

## SYSTEMATIC OR INTEGRATIVE REVIEW

### TELEMONITORING AS INTERVENTION IN THE POSTOPERATIVE FACECTOMY: SYSTEMATIC REVIEW OF THE LITERATURE

### TELEMONITORAMENTO COMO INTERVENÇÃO NO PÓS-OPERATÓRIO DE FACECTOMIA: REVISÃO SISTEMÁTICA DA LITERATURA

### TELEMONITORIZACIÓN COMO INTERVENCIÓN EN EL POSTOPERATORIO DE FACECTOMÍA: REVISIÓN SISTEMÁTICA DE LA LITERATURA

Tallita Mello Delphino<sup>1</sup>  
Priscilla Alfradique de Souza<sup>2</sup>  
Rosimere Ferreira Santana<sup>3</sup>

<sup>1</sup> RN. Master's student in Health care Science. Fluminense Federal University – UFF, Niterói, RJ – Brazil.

<sup>2</sup> RN. PhD student in Nursing. University of Texas, Health Science Center at San Antonio – UTHSCSA, Texas, TX – USA.

<sup>3</sup> RN. PhD in Nursing, Assistant Professor. UFF, Department of Medical Nursing, Niterói, RJ – Brazil.

Corresponding author: Tallita Mello Delphino. E-mail: tallitamell@hotmail.com

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### ABSTRACT

This study aimed to identify the use of the 'telephone follow-up' as a nursing intervention in the postoperative period of patients who underwent cataract surgery. It is a systematic literature review conducted in the databases MEDLINE, CINAHL, and LILACS, in accord with PRISM methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The sample consisted of five articles discussing the theme. The studies included were from countries as China, England, and Germany, and belonged to International Medical Journal, indicating the necessity of increasing nursing research on this subject and in our sociocultural context. We observed that the telephone follow-up was conducted by Short Message Service (SMS) as reminders for attendance at ophthalmology outpatient clinics. The follow-up conducted with phone calls was also assessed as necessary in the context of the need for information and support to patients followed up in ophthalmology service. The use of telemonitoring in postoperative patients who underwent cataract surgery can be considered a viable and cost-effective alternative to the continuity of postoperative care in their homes.

**Keywords:** Cataract Extraction; Telenursing; Postoperative Care; Nursing Care.

### RESUMO

*Este estudo objetivou identificar o uso do "acompanhamento por telefone" como intervenção de enfermagem no pós-operatório de pacientes submetidos à cirurgia de facetectomia. Trata-se de uma revisão sistemática da literatura realizada nas bases de dados MEDLINE, LILACS e CINAHL, conforme a metodologia Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A amostra constituiu-se de cinco artigos envolvendo a temática. Os estudos incluídos eram de países como China, Inglaterra e Alemanha e pertenciam a revistas médicas internacionais. Evidencia-se a necessidade de aumento da produção de pesquisa sobre a temática na área da enfermagem e em nosso contexto sociocultural. O acompanhamento por telefone foi realizado por intermédio do Serviço de Mensagens Curtas (SMS), como forma de lembretes para comparecimento em consultas ambulatoriais de Oftalmologia. O acompanhamento realizado por ligações telefônicas também foi avaliado como necessário no contexto da necessidade de informação e apoio aos pacientes seguidos no serviço de Oftalmologia. O uso do telemonitoramento no pós-operatório de pacientes submetidos à facetectomia pode ser considerado uma alternativa viável e de baixo custo para continuidade dos cuidados pós-operatórios em seus domicílios.*

**Palavras-chave:** Extração de Catarata; Telenfermagem; Cuidados Pós-Operatórios; Cuidados de Enfermagem.

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## RESUMEN

*El objetivo de este estudio fue identificar el empleo del "seguimiento por teléfono" como intervención de enfermería en el postoperatorio de pacientes sometidos a una operación de facemetría. Se trata de una revisión sistemática de la literatura realizada en las bases de datos MEDLINE, LILACS y CINAHL, según la metodología PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). La muestra la componen cinco artículos relativos a la temática. Los estudios incluidos eran de países como China, Inglaterra y Alemania y pertenecían a Revistas Médicas Internacionales. Se evidencia la necesidad de aumentar la producción investigativa sobre dicho tema en el área de enfermería dentro del contexto sociocultural. Se analizó que el seguimiento telefónico se realizó a través del Servicio de Mensajes Cortos (SMS), en forma de anotaciones para presencia a las consultas de oftalmología. El seguimiento realizado a través de llamadas telefónicas también se evaluó como necesario dentro del contexto de la necesidad de información y apoyo a los mencionados pacientes del servicio de oftalmología. El empleo de telemonitorización en el postoperatorio de pacientes sometidos a facemetría puede considerarse una alternativa viable y de bajo costo para continuidad de cuidados postoperatorios domiciliarios.*

