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Systematic Review: Tele-Nursing a Universal Access to Care for Oncology Patients

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Abstract

Telenursing is a way of caring for and educating oncology patients to promote self-care management at home. The objective of the study was to analyze the scientific evidence on telenursing in the care of oncology patients. This was a systematic and descriptive review in Spanish, Portuguese and English which was available in 3 databases: BMC, Pubmed and Scielo. The articles were selected in English, Spanish and Portuguese with data from 2010-2020. It was found that tele-nursing, a new form of access to the care service provided by nursing professionals to patients with oncology treatment, including technological tools allow a direct and timely relationship to respond to the detection of adverse events after chemotherapy, promote self-care and control and monitor the patient's health status at home. Conclusions: There is a need to use tele-nursing as an opportunity to care for the patient at home through virtual means by providing relevant information to promote self-care and quality of life.

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INTRODUCTION

Cancer is a public health problem that has been increasing in recent times according to the World Health Organization (WHO), which reported that more than 138 million new patients are diagnosed with cancer (OMS,2014). In this regard, the Pan American Health Organization (PAHO) indicated that in the countries of the Americas and the Caribbean cancer is the second leading cause of death, predicting that by 2030, the incidence will be greater than 572,000 cases (OPS,2018).

In view of this situation, most cancer patients receive the treatment of choice, such as chemotherapy, which is applied in different schemes and constitutes a variety of antineoplastic drugs (OMS,2014). These drugs have pharmacological action on the cells that are present in the organism and have an effect on cancer cells or not, causing destruction also of healthy cells, these drugs called cytostatics, have collateral or adverse effects on people, depending on the amount and time of treatment (Fundación para la excelencia y la calidad de la oncología, 2015).

It should be noted that the adverse effects of chemotherapy that occur in patients are: nausea and vomiting occur in 35 to 80% of patients with cancer, appearing late in a period after 5 days of having received the treatment and in some cases acutely before 24 hours (OMS,2014). In fact, the problems that can occur are: alopecia, fatigue and potentially fatal effects such as plateletopenia (Vidall, Fernández-Ortega et al. 2015) (Cancer Institute, 2017) causing these symptoms of deterioration of the oncologic patient's well-being and quality of life (Carneiro, Bezerra, Freire, Alves, Cartaxo, Alencar,2019).

Indeed, the oncology patient requires professional nursing care where the health condition is monitored, controlled and can be followed up continuously to provide relief and comfort, for which the nursing professional must use all the means of communication in recent decades, such as the different virtual platforms offering medical services and nursing consultations to meet the information needs regarding their health condition. The care approach to oncology patients should provide accompaniment, information support and counseling to reduce post-chemotherapy adverse effects (Carneiro, Bezerra, Freire, Alves, Cartaxo, Alencar,2019). Undoubtedly, the follow-up phase is one of the steps that is contributing to make the trajectory of a cancer patient to that of a cancer survivor as less traumatic as possible (Graff, Blanchard, Thariat, Racadot & Lapeyre, 2019).

Information and communication technology in the field of health has become a tool for a variety of resources, techniques and processes that are used to store, process and transmit relevant information required by cancer patients to respond to their health problems (Carneiro, Bezerra, Freire, Alves, Cartaxo, Alencar, 2019). Likewise, the recent and rapid advances in informatics and telecommunications are showing the production and management of information through codes, texts, images, sounds (Garcia, Navarro, López & Rodríguez, 2014). The monitoring of side effects should be integrated into nursing practice as a routine task, because it has been seen that it is essential to have post chemotherapy information collected by telephone, for example, post chemotherapy toxicity, to be attended in a timely manner. When the information is permanent, the patient has access to reach the facilities as soon as possible (Breen, Ritchie, Schofield, et al.,2015).

Thus, the World Health Organization (WHO) points out that telemedicine is increasingly spoken of and emphasizes that it is nothing more than making efficient and economical use of ICT information and communication techniques (OMS,2014), (Bulechek, et al., 2011).

Furthermore, in relation to the transfer of the patient to the hospital center and provides comfort to receive care in the comfort of your home, therefore, this phase of monitoring is becoming an important alternative nurse - patient communication (Alcázar y Ambrosio, 2020). Education accompanied by technology is an important tool for improving the self-care skills of the ambulatory patient, in addition to favoring the ability to learn and modify life habits in the personal and family sphere based on the decisions made by the informed patient (Vialart, 2016).

