

Satisfaction of chronic patients with clinical management by telemonitoring

Satisfacción de pacientes crónicos con manejo clínico por telemonitorización

Satisfação de doentes crônicos com o gerenciamento clínico por telemonitoramento

ABSTRACT

To identify the dimensions of the satisfaction of chronic patients with clinical management by telemonitoring. Method: Cross-sectional study, from 2019, with 102 chronic patients of a health plan operator, in the Paraná-PR. Adults were included, independent for daily activities and who participated in this intervention for six to 12 months. Recorded telephone interviews were conducted with a questionnaire. Mann-Whitney U test and Poisson regression were used to analyze the data. Results: Most participants were satisfied with the intervention (97%), would recommend it (92%), would like to keep it (89,2%) and rated it as excellent (93%). Beneficiaries with less education were more satisfied with the professionals' technical knowledge ($p = 0,045$), their ability to explain ($p = 0,004$), the importance of clinical management ($p = 0,010$) and general satisfaction with it ($p = 0,028$). There was an association between age, the quality of information given by the professional ($p < 0,001$; $PR = 0,505$; $CI = 0,70-0,66$), quality of clinical management ($p < 0,001$; $PR = 0,507$; $CI = 0,72-0,64$) and general satisfaction with it ($p < 0,001$; $PR = 0,058$; $CI = 0,71-0,64$). Conclusion: The dimensions of satisfaction identified explained the quality of health care for chronic patients at the time studied. Seen as satisfactory, clinical management by telemonitoring can be an option of assistance change for greater sustainability of the health plan operator.

DESCRIPTORS: Chronic disease; Patient satisfaction; Telemedicine; Disease management; Health status.

RESUMEN

Objetivo: Identificar las dimensiones de la satisfacción del paciente crónico con el manejo clínico mediante telemonitorización. Método: Estudio transversal, de 2019, con 102 pacientes crónicos de un operador de plan de salud, en el Paraná-PR. Se incluyeron adultos, independientes para las actividades diarias y que participaron en esta intervención durante seis a 12 meses. Se realizaron entrevistas telefónicas grabadas con un cuestionario. Se utilizaron la prueba U de Mann-Whitney y la regresión de Poisson para analizar los datos. Resultados: La mayoría de los participantes se mostró satisfecha con la intervención (97%), la recomendaría (92%), le gustaría conservarla (89,2%) y la calificó como excelente (93%). Los beneficiarios con menor nivel educativo se mostraron más satisfechos con el conocimiento técnico de los profesionales ($p = 0,045$), su capacidad de explicación ($p = 0,004$), la importancia del manejo clínico ($p = 0,010$) y la satisfacción general con el mismo ($p = 0,028$). Hubo asociación entre edad, calidad de la información brindada por el profesional ($p < 0,001$; $RP = 0,505$; $IC = 0,70-0,66$), calidad del manejo clínico ($p < 0,001$; $RP = 0,507$; $IC = 0,72-0,64$) y satisfacción general con él ($p < 0,001$; $RP = 0,058$; $IC = 0,71-0,64$). Conclusión: Las dimensiones de satisfacción identificadas explican la calidad de la atención de salud a los pacientes crónicos en el momento estudiado. Visto como satisfactorio, la gestión clínica por telemonitorización puede ser una opción de cambio asistencial para una mayor sostenibilidad del operador del plan de salud.

DESCRIPTORES: Enfermedad crónica; Satisfacción del paciente; Telemedicina; Manejo de enfermedad; Estado de salud.