**Palabras clave:** Extracción de Catarata; Teleenfermería; Cuidados Posoperatorios; Atención de Enfermería.

## INTRODUCTION

As people get older, vulnerability and the prevalence of common diseases of aging increase including cataracts, which consists of partial or full opacity of the lens, and may have degrees density variables, size, and location.<sup>1</sup> It may be considered the treatable most common cause of blindness worldwide, affecting 12-50% of people over 65 and 75% of individuals over 70 years old.<sup>2</sup> Although it is found predominantly in populations of older adults, cataracts are also evidenced in about 5.5 to 12% of carriers children of low vision in Brazil. It is estimated that there are about 200,000 blind children in the world due to bilateral cataract.<sup>2</sup>

This condition can be reversed by appropriate surgical intervention, called cataract surgery. Such intervention enables the restoration of vision, whose recovery time expected to return to work activities is between three and seven days if they do not require much effort.<sup>3</sup>

The complications of this surgery rates vary in the literature from 2.0 to 14.7%.<sup>4</sup> The main complications are Increased intraocular pressure, corneal edema, posterior capsular opacity, vitreous loss, inflammation, and endophthalmitis.<sup>1,4</sup> Half of these complications can be avoided or minimized through adequate educational surgical process during the perioperative period, promoting minimizing anxiety and postoperative complications, as well as the active participation of the patient in the rehabilitation process.<sup>4</sup>

However, due to the current trend of implementation of operations in the shortest possible perioperative period, called fast-tracking<sup>5</sup>, there is a reduction of the time available for providing information to the patient. Thus, the guidelines from admission until discharge may be poorly absorbed or misunderstood.<sup>5,6</sup>

Therefore, some strategies are being used for postoperative follow-up of these patients and detect problems early and efficiently, such as the use of telephone monitoring, video conferencing and mobile messages.<sup>7-10</sup> For these strategies, some terms have emerged in health: telehealth, telemedicine, telenursing, telemonitoring and telephone follow-up.<sup>8,9</sup>

The use of telemonitoring is increasing, and there is an effort to provide high-quality care also to be cost-effective.<sup>8</sup> Studies show that the telephone monitoring was related to continuity of care, providing education and relevant guidance in the postoperative period, as the needs of each patient.<sup>9,10</sup>

Through the above, the development of this study due to the growing increase is justified by the aging population, which consequently has led to an increase in surgical procedures such as cataract surgery. The advancement of information technology, including telephony, is also an important justification, since it has become part of people's lives around the world and contributed increasingly to health care, from the facilitation of communication with people.

Therefore, this study aims to identify in the literature, through the systematic review, the use of "telephone monitoring" as a nursing intervention in postoperative patients undergoing cataract surgery.

## METHOD

This is a systematic review study conducted as the Preferred Reporting Items methodology for Systematic Reviews and Meta-Analyses (PRISMA Statement) tool created to help authors of systematic reviews or meta-analyses to assess the results of a health intervention to ensure transparent and complete information on its results.<sup>11</sup>

As the first phase of the process for conducting the systematic review, a search protocol was elaborated containing (1) research question of the review, (2) the inclusion and exclusion criteria, (3) search strategy, (4) as a critical evaluation of studies (5) collection and synthesis of data. This detailed construction of the search protocol is intended to ensure that the review is conducted with the same rigor of a scientific research.<sup>11</sup>

For the construction of the research question, it was used the PICO strategy, which is an acronym for patients, intervention, comparison, and outcomes:

- P – Patients in the postoperative cataract surgery
- I – Phone Monitoring
- C – conventional post-operative care
- O – Reduction of postoperative complications

Then, the following research question was made: Have patients in the postoperative telephone accompanied cataract surgery reduced postoperative complications when compared to conventional care?