According to Alcázar y Ambrosio (2020), telenursing is a technological support where various virtual platforms can be used, facilitating interaction with patients to carry out follow-up activities that favor the continuity of nursing care in daily practice (Heckel, et al,2018). It should be noted that there is resistance on the part of nurses in the use of the virtual environment. (González, Ballesteros, Crespo de las Heras &Perez, 2016).

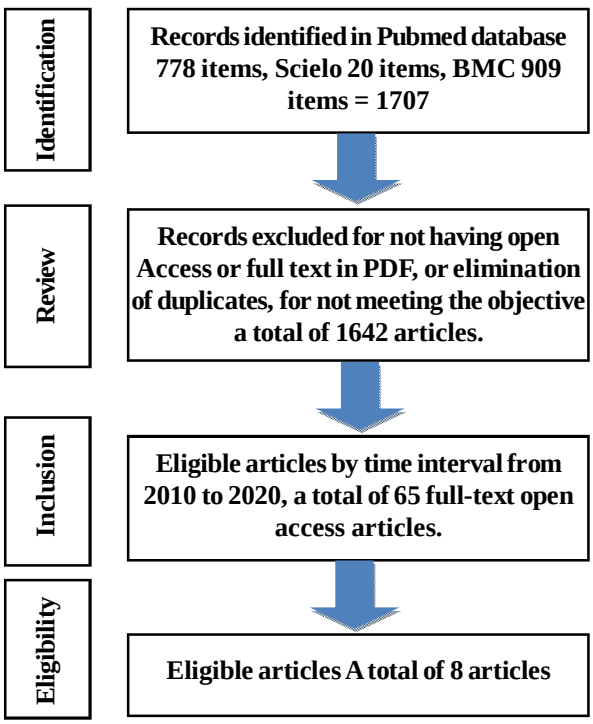
The virtual environment is necessary to improve access to health care, favor knowledge of the dis-

ease, compliance with treatment, adaptation to the disease; favor self-care, improve satisfaction indicators, quality of life and reduce visits to medical services and health care costs (Qiao, Tang, Zhang, Tian, Liu, Yang, & Ye, 2019).)

Finally, it is important to know and reflect on the incorporation of technology, especially tele-nursing as a new modality to incorporate in the practice of care, education and care management to sustain the accessibility of health services aimed at individuals, family and community. The reviews establish a systematic search guideline of information sources to clarify and understand this phenomenon as an answer to the research question: What are the scientific evidences available on tele-nursing in the care of oncology patients related to the aspects: timely detection of

METHOD

The research method was a systematic and descriptive review in Spanish, Portuguese and English available in 3 databases: BMC, Pubmed and Scielo. The following descriptors were used: "Tele-nursing" and "oncology patient" and their respective synonyms in English and Spanish. The Boolean operators "OR" and "AND" were used, as well as the titles and abstracts in the different databases in the years from 2010 to 2020. The articles were then classified according to the inclusion and exclusion criteria that had been determined. This resulted in the articles that were analyzed. Articles were excluded when they did not meet the methodological quality or only had an abstract. The extraction of the articles was based on the author of the article, the year of publication of the article, the number of population or samples used, objective, research design and the results obtained in the article. After obtaining the reviewed article, the editor performed a critical appraisal and the final stage is the graphing of the data. Filtering and selection of the articles using the PRISMA flowchart. The search results using these two keywords yielded 1707 articles. The articles were then filtered using the inclusion and exclusion criteria and 1642 articles were obtained. Subsequently, articles were eliminated for duplicity, resulting in 65 articles, and finally, the reading of the abstracts was performed, where 57 articles that did not meet the inclusion criteria were eliminated, leaving 8 articles on the base.



RESULT

Table 1 Scientific Evidence on Tele-Nursing in The Care of Oncology Patients

Researcher	Year	N	Objective	Design	Resul
Heckel L., Fennell K. M., Reynolds J., Boltong A., Botti, M., Osborne, R., Mihalopoulos, C., Chirgwin, J., Williams, M., Gaskin, C. J.,	2018	80	The aim of this single-blind, multi-centre, randomised controlled trial was to test the efficacy of a telephone outcall program to reduce caregiver burden and unmet needs, and improve psychological	Randomised controlled trial	Adherence, measured as the recruitment rate, was 96% (80/83) and the dropout rate was 6% (5/80). During the study period, 3/80 (4%) patients relapsed and 5/80 (6%) patients returned to standard follow-up because they required closer medical observation. It was concluded that a shared care follow-up, supported by

