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TELECARE TO ELDERLY PEOPLE WITH ALZHEIMER AND THEIR CAREGIVERS: SYSTEMATIC REVIEW

Rosimere Ferreira Santana*
Raquel Vaqueiro Dantas**
Thais da Silva Soares***
Tallita Melo Delphino****
Ana Beatriz Serra Hercules*****
Homero Marinho Teixeira Leite Junior******

ABSTRACT

This research aims to analyze the literature on the use of telecare as a nursing intervention in the care of the elderly with Alzheimer's and their caregivers and also to identify in the literature the main assisted technologies and the instruments of evaluation in the care of the elderly people with Alzheimer's and their caregivers. It is a systematic review of the literature on the bases Lilacs, PubMed, Cinahl and Elsevier, based on the PRISMA proposal. The inclusion criteria were: articles that directly addressed actions of telecare by nurses; cohort studies and randomized controlled trials with allocation confidentiality; indexed articles; published in Portuguese, English and Spanish; temporal cut from 2007 to 2017. Two articles on the use of telecare as the nursing intervention in the support to family caregivers of elderly people with dementia were found. The use of telephone monitoring was performed with other assisted technology. In one study, telephone follow-up was associated with the use of cameras, where the caregivers filmed the care routine, and in the other study teleconferences were performed on video calls between caregivers and professionals. It can be concluded that telecare can be considered an advanced practice of the nurse and an accessible alternative in the care of elderly people with Alzheimer's and their caregivers.

Keywords: Telenursing. Telemedicine. Alzheimer disease. Geriatricnursing. Caregivers. Telecare. .

INTRODUCTION

The increase in life expectancy is an achievement and can be considered a consequence of the technological and scientific innovations in the health area[1]. This demographic change is accompanied by a significant increase in the incidence of chronic non-communicable diseases (CNCD). Among the CNCDs that affect people in the aging phase, dementias stand out because they have characteristics that do not only affect the sick individual, but extend to the whole family structure and to society; they cause psychosocial and economic impact[2]. Alzheimer's disease (AD) is the leading dementia in older age groups, accounting for 50-70% of the total number of cases and reaching approximately 5.3 million people worldwide. It affects about 5% of individuals over 65 years-old, 20% of those who are 85 years old and up to 47% in octogenarians[3].

The changes in dementia evolve progressively and make the individual more dependent on care and without autonomy to perform daily life activities, so it is necessary the presence of a caregiver, who is mostly a relative[1]. There are also problems regarding the relationship between the elderly people and their caregiver, such as inefficient communication between the caregiver and the elderly, physical and psychological distress of the caregiver and lack of knowledge about the seniors[4,5]. Therefore, it is fundamental that health professionals provide support to the caregiver for the execution of everyday activities[6].

However, due to the difficulties encountered in the transportation of the elderly people with Alzheimer's to the Health Unit, in the appointment, as well as in the periodic home visits by the health team[7], the use of assisted technologies, such as telecare, can be a promising and viable alternative for the follow-up of the elderly with Alzheimer's and their relatives, and a potential area for nurses to practice advanced nursing practice.

Telecare is an integrated system of health activities that can be carried out at a distance. It can be used to monitor the health of distant or remote clients using some type of technology, such as telephone, audio or video equipment, or via the internet[8]. This monitoring

* Nurse. PhD in Nursing, Fellow of Productivity PQ2/CNPq, Associate Professor at the Aurora de Afonso Costa Nursing School, Universidade Federal Fluminense (UFF). Niterói, RJ, Brazil. E-mail: rosifesa@gmail.com ORCID iD: http://orcid.org/0000-0002-4593-3715.
**Nurse. Former Fellow of Scientific and Technological Innovation (PIBINOVA/CNPq), UFF, nse. Niterói, RJ, Brazil. E-mail: raquel_vaqueiro@yahoo.com.br ORCID iD: https://orcid.org/0000-0002-6598-216X.
***Nurse. Specialist in Gerontological Nursing, Attending Master's Degree in Care Sciences at UFF. Niterói, RJ, Brazil. E-mail: thaissoares@id.uff.br ORCID iD: http://orcid.org/0000-0001-6825-3547.
****Nurse. Doctoral student in Health Care Sciences. Aurora de Afonso Costa Nursing School, UFF. Niterói, RJ, Brazil. E-mail: tallitamell@gmail.com ORCID iD: http://orcid.org/orcid.org/0000-0002-4489-1795.
*****Nursing student. Scholarship fellow for Scientific and Technological Innovation (PIBINOVA/CNPq), UFF. Niterói, RJ, Brazil. E-mail: anabeatriz.absh@gmail.com ORCID iD: https://orcid.org/0000-0002-2600-7089.
******Doctor. PhD in Clinical and Experimental Physiopathology. Geriatrician at Hospital Adventista Silvestre. Rio de Janeiro, RJ, Brazil. E-mail: homeroleite@globo.com ORCID iD: https://orcid.org/0000-0003-2424-4993

can be done through virtual consultations, video conferencing, telephone calls and cellular messages[9], which culminate in reducing the need for primary health care, avoiding unnecessary hospital admission; and delay or impede admission to Long-Term Institutions for the Elderly People[10].

