silva Elias</b>	<b>2013</b>
Health, development and technological innovation: New perspective approach and research.	<b>Ana Luiza d'Avila Viana, Fabiola Lana Lozzi, Mariana Vercesi de Albuquerque, Aylene Bousquat.</b>	<b>2011</b>
Technology, technological innovation and health: a necessary reflection.	<b>Jorge Lorenzetti, Leticia de Lima Trindade, Denise Elvira Pires de Pires, Flavia Regina Souza Ramos.</b>	<b>2012</b>
Advances and challenges of the National Health Technology Management Policy.	<b>Hudson P Silva, Clarice A Petramale, Flavia T S Elias.</b>	<b>2012</b>
Technological innovation in health and its interfaces with the process of humanization.	<b>Patricia Martiliano Batista, Debora de Matos Costa, Nayara Ariane L. Gonçalves, Gilvânia Smith da Nobrega Moraes.</b>	<b>2007</b>
The Brazilian health system: progress and challenges history.	<b>Jairnilson Paim, Claudia Travassos, Celia Almeida, Ligia Bahia, James Macinko.</b>	<b>2011</b>
Brazilian technological production in the nursing área.	<b>Micheline Henrique Araujo da Luz Koerich, Raquel Heloisa Guedes Vieira, Daniela Eda Silva, Alacoque Lorenzini Erdmann, Betina Horner Shlindwein Meirelles.</b>	<b>2011</b>

**Source:** *The author.*

The history of technological developments in health care, ie, hard technology began with the industrial revolution through the development of new technologies in virtually all areas of knowledge. At that time, applied science provided the advent of machinery and equipment replaced and / or minimized the need for manpower. The meshing machine / equipment is probably this first industrial revolution [4].

Although Brazil has initiated a strong system focused on science and technology, have invested heavily in research during the years 2003-2010, the Brazilian system still has challenges to face [8].

Technological developments in the nursing area has taken place through various philosophical and theoretical schools of nursing and that through a great effort history has targeted growth and improvement of nursing [9]. Several studies discuss about the relationship of technology in health and specifically in nursing, but point out that technological innovations in nursing practice there are still elements that need to be overcome due to the professional unpreparedness to relate to new technologies, which requires a reorganization level academic in the formation of these professionals [3].

Scholars, [10] confirm in their studies that the subject technology as a process and / or product still needs to undergo expansion, it still has outdated when analyzed by professional nursing practice and reinforces the need to discuss the relationship between nursing and technology. Some authors have reported the need to improve the relationship between nursing and technology, the improvement of health sector activities have a direct influence of technological progress, working directly in the economic, industrial and social development of health care [7]. Over the past 20 years there has been progress in the implementation of SUS (National Health System), strongly increasing health care for much of the population, investing in the expansion of human and technological resources [11]. New knowledge on advances and new techno-scientific discoveries in health are extensive and growing. New drugs and vaccines, prostheses, orthoses, machinery and equipment for making diagnoses and interventions, surgical robots, information and rapid communication, only national, integrated electronic medical record for international access, implants and transplants, artificial production of human cells, are some examples of fields of investment and work of thousands of technical professionals and scientists [1].

The technologies that are geared to health care include medications, equipment, technical procedures, organizational systems, educational and supportive programs and protocols assists through these that is given attention and care to the population. It also states that the hospital and clinics are scenarios of the great advances in science, which are used technical and increasingly sophisticated technologies both in diagnosis and in the treatment of diseases [1]. But, however, Brazil is still dependent on other countries in technology and the identification of this Question led the redesign and implementation of a new political strategy of science and technology [1]. The improvement of activities in the health sector has a direct influence of technological progress, working directly in the economic, social and industrial development of the health sector.

In health the use of technology enables us infinite possibilities is not possible to deny this fact, however we must question about the increasing advancement in technology and what its social implications, ie, have a critical eye when it comes to the impact that these technologies can have on health [12].

It is necessary to develop, strengthen, implement and require technologies and technological innovations are constantly subjected to ethical criteria to avoid and / or minimize the perversities of them. It is essential that technological incorporation must answer for goals based on better health care for the population, more resolute care and responsible, namely that science and technological innovation are conducted in order to prioritize the solution of serious structural problems of humanity [1].

With the use of descriptors in the selected databases came to the total of 459 publications. After filtering of all references and exclusion of 32 articles that were repeated in the databases was reached, the total of 8 items that were directly related to the theme of this study (Table 2)

**TABLE 2-** Summary of the search process of the studies selected for the integrative literature review, according to databases and inclusion / exclusion, 2015.

<b>Data base</b>	<b>Available full</b>	<b>Selected</b>
Óasis	167	3
Scielo	32	2
Bireme	86	3
Digital library of USP	174	1
<b>Total</b>	<b>459</b>	<b>9</b>

**Source:** *The author.*

It can be seen on such data as the subject in question is lacking in publications in national scientific literature, which since advancing pointed out by certain author technology also occurred in health is worrying, with the introduction of information technology and appearance of modern and sophisticated devices that have brought many benefits and quickness in the fight against disease. Thus this modern technology, created by man

in the service of man, has contributed largely to problem solving unsolvable before and now we can reverse in better conditions of life and health for the patient [4]. Of the 9 articles analyzed in this study 6 they were published in different journals, and 2 journals contained only one publication on the subject, while the Electronic Journal of Nursing presented two papers on the topic, the Journal of UERJ Nursing presented 3, the Journal of Political economy presented 5 and the Nursing Journal of Rio Grande do Sul presented 2 as can be seen in Table 3.

**TABLE3-** Distribution of articles analyzed according journals.

Periodicals	Available full	Selected
Nursing Electronic Journal (Ree)	2	1
Magazine Baiana of Public Health (RBSP)	1	1
Nursing journal of the UFSM	1	1
Nursing journal Uerj	3	1
Journal of Political Economy	5	1
Gaúcha nursing journal	2	1
<b>Total</b>	<b>14</b>	<b>5</b>

Source: The autor.

When examining Table 3, one can see that the majority of analyzed articles were published in journals dedicated to nursing, which can be justified by the fact that advances in health care have suffered greater impact on nursing, the use of technologies in nursing service currently perfected his practice in the care, both in technical assistance and bureaucratic-administrative activities, and in interpersonal relations between the different subjects involved [10]. So in your daily care routine, the use of technology occurs in various forms and is influenced according to the meaning attributed to its use, while care tool.

As the year of publication, the first study was published in 2000, with the highest concentration of studies on the subject took place in the years 2011-2015 (Table 4).

**TABLE 4-** Distribution of articles analyzed according to the year of publication.

Year	n
2000-2005	2
2006-2010	3
2011-2015	9
<b>Total</b>	<b>14</b>

Source: the autor.

In the international scientific literature found no studies on the technology advances in healthcare with recent publications, and been a significant delay in the start of the research on this subject.

#### IV. Conclusion

On the articles surveyed the advancement of technology in health care began with the introduction of computer technology and the emergence of modern, sophisticated devices that have brought many benefits and quickness in the fight against disease. This modern technology created by man in the service of man, has contributed largely to the troubleshooting before insoluble and can reverse in better conditions of life and health for the patient.

Given what was discussed from the queried data, it can be said that the advancement of technology in healthcare is essential to provide better patient care and consequently a better quality of life. The health sector must use increasingly advanced technological resources, but the professionals in this area should never be replaced the operation of a machine, since the essence of human care is essential for healing.

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