Ashley, D. M., & Livingston, P.			well-being among cancer caregivers, as well as evaluating the potential impact on patient outcomes.		PROs, was a viable alternative to standard follow-up for patients with B-cell disease in remission.
Qiao S, Tang L, Zhang W, Tian S, Liu M, Yang L, Ye Z .	2019	231	To compare the effectiveness of nurse-led telephone calls plus WeChat versus telephone calls only for the pain management of outpatients with cancer.	quasi-experimental study	Patients manifest major problems were constipation, nausea, vomiting and dizziness were lower ($p<0.01$), while medication adherence ($p<0.05$) and satisfaction with pain management were higher ($p<0.01$). Nurse-led follow-up phone calls combined with WeChat significantly reduced opioid-related health problems such as pain intensity, side effects, and medication adherence
França A.; Rodrigues A.; Aguiar M.; Silva R.; Freitas F.; Melo G	2019	61	To verify the effectiveness of telenursing in the control of nausea and vomiting induced by antineoplastic chemotherapy	Randomized clinical trial	The monitoring of telephone calls significantly helps in the control of nausea and vomiting in patients receiving chemotherapy treatment on an outpatient basis.
Williamson, S., Chalmers, K., & Beaver, K.	2015	26	This study aimed to explore patient views of TFU.	Qualitative study	All patients found TFU to be a positive experience and all expressed a preference to continue with (telephone follow-up). Three main themes emerged from the patient interviews; 1) accessible and convenient care, 2) personalized care, and 3) relationship with the nurse specialist.
Kelly, F., Carroll, S., Carley, M.	2017	490	The objective of this study was to adapt and evaluate the acceptability of an evidence-informed symptom practice guide (SPG) for use by nurses over the telephone for the assessment, triage, and management of patients experiencing dyspnea due to cancer treatment-related cardiotoxicity.	Descriptive study	The study highlights the lack of knowledge tools and clinical practice guidelines available to guide healthcare professionals in assessing, classifying and/or offering self-care strategies to patients with cardiotoxic dyspnea related to cancer treatment.
Stacey, D., Green, E., Ballantyne, B., Tarasuk, J., Skrutkowski, M., Carley, M., Chapman, K., Kuziemsky, C.,	2016	119	This study aimed to build an effective and sustainable approach for implementing the COSTaRS protocols for nurses providing telephone based	Comparative case study	Nurses felt more confident with symptom management and using COSTaRS protocols ($p<.01$). Chart audits revealed that protocols used were documented between 11% and 47% of patient calls. Training and other interventions improved nurses'

Kolari, E., Sabo, B., Saucier, A., Shaw, T., Tardif, L., Truant, T., Cummings, G. G., & Howell, D.			symptom support to cancer patients using a series of case studies		confidence in using the COSTaRS protocols and their acceptance was evident in some documented phone calls. The protocols could be adapted for use by patients and nurses worldwide.
Kondo, S., Shiba, S., Udagawa, R., Ryushima, Y., Yano, M., Uehara, T., Asanabe, M., Tamura, K., & Hashimoto, J	2015	253	To assess adverse effects through a telephone consultation service for cancer patients receiving outpatient chemotherapy.	Cohort study	The occurrence of grade 2 or worse AEs (Hazard ratio = 6.58, P <0.001). Changes in planned chemotherapy occurred more frequently in cases of male patients (hazard ratio = 2.70, P = 0.02) and in cases of grade 2 or worse AEs (hazard ratio = 6.58, P <0.001).They found that AE assessment by CTCAE through a telephone consultation service is useful for both patient classification and prediction of severe AEs that may change clinical schedules.

DISCUSSION

Scientific evidence made visibly and identified the needs of home care, timely detection to reduce post chemotherapy adverse events and therapeutic demands of oncology patients that favor their self-care, thus requiring personalized advice from nursing professionals through tele-nursing for control and follow-up of the oncology patient's health condition. This is supported in three categories which are detailed below.

Timely detection of adverse events after chemotherapy. International studies indicate that the use of the various virtual platforms such as phone calls were useful for the detection of adverse events after chemotherapy (Stacey, Green, Ballantyne, Tarasuk, Skrutkowski, Carley, et al. 2016). In the case of WeChat it helped in monitoring post chemotherapy adverse symptoms, in addition to pain management in oncology patients. In addition to maintaining an adequate management of information, it is also very useful for the reduction of nausea and vomiting associated with chemotherapy (Kondo. S. et al 2015).

It should be noted that the educational process between patient and nursing professionals has a great pillar which is dialogue, where it is possible to exchange doubts, question treatments or self-care management, transform the individual and collective behavior of the patient and family in learning and modification of life habits which allows them to make decisions in favor of their health, all this is carried out in an atmosphere of trust, a basic aspect for this process to work. (Benavent., et al., 2012) (Bulechek, et al.,2013) Likewise, another important pillar is the permanent monitoring of the patient to identify timely information for effective management and even if necessary to reach the hospital facilities immediately (Alcázar and Ambrosio,2019).