The criteria for the inclusion of articles were: articles with primary data that address monitoring by phone; cohort studies and randomized clinical trials with random allocation to address monitoring by phone; indexed articles published in English, Spanish and Portuguese, regardless of the date of publication, with direct and indirect approach to the issue and that met the guiding research question. Exclusion criteria were: case report articles, case series, and expert opinion; research protocols; theses and dissertations not published; articles without determination of a clear methodology, or not treating the theme.

To identify articles on the subject, there was a search online in databases Medical Literature and Retrieval System Online (MEDLINE) via PUBMED, Latin American and Caribbean Health Sciences (LILACS) via Regional Library of Medicine (BI-REME) and Cumulative Index to Nursing and Allied Health Literature (CINAHL) via Journals Portal Personnel Improvement Coordination of Superior Level (CAPES), from 14 to 20 July 2014, using the descriptors, *old, extraction cataract, ophthalmology, telemedicine, telecare, and nursing*, both in Portuguese and English and associated with each other. There were also other specific descriptors used: *telephone aftercare, telephone counseling, follow-up telephone, telephone utilization, telephone outcomes, telenursing care postoperative*. During the search strategy, the Boolean operators AND and OR were used to perform the associations.

After consulting the databases and application of search strategies, the selection of studies was carried out, which first occurred by reading the titles and abstracts. After pre-selection, there was the recovery of the full articles and elimination of duplicate articles. Of the total of 348 articles distributed in MEDLINE databases (314), LILACS (9) and CINAHL (25), 326 were excluded after reading the titles and abstracts, leaving 22 undergoing the complete reading. Of them, nine were excluded by application of the exclusion criteria, leaving 13 articles. Then, eight repeated items were retired, leaving five that were included in the study sample, bringing the monitoring by phone as an intervention in postoperative cataract surgery, as well as adequacy and theoretical and methodological contributions, which are later analyzed (Figure 1). It is noteworthy

that there were no losses during data collection. All articles selected for full reading were found and included in the study.

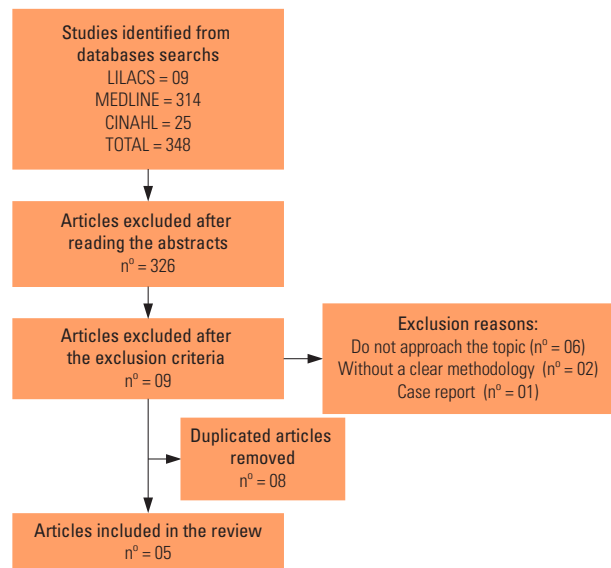


Figure 1 - Flowchart of identification and selection of articles for systematic review on the use of telephone monitoring in the postoperative cataract surgery, Brazil, 2014.

For extracting data from the articles, it was elaborated a data collection instrument containing the following information: product identification data (authors, training area, volume, year of publication, country, journal title, database where it was found), methodological characteristics (purpose of the study, study type, size and characteristics of the sample and scenario), description of the main results, description of the authors' conclusions, limitations found in the study and classification of the level of evidence proposed by Oxford.<sup>12</sup> Five articles included were critically evaluated for authenticity, methodological quality, and relevance of the information.

The analysis of the studies found was done descriptively and in two stages. First, the sample was characterized by simple descriptive statistics use and distribution of frequencies for publication year, country, the method employed, professional category of authors, journal, and databases of articles included in the study. In a second stage, an exhaustive reading was held, focusing on the use of "telephone monitoring" as a nursing intervention in postoperative patients undergoing cataract surgery.<sup>13</sup> After this reading, the data were organized in a table to facilitate the understanding of the information and/or evidence cited in the articles. As a literature review of research and not involve human beings, there was no request for approval by the Research Ethics Committee (Recommendations of the National Health Council Resolution 466/12).

## RESULTS

According to the characterization of the articles, the following distribution of publications by country was found: England (two studies – 40%); China (one study – 20%); UK (one study – 20%) and Germany (one study – 20%).

