# **Nursing contributions to the development of the Brazilian Telehealth Lactation Support Program**

TELEAMAMENTAÇÃO NO PROGRAMA NACIONAL DE TELESSAÚDE NO BRASIL: A EXPERIÊNCIA DA TELENFERMAGEM

TELE LACTANCIA EN EL PROGRAMA NACIONAL DE TELESALUD EN EL BRASIL: LA EXPERIENCIA DE LA *TELENFERMERÍA* 

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#### **ABSTRACT**

The National Telehealth Program was founded by the Ministry of Health, in partnership with the Ministry of Education (Ministério da Educação - MEC) and the Ministry of Science and Technology (Ministério da Ciência e Tecnologia -MCT), to support the development of family healthcare teams throughout the country. The São Paulo Telehealth Center has developed the Telehealth Lactation Support program, which provides primary healthcare professionals with information on diverse aspects of breastfeeding. This paper reports the development of the Lactation Support program and the nursing contributions. Project methodology included the formation of a multidisciplinary group of pediatricians, nurses, speech and language therapists, nutritionists, and dentists. Multimedia teaching resources were prepared for inclusion in the Cybertutor platform. Telehealth Lactation Support is an innovative and promising addition to continuing education for healthcare professionals and provides a framework for the development of other programs.

### **DESCRIPTORS**

Breast feeding Education, distance Health education Health personnel Tchnology

### **RESUMO**

O Programa Nacional de Telessaúde é uma ação do Ministério da Saúde, em parceria com o Ministério da Educação (MEC) e o Ministério da Ciência e Tecnologia (MCT), e tem como proposta a qualificação das equipes de saúde da família em todo país. Nessa perspectiva, o Núcleo São Paulo de Telessaúde desenvolveu a Teleamamentação, que tem como meta proporcionar aos profissionais da atenção primária informações sobre diversos aspectos da amamentação por diferentes profissionais da área da saúde. Este trabalho tem por objetivo relatar a experiência da Teleenfermagem na Teleamamentação do Programa Nacional de Telessaúde no Brasil no Núcleo São Paulo. Como metodologia de trabalho adotou-se a criação de um grupo multidisciplinar composto por pediatras, enfermeiras, fonoaudiólogas, nutricionistas e dentistas. Foram elaborados materiais didáticos multimídia inseridos na plataforma Cybertutor. Vislumbra-se a Teleamamentação como uma estratégia inovadora e promissora por permitir um impacto relevante na educação permanente de profissionais da saúde.

# **DESCRITORES**

Aleitamento materno Educação à distância Educação em saúde Pessoal de saúde Tecnologia

### **RESUMEN**

El Programa Nacional de Telesalud es una acción del Ministerio de Salud, en colaboración con el Ministerio de Educación (MEC) y el Ministerio de Ciencia y Tecnología (MCT), y tiene como propuesta capacitar a los equipos de salud de la familia en todo el país. Desde esta perspectiva, el Núcleo Sao Paulo de Telesalud desarrolló la tele lactancia, que tiene como meta proporcionar a los profesionales de atención primaria, informaciones sobre diversos aspectos de la lactancia materna, por diferentes profesionales del área de la salud. Este trabajo tiene por objetivo relatar la experiencia de la Teleenfermería en la tele lactancia del Programa Nacional de Telesalud en el Brasil, en el Núcleo Sao Paulo. La metodología de trabajo adoptada fue la creación de un grupo multidisciplinario compuesto por pediatras, enfermeras, fonoaudiólogas, nutricionistas y odontólogos. Fueron elaborados materiales didácticos multimedia incluidos en la plataforma Cybertutor. Se vislumbra la Tele lactancia como una estrategia innovadora y prometedora por permitir un impacto significativo en la educación continuada de los profesionales de la salud.

### **DESCRIPTORES**

Lactancia materna Educación a distancia Educación en salud Personal de salud Tecnología

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# INTRODUCTION

The continuing education of healthcare professionals has been a concern for the Brazilian Ministry of Health as a method to improve training, management, policymaking, popular participation, and social control in the health sector<sup>(1)</sup>.

This is considered a highly complex task due to Brazil's vast geographic area and the limited availability of professionals, who are unevenly spread across the country, with larger concentrations in urban centers and other developed regions.

The growth in professional specialization and its consequences for economic costs, a dependence on sophisticated technology with a short service life, as well as the predominance a focus on biological/technical aids in hospital training, requires ambitious initiatives to achieve transformation<sup>(2)</sup>.