For this, the research question was formulated, using the **PICO** strategy, which represents an acronym for patients, intervention, comparison and outcomes: **P** - Elderly Patients with Alzheimer's and their caregivers **I** - Telecare **C** - Conventional follow-up **O** - Improvement or maintenance of the functional capacity of the elderly people and of the overload of the caregivers, declared as: Have elderly people with Alzheimer's and their caregivers accompanied by telecare improved functional capacity and overload when it is compared to conventional care? To answer this question, this study aims analyze the available literature on the use of telecare as a nursing intervention in care for the elderly with Alzheimer's and their caregivers.

METHODOLOGY

This is a systematic review based on the methodology Preferred Reporting Items for Systematic Reviews and Meta-Analyzes (PRISMA Statement). The inclusion criteria were: articles that addressed directly actions of telecare by nurses; cohort studies and randomized controlled trials with allocation confidentiality; indexed articles, published in the Portuguese, English and Spanish languages, with a 10-year time cut from 2007 to 2017. As exclusion criteria: case reports, case series and expert opinion; telecare that is used for medical diagnosis and without nursing performance; theses and dissertations; unfinished searches; articles without determination of a clear methodology or that did not deal with the proposed theme.

In order to identify the articles, a search was performed online in the Medical Literature and Retrieval System Online (MEDLINE) databases via PUBMED, Latin American and Caribbean Literature in Health Sciences (LILACS), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Elsevier via Portal of Periodicals of the Coordination of Improvement of Higher Level Personnel (CAPES), from January to March 2017, using the descriptors: telemedicine, telenursing, Alzheimer and dementia in Portuguese and English.

During the search the Boolean operator AND was used to perform the associations. After consulting the databases and applying the search strategies, the articles were selected: firstly through the application of the search filters, followed by the reading of the titles and abstracts. After pre-selection, we followed the recovery of the articles in full and elimination of duplicate articles. It should be emphasized that there was no sample loss during data collection, so all articles selected for complete reading were found and included in the study. Figure 1 shows the flowchart of the results of the study search.

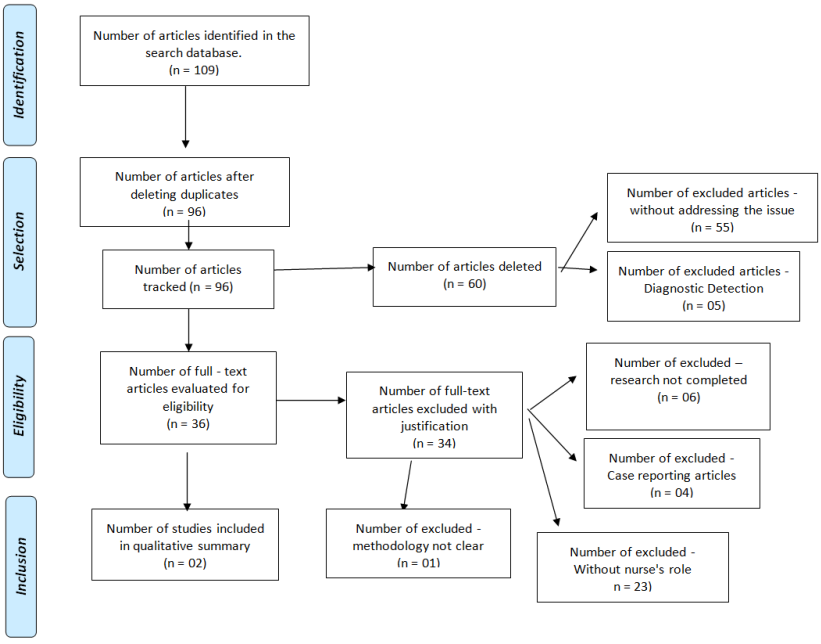

Figure 1. Flowchart of search results and selection of studies.

To analyze the articles, a data collection instrument was used with the following topics: article identification data; methodological characteristics; description of the main results, description of the authors' conclusions, limitations found in the study and the nurse's role in the intervention.

RESULTS

Table 1 presents a summary of the characteristics of the included studies [11,12].

Table 1: Summary of the characteristics of the included studies.