RESUMO

Identificar as dimensões da satisfação dos doentes crônicos com o gerenciamento clínico por telemonitoramento. Método: Estudo transversal, com 102 doentes crônicos de operadora de plano de saúde, adultos, independentes e que participaram desta intervenção durante seis a 12 meses. Realizou-se entrevistas por telefone e empregou-se o teste U de Mann-Whitney e a regressão de Poisson. Resultados: Houve 97% de satisfação e participantes com menor escolaridade estavam mais satisfeitos com o conhecimento técnico dos profissionais ($p = 0,045$), sua habilidade para explicar ($p = 0,004$), importância do gerenciamento clínico ($p = 0,010$) e satisfação geral ($p = 0,028$). Houve associação entre idade, qualidade das informações do profissional ($p < 0,001$; $RP = 0,505$; $IC = 0,70-0,66$), qualidade do gerenciamento clínico ($p < 0,001$; $RP = 0,507$; $IC = 0,72-0,64$) e satisfação geral ($p < 0,001$; $RP = 0,058$; $IC = 0,71-0,64$). Conclusão: As dimensões da satisfação identificadas explicaram a qualidade do gerenciamento clínico.

DESCRIPTORES: Doença crônica; Satisfação do paciente; Telemonitoramento; Atenção à saúde; Nível de saúde.

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INTRODUCTION

Physical, mental or functional health conditions, non-communicable, with continuous monitoring or longer than one year, especially cancer, diabetes mellitus (DM) and chronic heart and kidney diseases (CKD) are prevalent, expensive and lethal to world populations, impair people's quality of life and productivity, as well as challenge health service managers in terms of prevention and management. (1)

Among the innovations in the fight against chronic non-communicable diseases (NCDs) are health care programs for people with a specific disease, which are heterogeneous and complex. Among its actions, support for self-care, continuous, programmed and remote, stands out, whose performance can be translated into patient satisfaction. (2,3)

To avoid cross-infection, patient management by telemonitoring was popularized during the current Coronavirus pandemic (COVID-19) (4) such as the interest of managers and researchers on patient satisfaction in the evaluations of health services, regarding case management and clinical management, coordinated by nurses, in monitoring people with chronic diseases.

Among the innovations in the fight against chronic non-communicable diseases (NCDs) are health care programs for people with a specific disease, which are heterogeneous and complex.

(5,6)

In Mexico, evidence on the satisfaction of patients with CNCs regarding the clinical management of the outpatient setting was limited and controversial. (6) In Italy, people with a single or multiple chronic disease (two or more chronic conditions) were satisfied with the CNC management program, developed by a multidisciplinary health team whose nurses scheduled elective appointments with specialists, advised patients on self-management and recorded their clinical data. (7)

In Spain, telemonitoring carried out by nurses had a high impact on chronic care, linked to a reduction in hospitalizations and a high degree of patient satisfaction. (8) In the United States, clinical management was the most tested strategy adopted to assist chronic patients and was associated with clinical improvements in patients with DM and AH, changes in risk behavior, health literacy and their satisfaction. (9)

It is considered that remote educational interventions, through telemonitoring, to support the self-management of the health condition, are in the process of implementation and patient satisfaction is a prime quality indicator, little explored, especially in the Brazilian private health sector. (10,11)

In order to know how the participants of clinical management through telemonitoring perceive and evaluate it, the aim of this study was to identify the dimensions of the satisfaction of chronic patients with clinical management through telemonitoring of supplementary health.

METHODS

Cross-sectional, observational, retrospective, analytical study, with a quantitative approach, carried out in 2019, in a Health Plan Operator (HPO), of the medium-sized medical cooperative type, located in the Center-South region of Paraná-PR, when 5,6% of its 30.000 beneficiaries were considered chronically ill. (12)

A population of 126 chronically ill patients over 18 years of age, independent for daily activities, who participated in clinical management by telemonitoring for six to 12 months, was studied. Those who did not answer all the questions and those who did not answer the phone call after four attempts, on different dates and times, were excluded.

Clinical management by telemonitoring comprised an educational intervention to support self-management of the health condition, made available to up to 200 beneficiaries of this HPO with AH, DM or chronic respiratory disease, distributed in 28 municipalities in the area of action. This was performed by health professionals from the multidisciplinary team, led by a nurse. Through monthly telephone contacts, the professionals identified the health needs of the chronically ill, agreed, supported and monitored their care plan.

