

# TELECONSULTATIONS AND VIDEOCONFERENCING AS A STRATEGY OF PERMANENT EDUCATION FOR FAMILY HEALTH CARE TEAMS

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**ABSTRACT:** Through the use of Information and Communication Technologies, distance education exceeded the limits for the qualification of family healthcare teams through permanent education. This study aims to evaluate the existing relation between the thematic areas that are requested in the teleconsultations and the themes proposed for videoconferences conducted between January 2008 and December 2012. It is an exploratory study with a qualitative approach. Secondary data provided by the Telehealth Nucleus of a university in Minas Gerais were used. Records of 495 teleconsultations and 89 videoconferences were analyzed. The study enabled the conclusion of the approximation of the thematic areas of the doubts described in the teleconsultations with the themes proposed for the videoconferences, indicating that the professionals use Telehealth resources to discuss questions about the health care reality. The possibility of expansion of the project and its actions was evidenced.

**DESCRIPTORS:** Telenursing; Telehealth; Remote consultation; Second opinion.

## TELECONSULTORIA E VIDEOCONFERÊNCIA COMO ESTRATÉGIA DE EDUCAÇÃO PERMANENTE PARA AS EQUIPES DE SAÚDE DA FAMÍLIA

**RESUMO:** A Educação a Distância, através do uso das Tecnologias de Informação e Comunicação superou os limites para capacitação das Equipes de Saúde da Família por meio da educação permanente. O estudo tem como objetivo avaliar a relação existente entre as áreas temáticas solicitadas nas teleconsultorias e os temas propostos para as videoconferências realizadas no período de janeiro de 2008 a dezembro de 2012. Trata-se de um estudo exploratório, com abordagem qualitativa. Foram utilizados dados secundários fornecidos pelo Núcleo de Telessaúde de uma faculdade de Minas Gerais. Foi realizada a análise dos registros de 495 teleconsultorias e 89 videoconferências. O estudo permitiu concluir a aproximação das áreas temáticas das dúvidas descritas nas teleconsultorias com os temas propostos para as videoconferências, indicando que os profissionais utilizam os recursos da Telessaúde para discutirem dúvidas da realidade assistencial. Constata-se a possibilidade de expansão do projeto, com ampliação de suas ações.

**DESCRIPTORIOS:** Telenfermagem; Telessaúde; Consulta remota; Segunda opinião.

## TELECONSULTORÍA Y VIDEOCONFERENCIA COMO ESTRATEGIAS DE EDUCACIÓN PERMANENTE PARA LOS EQUIPOS DE SALUD DE LA FAMILIA

**RESUMEN:** La Educación a distancia, a través del uso de Tecnologías de Información y Comunicación, ha superado los límites para capacitación de los Equipos de Salud de la Familia por medio de la educación permanente. El estudio tiene como propósito evaluar la relación entre áreas temáticas solicitadas en las teleconsultorías y los temas propuestos para las videoconferencias realizadas en el periodo de enero de 2008 a diciembre de 2012. Es un estudio exploratorio, con abordaje cualitativo. Fueron utilizados datos secundarios fornecidos por el Núcleo de Telesalud de una facultad de Minas Gerais. Fue realizado el análisis de los registros de 495 teleconsultorías y 89 videoconferencias. El estudio posibilitó concluir la aproximación de áreas temáticas de las dudas descritas en las teleconsultorías con los temas propuestos para las videoconferencias, apuntando que los profesionales utilizan los recursos de la Telesalud para discutir dudas de la realidad asistencial. Se constata la posibilidad de expansión del proyecto, con ampliación de sus acciones.

**DESCRIPTORIOS:** Telenfermería; Telesalud; Consulta remota; Segunda opinión.

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**Received:** 23/12/2015

**Finalized:** 20/04/2015

## INTRODUCTION

Primary Health Care has been using technological information and communication resources in order to support health professionals, qualify health care, and enable changes in the work process of the health team. The use of these resources is established by Ordinance 2546 of October 27th 2011, which redefines and expands the Brazilian Telehealth Program, now called the Brazilian National Telehealth Networks Program (Telessaúde Brasil Redes)<sup>(1)</sup>. The above-mentioned program seeks a new proposal of health education that incorporates information and communication technologies as a means for professional qualification. The use of technological information and communication resources enables changes in the health team's practices and actions of support to health care through permanent education.