The challenge of training healthcare professionals in accordance with the Unified Health System (Sistema Único de Saúde - SUS) requires, among other adjustments, sub-

stantial changes to the delivery of professional training and education. A search for teaching programs more compatible with the existing healthcare model, which could provide significant learning and result in the development of creative and critical thinking, has led to adoption of the concept of professional competency, where knowledge is gained in education and work settings and combined with training, institutional development, learning and problem solving specific to healthcare environments<sup>(3)</sup>.

The incorporation of technology into teaching methods expands access to information and interaction among healthcare professionals. Technology allows for interactive education that can be further enhanced by the integration of multiple media and language resources<sup>(4)</sup>.

The application of computer and telecommunication tools also contributes to the continued training of health-care professionals, as it provides new possibilities to improve service coverage, allowing the effective exchange of both administrative and clinical information<sup>(5)</sup>.

The use of these technologies to promote and support healthcare and to educate geographically distant populations is known as telehealth. The integration of technological solutions into quality services can improve education, logistics, the regulation of teleassistance programs, and the implementation of multicenter research in Brazil and globally. Technologies has been widely disseminated by organizations representing telemedicine and telehealth<sup>(6)</sup>.

In telehealth, teleeducation and continuing education programs, should have an interdisciplinary focus<sup>(7)</sup>, that is,

a set of related disciplines that are linked by the identification of common problems and a platform of shared work.

Within the field of nursing, the American Nurses Association (ANA) considers telehealth as a wide ranging umbrella term, which encompasses telemedicine, telenursing, teledentistry, and other areas of health; telehealth is defined as

activities or services providing healthcare to those separated by barriers of distance and time, and which use technology such as telephones, computers or interactive video transmission<sup>(6)</sup>.

The International Council of Nurses (ICN) supports the view that telenursing is a component of telehealth. It is further described as the development of geographically distant nursing practices that are mediated, fully or in part, by electronic means, and successfully encompasses all aspects of care, education, management, and research<sup>(9)</sup>.

On a national level, nurses have discovered different ways of applying technology in teaching institutions through telenursing. Advancements in telenursing have been achieved by research groups, who work jointly on

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these issues and are connected to the current Postgraduate Nursing Programs. These experiences are principally characterized by teleconsultations, development, assessment, and the implementation of support systems for management and clinical decisions. The inclusion of virtual learning environments and digital learning programs have contributed to the training and continuing education of primary care nurses and healthcare professionals in both

public and private hospital networks<sup>(10)</sup>. Internationally, the combination of teleconsultations, education, and counseling has demonstrated that telenursing optimizes time and productivity in clinical practices. For example, basic follow-up visits, the interpretation of diagnostic tests, or consultations with specialists<sup>(11)</sup> for patients living in remote areas can be accomplished through telenursing.

The telenurse is a professional who possesses the competence and skills to use telecommunications technologies<sup>(9)</sup> (information systems, networks, software and web applications, through the use of computers and other technologies) in the development of nursing practice.

It is within this context that the Ministry of Health, responsible for the Health Education Policy, endorses modern information and communication technologies for the improvement of healthcare. Ordinance No. 35, January 4, 2007, created the National Telehealth Program, which has the objective of developing healthcare support and, above all, continuing Family Healthcare education<sup>(12)</sup>. The primary goals of this ordinance are education and changes in work practices that result in quality SUS primary healthcare.



As part of the Telehealth Program, the necessary infrastructure was placed in remote areas of the country, which allows family healthcare teams to develop and improve their skills while serving clients at a distance<sup>(12)</sup>.

# A goal of the National Telehealth Program is

to integrate family healthcare teams from diverse regions of the country with university reference centers. This will improve the quality of primary healthcare services and reduce healthcare costs by means of professional qualification, a reduction in unnecessary patient displacement and an increase in illness prevention activities<sup>(12)</sup>.

Nine Brazilian states (Amazonas, Ceara, Goias, Minas Gerais, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina and São Paulo) participated in the Pilot Project for National Telehealth applied to primary healthcare, with one Telehealth Center in each state. This project anticipated the installation of 900 contact points in Basic Health Units (Unidades Básicas de Saúde -UBS) across the selected municipalities, which will serve 2700 family healthcare teams spread across five national regions. It is worth highlighting that Ordinance No. 402 of February 24, 2010 created the Brazilian Telehealth Program to support SUS's Family Healthcare Strategy (Estratégia de Saúde da Família - ESF) and created the Brazilian National Telehealth Fellowship Program, among other provisions. As article 3 explicitly states, the Brazilian Telehealth Program is composed of:

I – National Coordination of the Brazilian Telehealth Program and the Brazilian Telehealth Network, conducted by the Ministry of Health, through the Department of Health Education Management, the Secretary of Work and Health Education Management (Departamento de Gestão da Educação na Saúde/Secretaria de Gestão do Trabalho e da Educação na Saúde/Ministério da Saúde - DEGS/SGTES/MS).