To identify the dimensions of participants' satisfaction with telemonitoring, data collection was performed by three HPO employees, with experience in telephone customer service, previously trained by one of the authors. Based on a list with the names of the chronically ill, telephone contacts were made, from Monday to Friday, during business hours.

These collaborators introduced themselves to the participants, explained the purpose of the contact and the secure storage

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of data in the HPO telephone recording system, guaranteed their voluntary and anonymous participation, and requested their approval for the interview.

Refusals and suggestions for a new interview date were respected. Those who agreed to participate in the research had the phone call recorded and stored by the HPO for five years and received the informed consent form at home.

A questionnaire based on the literature was used, (13) previously tested with beneficiaries who participated in the studied intervention for five or less months. There were sociodemographic and satisfaction issues with the organization and the care received, namely: frequency and duration of telecontacts; courtesy, technical knowledge and ability to explain from the multidisciplinary team; quality and applicability of the guidelines received; quality, importance, satisfaction with clinical management; recommendation and desire to keep it.

The answers were ranked on a scale of one to five points (1: totally dissatisfied; 2: dissatisfied; 3: neutral; 4: satisfied; 5: totally satisfied), with satisfaction being later represented by questions with four or more points.

The collected data were simultaneously registered in a Microsoft Office Excel® software spreadsheet, without the identification of the participants, and processed by the Statistical Package for the Social Sciences for Windows® (SPSS) software.

The following independent variables were described in frequencies: (gender: female/male; age: <25, 25-34, 35-49, 50-65 and >65 years old; education: illiterate, high school, elementary school, undergraduate and graduate - graduation; place of residence: HPO municipality, Curitiba-PR and other municipalities; self-assessed health level: very bad, bad, undefined, good and very good). Subsequently, they were categorized into: age (up to 65 years old/over 65 years old); education (up to high school/higher education and more); self-rated health level: bad or undefined/good.

The dimensions of satisfaction were the dependent variables, described by frequencies and measure of central tendency, which

Table 1- Dimensions of satisfaction of participants in clinical management by telemonitoring, Center-South, Paraná-PR, 2020.

DIMENSIONS OF SATISFACTION	VERY UNSATISFIED (1)	UNSATISFIED (2)	NEUTRAL (3)	SATISFIED (4)	VERY SATISFIED (5)	MODE
Frequency of telecontact	00	03 (2,9%)	05 (4,9%)	12 (11,8%)	82 (80%)	05
Duration of telecontact	01 (0,9%)	02 (2,0%)	11 (10,8%)	09 (8,8%)	79 (77,5%)	05
Courtesy and education of the health professional	03 (2,9%)	00	00	00	99 (97,1%)	05
Technical knowledge of the health professional	00	01 (1,0%)	04 (3,9%)	07 (6,9%)	90 (88,2%)	05
Quality of information provided by the professional	00	00	02 (1,9%)	07 (6,9%)	93 (91,2%)	05
Professional's ability to provide explanations	00	00	04 (3,9%)	09 (8,8%)	89 (87,3%)	05
Usefulness and applicability of information	01 (1%)	00	3 (2,9%)	09 (8,8%)	89 (87,3%)	05
Quality of clinical management	00	01 (1,0%)	05 (4,9%)	06 (5,9%)	90 (88,2%)	05
Importance of clinical management	00	02 (2,0%)	06 (5,9%)	04 (3,9%)	90 (88,2%)	05
Overall satisfaction with clinical management	00	01 (1,0%)	02 (2,0%)	14 (13,7%)	85 (83,3%)	05

Source: Prepared by the authors, 2020.

ch were also categorized for the inferential analysis into dissatisfied or neutral/satisfied, using the Mann-Whitney U test.

A Poisson regression model with robust estimation was also developed to calculate the prevalence ratio, using a hybrid method, with the dimensions of satisfaction (dissatisfied: 1 to 3 points / satisfied: 4 and 5 points) as the dependent variables. Sociodemographic data represented the independent variables that were included in the model, one by one. A significance of 5% was adopted for all tests.