The program enables an integrated network structuring for transmission of data, sounds, and images, creating an environment with sustainability for the work process of the health care team of the Family Health Strategy (FHS), and contributes to the consolidation of the principles of the Unified Health System (SUS). The program is intended for continuing education and professional qualification through distance education (DE) and, as a result, it leads to a permanence of the professionals in the cities, particularly those most in need, and reduces unnecessary displacement of patients to large urban centers.

In the area of health, distance education is increasingly present in the form of training courses, extensions, and permanent education, as well as specialization courses offered by distance education institutions<sup>(2)</sup>. It is true that

the distance permanent education service is an important tool in health care as it collaborates to guide the practices and update the professional in relation to new knowledge<sup>(3:26)</sup>.

In nursing, distance learning is increasingly used to encourage the professional to seek new knowledge and share practical experience<sup>(4)</sup>.

These new tools have revolutionized access to information and knowledge in the educational environment. The speed at which technological

knowledge in the area of health is renewed requires constant updating by professionals. The Permanent Education in Health Policy regulated by the Ordinance MS/GM 1996 of August 20th 2007 represents a proposal to enable the continuous process of education, as it allows the approximation between the everyday activities of the professional working for the Unified Health System and the needs of the population in order to improve the quality of the services<sup>(5)</sup>.

The process of permanent education in health leads to an improvement of the service practices of the health care team professionals, making them more engaged, interested, and participatory, as well as valuing their knowledge and increasing learning opportunities in the workplace<sup>(6)</sup>.

The Permanent Education in Health system may be understood as an articulated set of educational options aimed at the development of actions for a meaningful learning and for the work process.

Permanent education at work becomes a tool that stimulates institutional change, thus facilitating the understanding, appreciation, and acceptance of the care model indicated by the new programs that prioritize the search for contextualized and integrated options for the health care of the population<sup>(7)</sup>. Based on this reflection, it is possible to affirm that

for the health care sector, the pedagogical aesthetics of Permanent Education in Health consists in introducing the experience of problematization and invention of problems<sup>(8:984)</sup>.

Based on the importance of and the need for permanent education for the qualification of professionals of FHS and with the possibility of distance education, the Telenursing Project was created in 2004. It was coordinated by the nursing school of the Federal University of Minas Gerais and was intended to qualify students of graduate and undergraduate degrees in nursing, nurses, and nursing professionals, as well as health care professionals inserted into the municipal basic health units (BHU) of Belo Horizonte (PBH) and Minas Gerais. In 2008 the telenursing project joined the Telehealth Nucleus (NUTEL) of the medical school of the Federal University of Minas Gerais (UFMG) as part of the National Telehealth Program, which involved about 100

cities registered in the program.

The Telenursing Project operates in two lines of work: teleconsultations and videoconferences. The videoconferences, which are thematic discussions, take place fortnightly. They are previously scheduled, disclosed in the participating units, and the themes to be approached are selected by the individual community based on daily practice issues. During the presentations, questions will be answered in real time by the lecturer or via chat in an absolutely interactive process. These presentations have an average duration of 60 minutes; the first 30 minutes are used by the lecturer to approach the theme, and the remaining time is used in discussion with the professionals attending it.

The teleconsultations are conducted through the site of the Telehealth Nucleus of Minas Gerais, in which the health care professionals such as nurses, nursing technicians, physicians, dentists, and community health agents present their questions to a professional on the consulting team. The consultants are expert professionals from the Nursing School of the Federal University of Minas Gerais (EE/UFMG) or the Clinics Hospital (HC/UFMG) and the health care units. The answer to the query is registered in the system and sent directly to the asker, preferably within 72 hours.