Scientific Paper	Objectives	Method	Main results	Instruments	Conclusion
Matthews*et al.*; 2015[11] EUA PubMed J HealthcareEng 2B	To describe the usability of a portable camera system, based on the initial assessment of caregivers of elderly people with dementia	Cohort study	The system would be useful to understand the practical and emotional impact of dementia in daily life; Ease in medical care; design improvements that focus on the comfort and operational state of the system are recommended.	Mini-Mental; Questionnaire developed by the researcher; Checklist of Memory and Behavior Problems; Zarit; Technology use questionnaire	Family caregivers of people with dementia are willing and able to use a new system for collecting evidence of dementia-related behaviors and interactions that may affect the health and safety of the elderly people.
Gitlin et al.; 2010[12] EUA Pubmed J Am Geriatr Soc 1A	To test the effects of an intervention that helps families in controlling distressing behaviors	Randomized clinical trial	There was great improvement in the understanding of the disease, confidence control and behaviors, facilitating life, increasing the capacity of care, improving the daily life of the patient and keeping the patients at home on benefit in providing care of daily life.	Subscales of the Perceived Changes Index	Widespread benefits for caregivers have been found, including decreased depressive symptomatology, burden, improved well-being, and improved skills. The subscales have also showed that the experiment group improved on affection and management skills.

Source: Author

In a study[11] telephone follow-up was associated with the use of cameras in which the caregivers filmed the routine care or some intercurrence when the professional opinion was necessary. In another study, teleconferences were performed, through a video call system between caregivers and professionals. There was also the delivery of materials to reinforce topics and to send relevant information on research, books, television programs, diagnoses, symptoms, civil rights, among other topics related to the area[12]. It should be mentioned that in both studies the remote telecare technologies were not the only form of follow-up of the elderly people and caregivers, the in-person consultations were associated with nurses, geriatricians and/or occupational therapists.

In the studies, it was evaluated the usability of the chosen one, it was noticed that there was acceptance of the technology of the caregivers and positive reports of acceptance of the participants. It was highlighted the increase in the number of patients followed up; better understanding of the practical and emotional impact of Alzheimer's in daily life; greater confidence in care delivery with increased caring skills; quality of life of the elderly with Alzheimer's disease; and reducing the caregiver's burden[11,12].

The evaluation instruments were: List of Memory Review and Behavior Problems; Mini-Mental State Examination and the Zarit Caregivers Overload Assessment Scale; Questionnaire on the use of technologies, as well as evaluation tools developed by

the researcher. It was noted that instruments that evaluate directly the functional capacity of the elderly people, that is, independence for activities of daily living were not used; the focus was on behavioral control.

DISCUSSION

The main result of this review was to demonstrate that the use of telecare has occurred due to the need for a follow-up of support to caregivers in elderly care that could be performed systematically at a distance, avoiding long periods without assistance.

In the two studies included in the review, the monitoring was carried out by telephone, through links, associated with another type of technology, either by videoconference or recorded video. The telephone call was used to make reports, reminders, and the nurse's approach[11,12].

Telephone follow-up has been an extremely important intervention, since it increases the speed of access between professional-patient, decreases waiting time and costs of locomotion for face-to-face consultations[13,14]. In one of the studies the use of cameras was used to facilitate the evaluation of the professional responsible for the changes in the behavioral framework of the elderly people[11]. In this case, the videos recorded by the caregivers were used as propellants of the intervention sessions in support for elderly care[11].

It was demonstrated in the second study that through the teleconference intervention there was a threefold increase in the number of elderly people with dementia. And, that caregivers prefer the technology when comparing waiting times and travel costs to the health unit[12, 15].

The use of telephone follow-up was used for nurse-caregiver links to address questions about pathologies that could exacerbate problematic behaviors and laboratory test results. This study reported that the caregivers of the experimental group understood better the pathology, presented an increase in understanding capacity, improved daily life of the patient and that they would recommend participation in other future studies[12].

Through a report from the caregivers, it was verified that there was good acceptance in relation to the use of the system. They affirmed that the system has usability, once through the recordings it was possible to understand the practical and emotional impact in the caregiver'spersonal life. There were requests for design improvements aimed at the comfort and operational state of the systems used[11].

The results of this review showed that there was a direct action of the nurse in the distance monitoring and positive return by the caregivers. Thus, it is estimated that distance monitoring through the use of technologies, especially in cases of long-term care and dependency, tends to increase as in the case of the person with Alzheimer's and their caregivers. And for this, it is necessary to prepare the nursing professionals to understand the goals of the telecare as complementary to the face-to-face, how to evaluate the benefit of the follow-up, and the objectives of the intervention, for not to be surprised with ready-made patient follow-up packages just like in telemarketing, which ignores the nurse's therapeutic decision.