Beneficiary satisfaction was also identified through the Net Promoter Score (NPS), (14) developed by Fred Reichheld in 2001 to measure customer loyalty through the difference between the number of promoting and detracting beneficiaries.

According to the NPS, (14) promoters were the beneficiaries who awarded 4 or 5 points; neutral, those who gave 3 points; detractors, those who gave 1 or 2 points to the following question: on a scale of 1 to

5, how likely is it that you indicate clinical management by telemonitoring to a friend or acquaintance?

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RESULTS

One to three telephone call attempts were made (average of 3 calls per person), with an average duration of 30 minutes, for each participant in the clinical management by telemonitoring, with an 81% response rate.

Females (66,7%), aged 50 or over (90,2%), who studied up to high school

(53%), lived in the municipality where the HPO were located (59,8%) and good prevailed self-rated health level (67,6%).

Participants who were satisfied with the intervention predominated (97%), who would recommend it to a friend or family member (92,2%) and who wanted to continue being managed (89,2%). The dimensions of chronic patients' satisfaction with clinical management through telemonitoring were presented in table 1.

According to the Mann-Whitney U test, the association between the dimensions of satisfaction, sex and age was not significant. However, the relationship between education and satisfaction with the technical knowledge of health professionals was verified ($p = 0,045$), their ability to provide explanations ($p = 0,004$), importance of clinical management ($p = 0,010$) and general satisfaction with it ($p = 0,028$), with greater satisfaction among participants with education up to high school.

For the adjusted model, there was a sta-

tistically significant relationship between age and the following dimensions of satisfaction: quality of information provided by the professional ($p < 0,001$; $PR = 0,505$; $CI = 0,70-0,66$), quality of clinical management ($p < 0,001$; $PR = 0,507$; $CI = 0,72-0,64$), and overall satisfaction with clinical management through telemonitoring ($p < 0,001$; $PR = 0,058$; $CI = 0,71-0,64$).

It was observed that the prevalence of satisfaction with the quality of information provided by the professional, quality of clinical management and general satisfaction with this intervention was twice lower among participants up to 24 years of age, than in relation to those in the age group of 25 to 34 years old.

As per the NPS evaluative question, 2 participants were detractors, 3 were neutral and 97 were promoters, thus for 95% of the participants the experience with clinical management was excellent.

DISCUSSION

Models of care for CNCDS must be organized to meet the needs, demands and preferences of populations, so information on the characteristics of this clientele, such as gender, age, education, self-assessed health level and satisfaction with care, may be applied both in improving the relationships between beneficiaries and the health team and in supporting changes in behavior and lifestyles. (13,2)

The participation of women, beneficiaries aged 50 or over and with a good self-assessed health level was evidenced, presumably because the telecontacts took place during business hours, when, generally, retirees are at home.

The participation of chronically ill patients from cities other than the clinical management team through telemonitoring points to the efficiency of this intervention in the remote monitoring of beneficiaries, as expected for the management of people with chronic disease. (2)

The association between high patient satisfaction with the health service, older age and low education level is repeated in other studies and has been explained both

by greater gratitude and by their lower critical sense and level of demand, as the socioeconomic status often exposes them to lower quality services. (13,15)

Communication with staff, accessibility, and incentives were the dimensions of satisfaction with Medicare and Medicaid among its participants, (16) in the same way that, in this study, the chronic patient satisfaction rates were high with the quality of the information given, ability to explain, courtesy and education of the multidisciplinary health team, which represent effective therapeutic communication.

The excellent therapeutic communication observed indicates the quality of clinical management through telemonitoring, varies according to health literacy and socio-demographic characteristics of the chronic patient, and increases their skills, motivation, confidence and understanding about the process of taking care of themselves. (17)

Communication is part of patient satisfaction and, when the multidisciplinary health team detects important problems, monitors, informs, trains, discusses and activates chronic patients to take control of their health outside the clinical environment, they understand how and why they need to care, become proactive in self-management behaviors, shared decision-making and problem solving. (17)

The preponderant desire to remain in the telemonitoring represented the retention of the studied participants, possibly explained by the satisfaction with the courtesy and education of health professionals, which referred to the construction of a bond, (18) equally to the high potential for recommending the intervention, which reflected in the loyalty of patients, essential to the sustainability of the HPO.