Teleconsultation has two modalities: on-line, in which the professional introduces and discusses a given clinical case with the expert in real time, and off-line, which is used for cases where the access to the expert professional occurs by sending the question via the system and the answer by the teleconsultant is sent within the estimated period of time<sup>(9)</sup>.

It is possible to affirm that the use of teleconsultation provides significant social and economic benefits for the Unified Health System, particularly for municipalities that are more distant from big cities. First, it provides continuing distance education and retains the professionals in the workplace. Second, it reduces the costs to conduct the patient to the secondary level for specialized care.

Teleconsultation may enable a formative second opinion with additional information and with the anticipation of the events by a practical proposal. The formative second opinion is an interactive process that aims at the transmission of knowledge directed to the construction of

reasoning; it is focused on the question of the requesting professional and based on the problem that is sent to an expert professional. Thus, it may be applied in situations where a professional who needs support from another professional may share the experience of experts in knowledge that is applicable to solve a problem.

The second opinion is requested considering the formation of the requester professional and the question sent to the expert professional. Article 2 of Ordinance MS/GM 2.546/11 defines formative second opinion as:

a systematized response, developed based on bibliographical review, in the best clinical and scientific evidences and on the facilitating role of basic health care, questions resulting from teleconsultations and selected based on criteria of relevance and pertinence in relation to the guidelines of the Unified Health System<sup>(1:50)</sup>.

Currently, the UHS bears high costs in terms of out-of-home treatment related to the transportation of patients. In addition to the costs, the critical condition of these patients often represents a risk to their lives<sup>(9)</sup>. The difficulty of having professionals in locations that are distant from big cities and who present limited resources is a challenge that may be structurally faced by Telehealth.

The present study aims to evaluate the existing relation between the thematic areas requested in the teleconsultations and the themes proposed for the videoconferences conducted by the Telenursing Project within the period from January 2008 to December 2012.

## METHODOLOGY

This is an exploratory study developed to understand a given phenomenon: teleconsultations and videoconferences. The exploratory research consists in deepening preliminary concepts about a given practice, thus contributing to clarifying superficially approached questions about the subject<sup>(10)</sup>. The study proposes the employment of a qualitative methodology, an approach that enables the description of the complexity of a given problem, the analysis of the interaction of certain variables, an understanding of the dynamic processes experienced by the social

groups, and an understanding of the particularities of the behaviors of individuals(11).

Secondary data provided by NUTEL-UFMG and the collection of the Telenursing project were used to reach the goal. The research was approved and authorized by the Nursing School of the Federal University of Minas Gerais and by the Telehealth Nucleus of the Medical School of the Federal University of Minas Gerais.

The records of 511 teleconsultations from the National Telehealth Program in the area of nursing within the period from January 1st 2008 to December 31st 2012 were analyzed in the study. The area of knowledge in nursing was the criterion defined for inclusion of teleconsultations; duplicate teleconsultations and those used as system testing were considered for exclusion. From the total of 511 teleconsultations conducted during this period, 16 were excluded; therefore 495 teleconsultations were analyzed.

The investigated data were organized by year of occurrence, thematic area, and description of the issue. They were classified into 10 thematic areas: wound management; systematization of nursing care; psychiatric and mental health; adult and elderly health; women's health; child and adolescent health; work process in health and in nursing; management in health and nursing; fundamentals of nursing; and nursing. The group "nursing" was the first area created in the project, remaining as the only one during the first months of development of the project. As a result, it presents a broader and more general approach, containing issues of diverse content. All of these teleconsultations were considered and included any subjects that were not considered a specialty within the other thematic areas.

Within the same period, 89 videoconferences were conducted. They were organized according to the development schedule, considering only the concluded videoconferences; those that were suspended or that were conducted exclusively to elect the themes for the next semester and for the evaluation of the current semester were excluded.

## RESULTS

Between January 1st 2008 and December 31st 2012 the Telenursing project conducted a total of 89 videoconferences and 495 teleconsultations,

classified as shown in Table 1 and 2, by year, in 11 thematic areas: wound management; systematization of nursing care; psychiatric and mental health; adult and elderly health; women's health; child and adolescent health; work process in health and in nursing; management in health and nursing; fundamentals of nursing; and health education and nursing.