In Brazil there is a strong current for the maturation of telemedicine, a well-founded application of technological solutions aimed at improving education, regulating care, planning logistics and implementing methods to enable multi-centric research[16]. The country offers unique opportunities for the development and applications of telemedicine. Its large territorial extension, thousands of isolated and difficult access places, extremely unequal distribution of good quality medical resources, among other aspects that are challenging the realization of the right to health, allow us to predict the existence of a great potential for the expansion of telemedicine in the country. Telemedicine offers the potential to solve major contemporary health challenges, and the country has features for its full use. Therefore, diffusing actions of telenursingand telecare emerges to the advanced practice of the profession.

CONCLUSION

The use of telecare for elderly people with Alzheimer's and their caregivers with direct nurses' performance was able to improve the elderly's behavior management skills and the perception of the caregiver's overload. No results were found to improve the functional capacity of the elderly people. Another satisfaction result found in the studies was the usability of the telecare system and the satisfaction with the access to the professionals without leaving home. They also describe the improvement of adherence to the treatment of the elderly people, an increase in the number of elderly people accompanied by health professionals, an improvement in the quality of care, and a better understanding of basic pathology and comorbidities.

We emphasize the scarcity of publications on the

subject in the area of nursing and it is recommended to replicate the studies with the validation of the interventions proposed in our scenario, with the appropriate transcultural adaptations. As well as greater investment in the development of technological products applied to healthcare within the national scope, since no article was found in the review that addressed this reality in Brazil.

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TELECUIDADO PARA IDOSOS COM ALZHEIMER E SEUS CUIDADORES: REVISÃO SISTEMÁTICA

RESUMO

Analisar a literatura sobre o uso do telecuidado como Intervenção de Enfermagem na assistência ao idoso com Alzheimer e seus cuidadores. Trata-se de revisão sistemática da literatura nas bases LILACS, PubMed, CINAHL e Elsevier, baseada na proposta PRISMA. Os critérios de inclusão foram: artigos que abordassem diretamente ações de telecuidado por enfermeiros; estudos de coorte e ensaios clínicos randomizados com sigilo de alocação; artigos indexados; publicados nos idiomas português, inglês e espanhol; recorte temporal de 2007 a 2017. Foram encontrados dois artigos sobre telecuidado como Intervenção de Enfermagem no suporte e apoio aos cuidadores familiares de idosos com demência. O uso do acompanhamento por telefone foi realizado associado a outra tecnologia assistida.O acompanhamento por telefone foi associado ao uso de câmeras, e os próprios cuidadores realizavam as filmagens da rotina;ainda foram realizadas teleconferências em chamadas de vídeo entre cuidadores e profissionais. O telecuidado pode ser considerado uma prática avançada da enfermeira e alternativa acessível na assistência aos idosos com Alzheimer e seus cuidadores.

Palavras-chave: Telenfermagem. Telemedicina. Doença de Alzheimer. Enfermagem geriátrica. Cuidadores. Telecuidado.

TELECUIDADO A LOS ANCIANOS CON ALZHEIMER Y SUS CUIDADORES: REVISIÓN SISTEMÁTICA

RESUMEN

Analizar la literatura sobre el uso del telecuidado como intervención de enfermería en el cuidado al anciano con Alzheimer y sus cuidadores e identificar en la literatura las principales tecnologías asistidas y los instrumentos de evaluación en el cuidado al anciano con Alzheimer y sus cuidadores. Se trata de una revisión sistemática de la literatura en las bases Lilacs, PubMed, Cinahl y Elsevier, basado en la propuesta PRISMA. Los criterios de inclusión fueron: artículos que tratasen directamente de acciones de telecuidado por enfermeros; estudios de cohorte y ensayos clínicos randomizados con sigilo de asignación; artículos indexados; publicados en los idiomas portugués, inglés y español; recorte temporal de 2007 a 2017. Fueron encontrados dos artículos sobre el uso del telecuidado como intervención de enfermería en la atención y el apoyo a los cuidadores familiares de ancianos con demencia. El uso del acompañamiento por teléfono fue realizado junto a otra tecnología asistida. En un estudio el acompañamiento por teléfono fue asociado al uso de cámaras, donde los propios cuidadores realizaban las filmaciones de la rutina de cuidados, y en el otro estudio fueron realizadas teleconferencias en video llamadas entre cuidadores y profesionales. Se concluye que el telecuidado puede ser considerado una práctica avanzada de la enfermera y una alternativa accesible en el cuidado a los ancianos con Alzheimer y sus cuidadores.

Palabras clave: Teleenfermería. Telemedicina. Enfermedad de Alzheimer. Enfermería geriátrica. Cuidadores. Telecuidado.

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Corresponding author: Rosimere Ferreira Santana. Rua Doutor Celestino, 74 – Centro, Niterói, Rio de Janeiro, CEP: 24020-091. E-mail: rosifesa@gmail.com

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