Enfermería Global
ISSN 1695-6141
Revista electrónica trimestral de Enfermería
Nº27
Julio 2012
www.um.es/eglobal/

ADMINISTRACIÓN – GESTIÓN - CALIDAD

# Experience of technology transfer from Telephone Counseling for Chronic Conditions to Primary Care Teams

Experiencia de transferencia tecnológica de la Consejería Telefónica para Cuidados Crónicos de Salud, a equipos de Atención Primaria

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Keywords: Technology transfer; chronic diseases; telephone counseling; self management.

Palabras clave: Transferencia tecnológica; enfermedades crônicas; apoyo telefônico; automanejo.

## ABSTRACT

The technology transfer process requires training future users in specific knowledge and skills, as well as performing administrative adjustments for an effective incorporation of innovation into the structure of the system and into the professional care.

Pontificia Universidad Católica de Chile's School of Nursing developed a model of Technological Support for Health Self-Care, which includes the use of telephone counseling to help people who suffer from chronic diseases manage their condition and look after themselves by teaching them techniques which alleviate their disease. Here, we present an experience that was carried out to transfer this technology to professionals related to the Cardiovascular Health Program in Chilean Public Primary Healthcare Centers located in a low-income district of Chile's capital city, Santiago, so that the technology could be applied to patients with type 2 diabetes who had joined such program.

This process was conducted in two stages: 1. Making of a theoretical-practical workshop to support health decision-making and motivational strategies for health behavior change (workshops and demonstrations); and 2. Field demonstration, and monitoring with supervision and meetings at local level.

The professionals who participated in the technology transfer program succeeded in developing the skills expected in the Telephone Counseling Tool to Support Self-Management of People suffering from DM2. Finally, to enable telephone counseling in clinical practice, healthcare centers restructured their system of service provisions, incorporating such counseling into their professional duties.

## RESUMEN

El proceso de transferencia tecnológica exige capacitar en conocimientos y habilidades específicas a los futuros usuarios, así como también la realización de adecuaciones administrativas para la incorporación efectiva de la innovación en la estructura del sistema y en la atención profesional.

La Escuela de Enfermería a la que pertenecen los autores**,** desarrolló un modelo de Apoyo Tecnológico para el Autocuidado en Salud que incluye el uso de consejerías telefónicas para apoyar a personas con enfermedades crónicas en el automanejo y autocuidado de su condición. Se presenta a continuación la experiencia llevada a cabo para transferir esta tecnología a profesionales del Programa de Salud Cardiovascular en Centros de Atención Primaria públicos de una comuna de bajos recursos en Chile, para su incorporación en la atención de pacientes con diabetes tipo 2 adscritos a dicho programa.

Este proceso se realizó en dos etapas: 1. Realización de un taller teórico práctico en apoyo a la toma de decisiones en salud y estrategias motivacionales para el cambio de conducta en salud (talleres y demostraciones) y 2. Demostración en terreno, y seguimiento con supervisión y reuniones a nivel local.

Los profesionales que participaron del programa de transferencia tecnológica, lograron desarrollar las destrezas esperadas en la herramienta de Consejería Telefónica de Apoyo al Auto-Manejo de Personas con DM2. Finalmente, para incorporar las consejerías telefónicas en la práctica clínica, los centros de salud reestructuraron el sistema de prestación de servicios, integrando así dichas consejerías a su quehacer profesional.

## INTRODUCTION

Innovation is an imperative for today's nursing. The International Council of Nurses (ICN) states that: *The new solutions offered by nurses are a vital component of the efforts to tackle global health problems, present and future - issues such as aging, HIV / AIDS, tuberculosis, malaria, the increase in non-communicable diseases, poverty, inadequate resources and shortage of human resources* [(1)].

However, according to reports in scientific literature, it takes a long time for the implementation of new concepts and proven programs to become part of the practice, or, simply, they are never implemented. Professionals often feel that the research-based interventions are difficult to be introduced at community level, and they also feel that the fundamentals of research do not always respond to the needs and context in which clinicians perform [(2)].

Technology transfer involves, apart from the new technology itself, different components and cognitive formats which are necessary to put such technology into practice. According to Estébanez and Korsunsky, among these components are: a) providing continuous training and vocational education to acquire new knowledge; b) training and skills development in specific areas; c) specific assistance for the resolution of particular problems between the researchers and the ones who requested the research; d) provision of knowledge in interdisciplinary areas and areas of rapid change and growth; and e) dissemination, outreach and exchange of knowledge and basic scientific information, both for users and interested researchers, as well as for professionals, experts and the general public [(3)].