The videoconferences and teleconsultations conducted between 2008 and 2012 showed higher percentages for those related to the thematic area of wound management, followed by women's health and child health. Figure 1 shows the percentage of teleconsultations conducted between 2008 and 2012 by thematic areas.

Table 1 - Relations of the Videoconferences According to the Thematic Area Within the Period 2008–2012 by the Telenursing project/EEUFMG, Belo Horizonte, 2013

Ano	Videoconferences	%
2008	Child and Adolescent Health	26,4
	Nursing	21
	Women's Health	10,5
	Adult and Elderly Health Care	10,5
	SAE	10,5
	Wound Management	10,5
	Fundamentals of Nursing	5,3
	Work Process in Health	5,3
2009	Nursing	22,1
	Adult and Elderly Health Care	16,7
	Health Management	11,1
	SAE	11,1
	Wound Management	11,1
	Child and Adolescent Health	11,1
	Fundamentals of Nursing	5,6
	Women's Health	5,6
2010	Psychiatric and Mental Health	5,6
	Women's Health	23,55
	Adult and Elderly Health Care	23,55
	Nursing	17,6
	Child and Adolescent Health	17,6
	Fundamentals of Nursing	5,9
	Psychiatric and Mental Health	5,9
	Wound Management	5,9
2011	Women's Health	31,5
	Adult and Elderly Health Care	25
	Child and Adolescent Health	18,5
	Health Education	12,5
	Wound Management	6,25
	Fundamentals of Nursing	6,25
2012	Women's Health	31,5
	Adult and Elderly Health care	26,4
	Child and Adolescent Health	15,8
	Nursing	5,26
	Fundamentals of Nursing	5,26
	Health Management	5,26
	Work Process	5,26
	Psychiatric and Mental Health	5,26

Table 1 - Relations of the Teleconsultations According to the Thematic Area Within the Period 2008–2012 by the Telenursing project/EEUFMG, Belo Horizonte, 2013

Ano	Teleconsultorias	%
2008	Wound Management	50
	Women's health	25
	Child and adolescent health	10
	Fundamentals of Nursing	10
	Work Process in Health	5
	Wound Management	62
2009	Women's health	14
	Nursing	10
	Child and adolescent health	10
	Health Education	2
	Psychiatric and Mental Health	2
	Wound Management	32
2010	Child and adolescent health	18
	Women's health	11
	Fundamentals of Nursing	9
	SAE	9
	Nursing	7
	Health Education	5
	Adult and Elderly Health care	5
	Psychiatric and Mental Health	2
	Nursing and Health Management	2
	Wound Management	45
2011	Women's health	24
	Adult and Elderly Health care	9
	Child and adolescent health	5
	Fundamentals of Nursing	5
	SAE	4
	Health Education	4
	Psychiatric and Mental Health	2
	Work Process in Health	2
	Wound Management	30
	Women's Health	22
2012	Child and Adolescent Health	12
	Nursing	11
	Health Education	6,5
	Adult and Elderly Health	6,5
	SAE	5
	Psychiatric and Mental Health	4
	Nursing and Health Management	1
	Work Process in Health	1
Fundamentals of Nursing	1	