The São Paulo Telehealth Center was selected to establish partnerships between national and international health teaching reference centers in fields such as nursing, nutrition, dentistry, and physiotherapy, with the aim of creating multi-professional and collective work teams. These partnerships will strengthen professional practice by allowing for the resolution of health problems presented by local or referred populations. Telehealth is an innovative and unique technological strategy to improve the overall quality of healthcare.

# The São Paulo Telehealth Center, Brazilian Telehealth Program

The São Paulo Telehealth Center was established as part of the Discipline of Telemedicine (DTM) at the Faculty of Medicine, University of São Paulo (FMUSP). It possesses a list of solutions developed by each discipline, which enables the use of state-of-the-art technologies similar to the modern telemedicine centers in the United States of America and Europe.

The DTM teaches telemedicine at graduate and post-graduate levels, develops incentives for the practice of telemedicine, serves the community, conducts scientific studies, and researches and monitors the progress of telemedicine. In recent years, the DTM has been developing various projects, researching and bringing together technology to promote state-of-the-art telemedicine (e.g., video conferences, robotic surgery, portable ultrasound), in addition to creating online telemedicine education systems, such as Cybertutor<sup>(13)</sup>.

Cybertutor is a system that allows interactive supervision of individual educational progress. A theoretical range of information on a particular topic is presented to students with a collection of questions that assess their understanding of the subject being taught. If the questions are answered correctly, the system allows the student to advance to the next topic. If the student fails, they must return to their study and attempt to answer the questions again later. Cybertutor allows the course coordinator to verify the progress of each student (the content studied and the number of errors and correct answers). User access is by registration and password on the São Paulo Telehealth Center's website<sup>(13)</sup>.

The São Paulo Telehealth Center emphasizes the partnership between the DTM-FMUSP and the Telenursing Center at the USP's School of Nursing (Centro de Teleenfermagem da Escola de Enfermagem - CETEnf-EEUSP)<sup>(14)</sup>, which encourages the development of telenursing, teleeducation and teleassistance with a combination of resources, such as the *Virtual Human*<sup>(15)</sup>, orientation videos, computing resources, electronic manuals, and live training. These developments spread knowledge, reduce public health expenditures in Brazil, and promote a good quality of life for all Brazilians.

Telehealth lactation support emerged from a demand by the Ministry of Health and was one of the primary healthcare goals of the São Paulo Center of the National Telehealth Program. The goal of the program is to increase the Brazilian rate of breastfeeding, which can reduce infant mortality and promote the improved physical, mental, and psychiatric health for both the baby and the nursing mother.

The objective of this manuscript is to report the development of the Telehealth Lactation Support program at the São Paulo Center of the Brazilian National Telehealth Program with a particular focus on the role of nurses.

# **METHOD**

## Telehealth Lactation Support

The Telehealth Lactation Support project began in March 2008. Initial planning began with the appointment of an official responsible for the program, a coordinator, and the creation of a work group, known as *The Telehealth Lactation Group*.



This team was composed of professionals from a variety of medical disciplines, related in some form to breast-feeding. The group included pediatricians, nurses, speech and language therapists, nutritionists, and dentists, and their primary task was to develop the Telehealth Lactation Support materials by using the relevant information from each specialization to create cohesive curriculum. This collection of technical material was then distributed to healthcare professionals and ESF community agents via a single access point<sup>(16)</sup>.

The Telehealth Lactation Group included nurses from a variety of backgrounds: nurse-teachers from the School of Nursing, University of São Paulo (Escola de Enfermagem da Universidade de São Paulo - EEUSP), CETEnf coordinators, obstetric nurses, nurses with MAs and PhDs from the Room-in and Nursery sectors at the University Hospital of the University of São Paulo (Hospital Universitário da Universidade de São Paulo -HU-USP), and researchers from the Study and Research Group for Information Technology in Nursing Work Processes (Grupo de Estudos e Pesquisas de Tecnologia da Informação nos Processos de Trabalho em Enfermagem - GEPETE) and the Center for Breastfeeding Study and Research (Núcleo de Estudos e Pesquisas em Aleitamento Materno - NEPAL). Both of the research groups are at the EEUSP and linked to the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq). These partnerships have steadily strengthened the existing education-healthcare partnership.