The technology transfer process considers the training of future users of the technology and giving them support during the implementation, in order to go together making the necessary adjustments to the technology, and to the structure and administrative system of the institution, so that the technology is a valuable contribution and can be articulated easily with the professional work.

Moreover, in the field of caring for people with chronic diseases (CD) it is observed that the care of patients with CD is not very effective. Multiple factors influence it, ranging from the way in which health professionals deliver care, still with a strong biomedical approach, to the organization of healthcare services, characterized by isolated and discontinuous provisions. This approach directly impacts the quality of the interaction between users and professionals, and, specifically, the results likely to be obtained from that care. An interaction impaired or interfered by poor aspects can undermine the adherence to the treatment as well as the user satisfaction [(2)].

The scientific literature suggests that user participation is the key to successfully control the disease. In this sense, the role of professionals is to give support for the patients' decision-making processes in health [(4)]. It is therefore essential to find strategies that favor the acquisition of skills in the professionals so that these can provide an effective support [(5)].

Pontificia Universidad Católica de Chile's School of Nursing took on this challenge and developed a model of technological support for Self-Care in Health [*Autocuidado en Salud, ATAS UC*], which includes the use of telephone counseling to assist people who suffer from CD with self-management and self-care techniques for their condition. This model, which complements traditional care provided by outpatient health centers, was implemented and evaluated with financial help coming from the Fund to Encourage Scientific and Technological Development (*Fondo de Fomento para el Desarrollo Científico y Tecnológico, FONDEF*). Its positive results made the authorities of the district incorporate the model into the healthcare procedures for the users in one of the district's health centers, which would become a center for demonstration of the use of such technology [(6-7)]. Then, a *technology transfer* project was developed with the support of Chile's Ministry of Health.

For the development of the transfer program, the theoretical reference framework of telephone counseling was considered as the core content, and, besides that, learning theories were used to design the training activities. The training was conducted with the support of a self-directed study module that includes the theoretical framework of the telephone counseling, and is divided into sections that provide content, exercises and self-assessments [(8)].

A substantial part of that framework is the *Health Decision Making Model,* which provides specific knowledge about the processes of decision making and decisional conflict experienced by people (9). Its purpose is to empower and support people in exercising their rights to health, and to opt for, as well as to acquire or change, behaviors that benefit their health [(5)]. Furthermore, it considers models and theories of change in health behavior which contribute to the understanding of why people maintain or change their health behaviors, decide to adhere to or give up a treatment, and what process they go through to make those changes.

To support the implementation of decision making, the technique of *Motivational Interviewing* is also used. Its authors define it as a directive approach, focusing on the client, to strengthen and enhance an intrinsic motivation to change through the exploration and resolution of ambivalence [(10)]. More than a set of techniques, it is a method of communication with a facilitative approach that evokes change in its natural form. Various experiences indicate that motivational tools can be a very effective support to achieve lifestyle changes of patients [(11)]. The technologies based on this framework which are used in the care of people with chronic diseases, coupled with the use of remote care technologies, provide an opportunity to deliver care focused on user needs in order to attain better outcomes in health.

With regard to telephone counseling, it is important to consider that, as there is no eye contact between professionals and users, identifying concerns and issues relevant to users are based solely on verbal communication [12], and therefore the characteristics of the professional's verbal communication become extremely important. According to Katz, if face to face communication is already complex, a phone conversation can be even more complex, since there is less time, no possibility of reading body language, and usually there is no opportunity for second thoughts once the contact is over and the professional must answer the following call [13]. In this respect, the training of professionals and polishing their skills are crucial for a good clinical outcome of patients.

From the perspective of learning theories, the level of complexity of a training program for technology transfer requires the incorporation and combination, in varying degrees and progressively, of the *Behavioral Theory* and the *Constructivist Theory*.

In a first instance, the *Behavioral Theory* is required to observe the conduct of the professional in a particular situation, focusing the attention on the perception and association of elements for the modeling of the behavior [14].

In a second instance, it is important that the professional is able to go beyond the association of elements to evaluate his performance and that of his peers, in order to adapt the proposed model to his local circumstances. To do this, the approach of the Constructivist Theory is necessary [14]. These actions take the professional to a reflexive phase where there will be an evaluation of his own learning and the applicability of this in the direct care of users, thus achieving the implementation of the model. Additionally, such reflection will be essential to restructure and rearrange his acquired knowledge to the local conditions, adapting it to the characteristics of his performance and his users, without losing the basic elements of the model [14].
Finally, and under the perspectives stated, it is intended that the participating professionals understand that the knowledge gained goes beyond a "*mere copy of the pre-existing reality*" [14], becoming the basis of an interactive process by which the professionals can interpret by themselves the information they acquired, and are able to build their own explanatory models which correspond to the local situation [14].