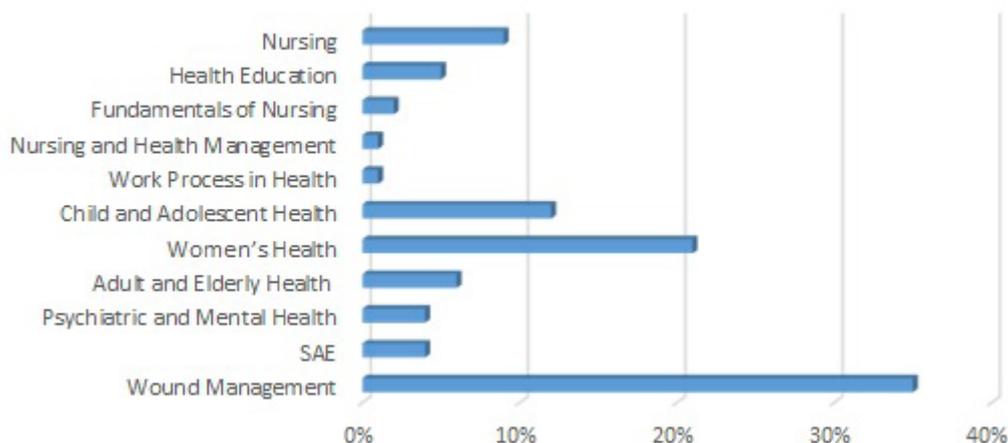


Figure 1 - Percentage of teleconsultations conducted by the Telenursing Project/EEUFMG between 2008 and 2012 by thematic areas. Belo Horizonte, 2013

## DISCUSSION

In 2008 a total of 19 videoconferences and 20 teleconsultations were conducted. The most requested theme in the teleconsultations was wound management, generating a formative second opinion for questions on venous ulcer treatment, a wound that particularly affects adult and elderly populations.

It was also found that, in the group of teleconsultations about wound management, there were a high number presenting only the description of the wound, with no details of the clinical case and no data on the service provided. Such cases presented no formulation of a specific issue, so the teleconsultant needed to return the question to the professional and ask for more details.

In the same year, in relation to the videoconferences, the most frequently addressed subjects were related to women's health and child and adolescent health, showing that there was no thematic approximation between the demands of the basic health care unit evidenced by the teleconsultation requests, that is, the wound management area. This may assume that there is no link between the videoconferences and the daily needs of health professionals.

In 2009 a total of 18 videoconferences and

42 teleconsultations were conducted. The most recurrent theme for the videoconferences was related to nursing, comprising a higher variety of subjects. In this year, as in the previous one, the theme of wound management was the most requested for teleconsultations, as well as the questions presented about types of coverage and their indications.

An analysis of the videoconferences conducted in 2009 shows that the most demanded themes were nursing and adult and elderly health, demonstrating a thematic approximation between the teleconsultations and the videoconferences. It is known that the doubts in relation to wound management in the teleconsultations present higher frequency for the treatment of adults and elderly individuals, and the themes approached in the videoconferences were mostly in the general nursing area, working on several subjects such as questions related to wound management.

Both in 2008 and in 2009 the theme of wound management was the most requested subject for teleconsultations, leading to the conclusion that the doubts are persistent and repetitive, and that professionals refer to situations arising from daily health care demand. It is known that, in the basic health care units, the most requested activity is wound healing (both surgical and non-surgical), confirming the subject areas cited above.

In 2010 a total of 17 videoconferences and

44 teleconsultations were conducted. The thematic areas of women's health and adult and elderly health care were the most requested themes in the videoconferences. The theme wound management remained among the most requested ones, presenting a higher demand in teleconsultations. However, failures in the description of the cases and the doubts are still observed. It was also observed that the theme of women's health was the second most recurrent theme requested in the teleconsultations.

It is possible to observe that women's health was a highly requested theme in the two activities of the project, while emphasis on the thematic approximation of the two activities developed and reaffirming the relevance of the subject in the health care demand. In relation to the theme of wound management, the most recurrent questions involve venous ulcer injuries and injuries that affect the lower limb of diabetic patients, which in turn were related to the high demand of the theme adult and elderly health care in the videoconferences.

In 2011 a total of 16 videoconferences and 55 teleconsultations were conducted. The videoconferences showed a significant increase in the approach to the themes women's health and child and adolescent health. The same happened in 2012, as described below, and it may be explained by the implementation of the Rede Cegonha Program established by the Ministry of Health, which proposes strategies to implement a care network to ensure women the right to reproductive planning and humanized care to pregnancy, childbirth, and the postpartum period, and ensures children the right to a safe birth and healthy growth and development<sup>(12)</sup>. The most frequently asked questions in the teleconsultations addressed issues related to preventive examinations and cytopathological exams. In the videoconferences, broader issues were addressed, such as prenatal care, risks of teenage pregnancy, and cytopathological exams.