The work of the group was conducted in periodic, weekly and/or fortnightly, meetings that included videoconferences with professionals at different sites. Information was exchanged through e-mail, and minutes were taken at every meeting to document the activities being carried out and implemented; thus, all members were able to monitor the group's progress.

### Compiling the technical material

All technical material was compiled into a single text on breastfeeding. The document has 12 chapters, some with subsections, and a list of relevant questions for self-evaluation at the end of each chapter. The text is interspersed with photos, illustrations, videos, and dynamic three-dimensional images (Virtual Human) (15). The final technical revision was completed by two pediatricians with recognized experience in the area. In addition, a further revision was completed by professional communications experts from the DTM-FMUSP Communications team. Multimedia materials were created for inclusion in the text.

The text material was grouped separately for the use by healthcare professionals or Community Health Agents (Agentes Comunitários de Saúde – ACS), according to their relevant professional duties and content complexity.

# **RESULTS**

A twelve-chapter technical text on breastfeeding was produced for healthcare professionals and Community Health Agents by The Telehealth Lactation Group. The language was edited for suitability by communications professionals. A video on nursing was produced and ten clinical cases, related to each of the professional fields of The Telehealth Lactation Group, were documented and included. Lists of questions were also drawn up in order to create audio-tips, and a section on suction and swallowing in infants was created using 3D iconography<sup>(16)</sup>.

A second version, containing 7 chapters, was prepared for use by Community Health Agents, using language appropriate to that particular group of individuals. The content in these chapters was presented in 10 items, called the *ten steps*, for each theme. This text was named Telehealth Lactation Support and uses the electronic tutor Cybertutor, developed by the DTM at the FMUSP<sup>(13)</sup>.

Four of the 12 chapters were developed from material produced by the nurse members of The Telehealth Lactation Group: breast anatomy and physiology of lactation, the contraindications of breastfeeding, breastfeeding guidelines, a script on inducing lactation, and a clinical case on obtaining a breastfeeding history and observing a feeding. It also participated in the writing and directing a video on breast lactation, which was produced in partnership with the communications team from the DTM at the FMUSP. This video, which is eight minutes long, explains how to induce lactation and is undergoing editing for inclusion on the Cybertutor platform.

A screenshot from the website of the São Paulo Center of the Brazilian Telehealth Program, demonstrating Cybertutor is displayed in Figure 1.

# **DISCUSSION**

The Telepath Lactation Support materials increase professional knowledge through systematic teleeducation. The didactic material is of proven quality and values the professional singularity of the ACS as active contributors in cross-sector healthcare.

It is important to highlight that breastfeeding is, beyond its biological aspect, historical, social, and psychological. Its practice has been crucially influenced by our cultures, beliefs and taboos, which interfering with the sociocultural legacy and different meanings of breastfeeding for women<sup>(17)</sup>.

The Telehealth Lactation Support program of the Brazilian National Telehealth Program – São Paulo Center was created to train ESF professionals in breastfeeding by shared knowledge, attitudes, and skills that generate criticism, reflection, commitment, and sensitivity, according to the competencies expected from these healthcare team workers.





Figure 1 – Images of a lactation technique from Telehealth Lactation Support materials.

It should be emphasized that the principal factors for the success of this program were the interdisciplinary structure of Telehealth Lactation Support and the São Paulo Center of the Brazilian Telehealth Program, as well as the partnership between the CETEnf-EEUSP, the DMT–FMUSP, and the education-healthcare partnership of the EEUSP and the Department of Nursing of the HU-USP.

The development of the Telehealth Lactation Support program has an impact on the continuing education of healthcare professionals, through the incorporation of diverse media in the presentation of healthcare information, adjustments to the abilities and interests of students, professionals, and other health care workers.

The successful promotion of breastfeeding is related to the availability of educative programs of diverse natures, one of which is the Telehealth Lactation Support program, which can be adapted for use with specific populations.

### CONCLUSION

There is still much to be developed, tested, and incorporated in the field of telehealth, which constitutes a professional practice mediated by information and communication technologies. Telenursing requires more profound changes than a simple transposition of onsite training to the virtual world, which may focus exclusively on hardware issues, connectivity, or specialized software for care, teaching, or Internet research.

It is essential that Telenursing maintain the characteristics and ethical-political reflection of the nursing profession,



in contrast to technological trends and financial interests that focus on the delivery method.

Telenursing should be embedded in the education and training of nursing professionals to develop the technical,

scientific, and ethical-political skills necessary to the practice of telehealth. However, nurses' face-to-face contact, respect for the individuality of each human being, important social responsibilities, and ethical commitment to life must also remain priorities.

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