Undoubtedly, technology is an indispensable element in communication and the patient has this resource as an opportunity to strengthen health education favoring holistic care to respond to the needs and therapeutic demands.

Self-care. These are actions that the person assumes in a mature way daily activities to adopt healthy lifestyles to reduce symptoms and discomfort after chemotherapy (Li, G., Zhang, S., & Xu, B,2019) argue that in tele-nursing it was possible to identify and assess the needs and situations faced by the patient during oncological treatment through telephone calls. This tele-care favors the follow-up and control of the specialized nurses, they provided answers to the problems they presented in the consultation and stated that this form of care is a viable option to achieve timely care and satisfaction with the service provided. Patient satisfaction is an indicator that benefits adherence to treatment, self-care and ensures continuity of visits to the health facility. Heckel, et al. (2018), indicate that tele-nursing is a viable alternative to standard follow-up for cancer patients in remission.

It should be noted that continuity of care was an important factor in building a relationship of trust between the patient and the nurse. This Platform is innovative and it may be useful for specialized nurses to meet personally with eligible patients to establish a good therapeutic relationship where self-care is promoted. On the other hand, Williamson et al. (2015), expresses that recruitment adherence is rescued which raises awareness and awareness to promote their own self-care being lower the drop-out rate so the author considers that the results are encouraging on the confidence and satisfaction of patients.

Control and follow-up of the oncologic patient's health condition. Most of the published articles show that patients who come to health institutions need information about their self-care at home. The lack of information brings doubts and fears so they require counseling to address their health problems. For control and follow-up activities, nursing professionals need to innovate in care through virtual media which are technological tools where health education is emphasized to achieve control and follow-up of the oncology patient's health condition in addition to identifying the effects of chemotherapy post-treatment. These activities based on telephone consultations such as tele-nursing increase recruitment and adherence, while reducing abandonment, guaranteeing an improvement in the quality of life of the individuals, as well as their personal well-being (Heckel, et al., 2018).

Likewise, in the care provided, the causes of the self-care deficit of the oncology patient during chemotherapy treatment were made visible (França, Rodrigues, Aguiar, Silva, Freitas & Melo, 2019). In this sense, telenursing is a positive experience for the patient in their follow-up and control, besides being an accessible and convenient form of care, it reduces the cost of travel to the health institution and the advice is personalized (Williamson, Chalmers, Beaver, 2015).

In fact, the use of these new forms of education through telephone follow-up strengthened education, self-care, reduced hospital visits and controlled post-treatment symptoms with chemotherapy (González, Ballesteros, Crespo de las Heras y Pérez,2016). The transcendence of caring is a nursing responsibility according to their institutional functions is to follow up patients, in addition, the nurse is interested in knowing more about the disease, trust between the patient-nurse to promote health education and achieve effective communication. This activity requires knowledge and a clinical practice guideline available to health professionals who are required to assess, classify and/or offer self-care strategies to cancer patients (Williamson, Chalmers & Beaver, 2015).

The use of protocols demonstrated that telephone calls to identify postchemotherapy patient symptoms. The prior training nurses received in the use of this protocol provided confidence and patient acceptance was evident through documented calls. The protocols could be adapted for use by patients and nurses worldwide (Kelly, Carroll, Carley, Dent, Shorr, Hu, et al., 2017).

Undoubtedly, specialized nursing care services through the use of virtual environments allow the strengthening of nurse-patient therapeutic relationships and trust to transmit information to help overcome risk situations, self-care deficits and management of existing health problems. It is important to emphasize that timely information reduces uncertainty and provides wellbeing to favor self-care.

CONCLUSION

The findings found in the systematic review allow us to evidence that the authors of the articles agree that tele-nursing in the daily work of nurses offers advantages and incorporates professional care through their own care, administrative, research and educational functions in a virtual environment that contributes to improve nurse-patient health communication. In addition, targeted health education allows an adequate response to timely detection to reduce post-chemotherapy adverse events, supports self-care and promotes the control and monitoring of the oncology patient's health status through technological tools. At present, tele-nursing in the face of social isolation has become an answer to continue offering nursing services to support self-care at home, promote quality of life and provide wellbeing in the face of the disease, the implication of not having these means is an obstacle to providing timely and quality care.

SUGGESTIONS

It is necessary to implement a care guide to carry out this educational activity through tele-nursing. It is also important to train nurses to achieve skills in the use of virtual platforms.

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