In 2012 a total of 19 videoconferences and 334 teleconsultations were conducted. All 11 thematic areas were requested, showing an increase in the action developed by the project and the interest of the professionals in a broader range of themes.

A common factor observed during the last five years is the absence of requests in the thematic area of health management, both in the teleconsultations and in the videoconferences.

The referrals of the questions are performed by the health care professionals that are not working in the management of the unit; this fact may explain the low demand for the area.

Women's health was the most requested area in the videoconferences and presented the second highest demand for teleconsultations; adult and elderly health care was the second most requested theme in the videoconferences. The most demanded theme in the teleconsultations was wound management, showing a thematic approximation with the activities developed by the project. It is important to highlight the fact that an increased demand for adult and elderly health care was expected based on the world trend of population aging and increased life expectancy, as well as the control of chronic degenerative diseases. Moreover, the adult and elderly age group, when analyzed as a whole, comprises a large portion of the population seeking care in basic care units; that is, the elderly group is predominant.

The analysis of data shows that in the five-year period of study the thematic area of wound management was the most requested one in the teleconsultations, and the problems found to provide answers to the professionals during these years were repeated, with emphasis on how the questions are presented to the teleconsultant, namely with insufficient data to understand the case. Reports of questions without a description of the patient history, comorbidities, laboratory test results, or a description of the care that was provided until the moment of the request for a second opinion are common.

Given the above, a systematization of the description of the teleconsultations was necessary so that they might be sent to the teleconsultant in a clear way, enabling the issuance of a technical opinion. For clinical cases, key information needed to be included, starting with patient data: initials, age, gender, profession, etc. In relation to the clinical case, diagnosis, proposed treatment, and conducted treatment should be specified and concluded with the progress of the patient with the formulation of the objective question about the clinical case.

## FINAL CONSIDERATIONS

The teleconsultations and videoconferences conducted between January 2008 and December 2012 show an approximation of the

thematic areas of the doubts described in the teleconsultations and the themes proposed for the videoconferences, indicating that professionals use the resources of Telehealth to discuss the care reality they experience in the basic health units. The results point out that the thematic area wound management was the most requested by teleconsultations and appear prominently in the themes addressed in the videoconferences. From 2011, with the implementation of Rede Cegonha, the areas of women's health and child and adolescent health were the predominant themes addressed in the videoconferences, presenting increased requests in the teleconsultations.

It is possible to conclude that the study reached its goal, indicating the existence of a relation between the thematic areas requested in the teleconsultations and the themes proposed for the videoconferences conducted by the Telenursing Project within the period from January 2008 to December 2012.

The results of the project emphasize the importance of the use of information and communication technologies in distance education initiatives as a methodological strategy for permanent education in family health strategies in cities of the State of Minas Gerais. Furthermore, the results point to a need for additional studies to further explore the themes, such as the verification of the impact of the improvement of care from the developed qualification actions.

These results confirm the efficiency of the activities developed by the project for the qualification of health care professionals who work in the basic health units and evidence the possibility of expansion of the project, thus expanding its actions. It is suggested that the conduction of videoconferences originated in the willingness of the participant municipalities to present and discuss a clinical case of interest for the Family Health Strategies. Analysis of the most frequently asked questions among the cities and promotion of thematic discussions between these, if possible, makes them a reference for each other.

From the most frequently asked questions it is also possible to invest in the academic formation of undergraduates, as a large portion of teleconsultants belong to the academy, and are able to develop projects and actions to deepen the discussion on the major demands of basic

care. In addition to these contributions, another action that would have a huge impact and would meet the explicit demand of the Family Health Strategies is the availability of the collection of material produced by the project, from the recording of videoconferences and editing these as instructional material, with free access by the Family Health Strategies in the National Telehealth Program website. This initiative is currently in progress, and part of the material produced by the project is available in the repository of teaching materials of UFMG.

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