As regards the year of publication, it was noted that they were between 2002 and 2012, with the following distribution: 2002 (one study – 20%); 2008 (one study – 20%); 2010 (one study – 20%); 2011 (one study – 20%) and 2012 (one study – 20%). The five articles included were available in MEDLINE database and belonged to international medical journals, stressing the need for increased research on the subject production in nursing.

Regarding the study design found, three (60%) articles were characterized as a randomized clinical trial, one (20%) as a cohort study and one (20%) as descriptive/exploratory study. The latter was included by reference to the research theme and for bringing research results relevant to this study. All studies included are quantitative approach with the high level of evidence, according to Oxford (2009), distributed as follows: level of evidence A/1B (04 studies – 80%) and level of evidence B/2C (01 study – 20%).

Table 1 summarizes the five articles included in the systematic review regarding the use of telephone monitoring in the postoperative cataract surgery. It is possible to see that only two studies (01 and 05) brought the phone for monitoring post-operative cataract surgery, one related to pediatric cataract and another cataract surgery was in adults and the elderly. The other three studies (02, 03 and 04) dealt with the follow-up by phone in clinic General Ophthalmology and not specifically in cataract surgery, which included the submitted proposal for intervention.

The use of telephone monitoring postoperative patients undergoing cataract surgery showed positive results in 100% of the identified studies. This intervention has been pervasive worldwide successfully in different age groups in Europe and Asia. However, none of the studies reported participation of nurses in the interventions. Among the main results, there is better adherence to consultations, as well as treatment and early detection of complications.

## DISCUSSION

Currently, due to the changes and new clinical practice, the adoption of new technologies in patient care becomes necessary as the use of computer for virtual consultations, use of telephone monitoring, video conferencing and mobile short message service, called Short Messaging System (SMS).<sup>8,10</sup>

In this context, the use of communication technology in health, including monitoring by phone can allow access to health specialists. People that somehow would not be available with a frequency appropriate to meet their needs can benefit. Thus, this feature facilitates professionals access in locations

with the uneven distribution of doctors and nurses without having to travel long distances.<sup>13</sup>

According to the systematic review, it was found that in three studies<sup>7,14,15</sup> the telephone monitoring was performed using SMS as a form of reminders for attendance at outpatient ophthalmology consultations. In these studies, reminders via SMS significantly improved adherence to treatment of cataract and shown to be effective and efficient in reducing non-attendance in consultations, for allowing notice of cancellation by the patient and facilitate the rescheduling, thereby improving the efficiency the provision of health care in outpatient ophthalmology.

It is also noteworthy that the failure to attend outpatient appointments, and reduce the quality of care, results in increased waiting time for other patients who are still waiting for the service. It also causes significant financial losses for health systems.<sup>14</sup>

The phone in health care has benefits, including the patient's speed of access to the health professional (and vice versa), reducing the waiting time for consultation, reducing time and cost in the transportation of patients, and enable increased frequency of contacts and facilitate the return of the patient.<sup>15</sup>

Among the studies included in the search, only one<sup>16</sup> proposed to evaluate the monitoring conducted by phone calls. In this case, the service was well evaluated as necessary in the context of the need for information and support to patients followed in ophthalmology service.<sup>16</sup> Telephone monitoring through phone calls is related to the increase in the rate of continuity of care in the postoperative period, providing relevant education and guidance, as needed for each patient.<sup>9,10</sup>

During the follow-up by phone, it is possible to identify in advance the need to change the care provided at home and carry out instructions to patients and their companions. There are commonly observed guidelines concerning what must be avoided postoperatively (cosmetic use near the surgical area, rub the operated eye, bend over the first few weeks, perform sudden movements with the head, sleep on the operated side) as also guidelines regarding the cleaning of the operated eye, correct use of medications (eye drops), use of cap and/or sunglasses, pain control, proper nutrition, prevention of falls and complications that may arise. Also, they also make reports on the forthcoming review and place available by telephone, for if a problem occurs or is admitted to the emergency department.<sup>4,16,17</sup> These guidelines, when carried out on the first day after surgery, assist in the prevention and detection of major complications of cataract surgery.<sup>4,17,18</sup>

In addition to providing information and remove doubts when necessary, follow up by phone can reduce the anxiety of patients, increase the bond with the professionals and the satisfaction of those who receive care.<sup>9,16</sup> Participants of the studies included in the search and monitored via telephone felt more comfortable and satisfied with the relevant answers to their questions, positively assessing the monitoring.<sup>4,14-16,19</sup>