## METHODOLOGY

Health professionals (nurses and nutritionists) working at outpatient health centers in a district of Santiago, Chile, were invited to participate in a theoretical and practical program, in order to incorporate telephone counseling into the professionals' local reality as a way to support people with chronic health conditions. The program considered the following steps: a) continuous training for the professionals in telephone counseling and the conceptual framework that upholds it; b) skills training; and c) monitoring and specific assistance for problem-solving.

To do this, different methodologies were used, such as: workshops, meetings, recording and analysis of telephone counseling with simulated patients, presence of people in charge of the program during the counseling for patients, and peer discussion of performance achieved [15-16].

The program evaluation considered:

a) A written test on the contents of the theoretical module.

b) Formative evaluation of the quality of decision support delivered by professionals in their telephone counseling. The DSAT-cdm (Translated and adapted from the original version: "DSATcdm: Decision Support Analysis Tool for Chronic Disease Management", Stacey, April 2006, material made available by the author, translation and adaptation: Bustamante, C., 2008, unpublished) tool was used here. The DSAT-cdm is an observational tool that assesses the support for decision making and communication skills of health professionals, in the context of interventions for people with chronic diseases. The dimensions assessed are: status and needs for decision making; needs for implementation; and overall evaluation of the interaction. Its use allows to make observations of the progress made in the incorporation of the skills. For each dimension, the tool describes the evaluation criteria that allow the observer to indicate whether or not the dimension was present during the interaction.

c) Overall evaluation of the program from the perspective of the participants, using a questionnaire where the administrative, methodological and content aspects of the program are graded from 1 (lowest score) to 7 (maximum score).

## RESULTS

Between March and August 2009, 14 professionals from five primary healthcare centers took the first module of intensive theoretical and practical training (16 hours). Later, 10 of them did follow-up on the field to implement the telephone counseling. There were seven sessions of practical training and one evaluation meeting of the process with the entire group of people who attended the training.

Each trained professional spent on average 4.5 hours on practical activities in the field. The initial program considered making 10 supervised calls with each professional; however, the number of calls was lower (between 1 and 4 per person), due to restrictions of time availability.

The sessions of demonstration and supervision of telephone counseling were delivered in groups (2 to 3 people per session) and the methodology included: preparation before the telephone contact, providing the phone counseling, and group discussion, later. This discussion included: an analysis of the clinical case; an assessment of the consistency of the professional's interventions during the call against the theoretical framework of the model; and suggestions for possible interventions, if necessary. The entire process at each telephone counseling took 45 to 50 minutes, and this explains that during a work session only 2 to 3 counselings took place. For training purposes, the opportunity to deepen the discussion and analysis was favored instead of having a greater number of phone counseling which would have reduced the time devoted to group activity.

Regarding the formative evaluation of the performance, by applying the DSATcdm, it was observed that the participants did well on items related to the positive evaluation and / or delivery of information; and that after receiving training, their performance improves as they also provide support to implement the decision by using motivational strategies.

The participants of the program gave a positive evaluation to both training modules (theoretical and practical) grading the administrative aspects with a 6.6; the contents with a 6.8; and the methodology with a 6.7 (average grades). Moreover, they considered the goals had been met.

Since all the participants who completed the field-tracking module presented qualitative advances in their performance, this activity was incorporated in the procedures of the center, and working pairs were formed at each center: they identified the patients who would benefit from telephone counseling.

## CONCLUSIONS

The telephone counseling to support self-management for people with CD is a transferable technology. This can be achieved through the implementation of a training program that includes continuous training, skills training and monitoring of professionals. The positive results of this training allowed each health center to allocate time for telephone counseling to the participants, and each of them was in charge of 15 patients in the period August - December 2009.

The technology transfer represents a challenge for health professionals. At a first stage, it considers the teams' ability to take what has been observed as an ideal to their reality, without losing the essence of the information to be transferred.

Selecting the suitable conditions to make this transfer is fundamental to achieving the ultimate goal: that the professionals are able to be active agents in the process, and not mere observers.

In this scenario, the use of educational tools which incorporate central aspects of the learning process are essential elements that allow the professionals to be able to reflect on and internalize what has been learnt, building and contributing to new learning.

The work in supporting decision-making in health and acquiring motivational interviewing skills, channeled through a communication technology, favored the implementation of the model of telephone counseling. This technology transfer is necessary to produce a real and substantial change from the traditional healthcare model to a comprehensive and user-centered one.

The task force from the School of Nursing continues to transfer the knowledge generated in the area of support to the self-management of chronic health conditions, and to expand the ATAS-UC model by including the use of text messaging and working with people who have been diagnosed with pre -diabetes.

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ISSN 1695-6141

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