Table 1 - Description of the articles included in the systematic review on the use of telephone monitoring in the postoperative cataract surgery, Brazil, 2014

N°	Author, year (reference)	Country	Base	Journal	Evidence	Objective	Method	Main results	Outcomes/ Evaluation
01	Lin et al., 2012 (7)	China	MEDLINE	Ophthalmology	A/1B	Assess if the short text messages service (SMS) for mobile phone for parents of children with cataracts improves adherence to postoperative visits and increase the early detection rate of treatable postoperative complications.	Randomized, controlled trial with a sample of 258 pairs of parents involved in child cataract program. Intervention parents received automatic reminders before the scheduled appointments, while parents in the control group did not.	Attendance rates in consultations on the SMS intervention group were higher than the rates for the control group (p <0.005), which showed pronounced tendency to decrease in subsequent visits. The total frequency rate was 91.3% in the SMS group and 62.0% in the control group. The total increase in overall attendance rates with SMS reminders was 47.2% (RR for service, 1.47; 95% IC, 1.16-1.78; p <0.003). The incidence of secondary ocular hypertension diagnosed postoperatively was also significantly higher in the SMS group than in the control group.	<b>Outcome:</b> Better adherence to consultations; early detection and treatment of complications <b>Evaluation:</b> Conference of the patients scheduled presence list; Regular eye examinations and clinical assessment
02	Koshy et al., 2008 (14)	England	MEDLINE	BMC Ophthalmology	A/1B	Evaluate the effectiveness of the Short Message Service (SMS) adult and elderly patients in the postoperative period as reminders for attendance at outpatient ophthalmology consultations.	Clinical randomized controlled trial. There were 447 patients in the experimental group received an SMS text message to remind them of the consultation while 9512 control group of patients did not receive SMS.	The rate of non-attendance was 38% lower in patients who received SMS as a reminder of that in patients not receiving SMS (RR of non-attendance = 0.62, 95% IC 0.48 to 0.80, p=0.0002). The use of SMS as appointment reminders provides an effective and efficient strategy in time to reduce non-attendance to consultations and thus improving the efficiency of care in ophthalmology clinic.	<b>Outcome:</b> Better adherence to consultations <b>Evaluation:</b> Conference attendance list of patients scheduled
03	Brannan et al., 2011 (15)	United Kingdom	MEDLINE	Scottish Medical Journal	A/1B	Determine the effectiveness of reminders via text messages (SMS) to improve the return rate to the Ophthalmology clinic.	Randomized clinical trial with a sample of 201 adults and elderly patients. The experiment group was contacted via SMS text message to remind them of the consultation.	The rate of non-attendance in the control group was 12%. The rate of non-attendance in the experimental group was reduced to 5.5%; 47% of patients used mobile phone technology with text messaging capability and 69% responded to the text reminder. It was observed that the sent messages allow more efficiently in the prior notice of cancellation by the patient and makes it easy to reschedule.	<b>Outcome:</b> Better adherence to consultations <b>Evaluation:</b> Conference attendance list of patients scheduled

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Table 1 - Description of the articles included in the systematic review on the use of telephone monitoring in the postoperative cataract surgery, Brazil, 2014

Nº	Author, year (reference)	Country	Base	Journal	Evidence	Objective	Method	Main results	Outcomes/ Evaluation
04	Finger et al., 2010 (16)	Germany	MEDLINE	Retina J.	B/2C	Establish and evaluate a counseling service by phone to adult and elderly patients with retinal diseases in Germany	Descriptive study. A telephone service consists of ophthalmologists was installed and open for calls throughout Germany during the period of a year and a half. Calls were guided by a standard instrument with standard guidelines. All calls were documented in an online database, which was analyzed.	They have documented 1,384 calls, with an average duration of 8.5 min. Most were female patients (63%), and 59% were > 60 years of age (19% were between 60-69 years, and 40% were > 70 years), 10% were aged 50 to 59 years, and 5% were aged 40 to 49 years. The questions were related to treatment options for retinal diseases (for example, retinitis); surgical procedure (guidance on the procedure and chances of improvement); mechanisms of action of drug use and side effects; psychological support; and the possibility of mobility. Responses were based on a standard set of responses and recommendations are given, in general, no specific advice. Specific cases were referred to-face consultations.	<p><b>Outcome:</b> Prevention of visual injuries</p> <p><b>Evaluation:</b> Online database analysis, containing patient information and incoming calls</p>
05	Yorston et al., 2002 (19)	England	MEDLINE	Br J Ophthalmology	A/1B	Determine the influences of prospective monitoring the results of cataract surgery in adults and elderly patients and after surgery in East-Africa	Cohort study. We conducted a prospective monitoring (monitoring the results of surgery) in 1,800 cataract extractions, from the creation of a database that allowed generating reports with surgery details, pre-visual acuity and postoperative acuity and postoperative and surgical complications and refractive errors end.	<p>The proportion of patients who achieved good visual outcome after vitreous loss increased from 47.2% to 71.0% (<math>\chi^2</math> p &lt;0.05). The rate of patients with good visual acuity increased, a vision of 6/12 or better was achieved by 66.0% with eyes correction and 25.6% uncorrected. The cases of visual impairment were related to preoperative factors in 51.6%, 35.5% intraoperative complications and postoperative complication in only 3.2%. There was no change in the incidence of postoperative complications. There were no cases of endophthalmitis. The study shows improved visual results after cataract surgery.</p>	<p><b>Outcome:</b> Early detection and treatment of complications</p> <p><b>Evaluation:</b> Regular eye examinations and clinical evaluation</p>



It is known that the care of the elderly in surgical situation differs from the attention other age groups receive since the changes resulting from the aging process and related diseases can compromise the functional balance and increase the vulnerability of the elderly to have postoperative complications.<sup>20</sup> In view of the technological advancement and ease of access to information and guidance to the distance, it is observed that the telephone monitoring has contributed to minimizing postoperative complications and quality of life of this age group, in addition to providing active participation of the elderly and family in the rehabilitation process.<sup>15,16</sup>

Also, there is the importance of evaluating the quality of life and levels of satisfaction with cataract surgery. For this, questionnaires are used for the daily tasks of each patient, for example, assess if patients can see signs and traffic signals, with or without correction; if they can do crafts (sewing and embroidery), writing checks or forms, play bingo, dominoes or cards, practice sports, cooking, watching television, driving day and night, shaving or applying makeup, with or uncorrected. This is a more reliable way of knowing whether these patients are satisfied or not with the final vision after cataract surgery.<sup>2</sup> It is worth remembering that phone use does not replace face consultations, which are essential to the care and monitoring, but may rather be an enabler to improve monitoring after discharge of surgical patients.

As a limitation, it is emphasized the fact that the five articles included in the study are medical research and no nursing, showing a gap in knowledge in the area. Thus, for future generalization of nursing interventions, yet it is necessary that the nurses take hold of existing technologies to improve the quality of care and facilitate their use by professionals.

Thus, if properly used, technology can help streamline and improve the nursing process, helping patients achieve better results in the safest possible way and improving support to nurses in patient care.<sup>19</sup> Thus, the technologies incorporated into clinical practice may be an important tool provided, since it is integrated into human care in its many dimensions and characteristics.

The interventions identified with satisfactory results in cataract surgery after surgery in different countries allow generalization and implementation of this practice in the Brazilian scene. For future practical applications, it is suggested the construction of a database containing details of the surgery, assessment of visual acuity pre and postoperative surgical complications and presented after hospital discharge.<sup>19</sup> Such action may help improving monitoring of cases in cataract postoperative.

## CONCLUSION

Despite the lack of studies on the use of telemonitoring in the postoperative period in patients undergoing cataract surgery, the found articles demonstrate that monitoring by phone

can be considered a viable alternative in providing post-operative care in general ophthalmology clinic. In the selected articles, it was observed that the telephone follow-up of patients undergoing ophthalmic surgery improves treatment adherence, continuity of post-operative care at home, and allows reducing anxiety.

It is also emphasized the lack of publications on the subject in nursing and the consequent need for increased research production, given that all studies included in the search belonged to the medical area. Also, the Brazilian health system is still not using telephone follow-up for surgical patients, despite being one of the countries with the highest number of mobile network users. Thus, the studies evaluated are from a different cultural and economic reality found in our country, and studies in our context.

As a subsequent proposal in this study, it is intended to test a protocol of nursing guidelines in the distance. Such guidelines will be promoted through telemonitoring for patient follow-up after hospital discharge, to ensure full recovery of health and contribute to the independence and autonomy of this elderly.

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