In an Italian clinical management program, the level of satisfaction was not affected by gender and age variables, but was related to the desire to maintain follow-up by participants with only CNCDS, (7) which could also be explained by the satisfaction with the therapeutic communication observed here.

For the chronically ill in a rural clinical

management program, who were visited by nurses and participated in the operative groups they coordinated, the facilitators of the maintenance of nursing care were courtesy, the nurses' technical knowledge, their ability to communicate clearly, propose solutions to problems, encourage and support them, (19) which endorse the quality of care perceived by the chronically ill in this study.

The professionals' technical knowledge, the ability to explain, the importance of clinical management through telemonitoring and general satisfaction with it, were the dimensions of satisfaction accentuated among chronically ill patients with less education that corresponded, respectively, to the following dimensions of quality in services: security, responsiveness, empathy and reliability, which represent the potential of this intervention. (20)

The high satisfaction with the quality of the information given and the clinical management among the younger chronic patients announces that telemonitoring is an information and communication technology (ICT) suitable for clinical management, easy to use and accessible to the elderly population, with lower income and education, (21) which was confirmed by a survey of chronically ill patients in an underdeveloped Asian country, in which most of them had a cell phone and internet, but the inability with text messages prevented them from using them in communication with the healthcare team. (22)

Clinical management by telemonitoring is suitable for the elderly population with chronic disease as it overcomes most of the barriers it points out to the use of other telehealth strategies, in addition to its potential to increase their autonomy, cognitive capacity and quality of life, as well as how to lessen your psychological distress. (23) After the COVID-19 pandemic, it could also reach the immobile elderly and other conditions that expose them to risks. (24)

The clinical management of chronic patients by studied telemonitoring is incipient in Brazil and diverse in countries such as the United States, Europe, Asia and Australia, regarding the ICT used,

the composition of the health team, the complexity and number of participants, to health systems and the evaluation of their results. Although this variety compromises the generalization and comparison of the results of this intervention, the satisfaction of chronic patients indicates the quality of its perception. (25-28)

Customer satisfaction is the result of the combination of their individual characteristics, requirements, perceptions and expectations regarding the service, which brings subjectivity to this indicator of health service quality, whose analysis is complex, as high satisfaction can reflect both the low critical capacity as well as their low level of demand. (29)

Thus, a limitation of this study is the lack of data on the expectations of telemonitoring participants, the satisfaction of their families and health professionals who carry out this intervention.

Despite the massive satisfaction of the studied participants with clinical management through telemonitoring, it was the first time that it was evaluated by the HPO

and, as the disclosure of its result was optional, the internal benchmarking and with other HPO of similar size was made impossible. However, practical and smaller-scale research has contributed to the production of information on the design and improvement of chronic disease management programs. (3)

Future research on the satisfaction of chronic patients with this intervention can be improved with sociocultural issues, health literacy, critical capacity, past and new experiences with HPO and their legitimate needs.

In addition, participants in clinical management by telemonitoring should know the results of this study, as well as the general public, so that improvements are pointed out both for this intervention and for the culture of health assessment.

It is expected that these results will contribute to the evaluation of health programs and projects, in particular the innovation of care and management practices for chronic care in small towns and outskirts of large cities where there is a lack of health profes-

sionals for qualified responses to the longevity of the population.

CONCLUSION

Patient satisfaction is fundamental to the evaluation of health services, especially when seeking modernization and external certification of quality of care and, at the time this study took place, the quality of the information given and the importance attributed to telemonitoring were the dimensions of satisfaction that explained the quality of clinical management through telemonitoring for chronic patients.

This educational intervention to encourage self-management of the health condition, which used telephone contact for remote communication and information between health professionals and chronically ill health insurance providers, proved to be accessible, sustainable, effective in maintaining a good level of self-assessed health, satisfactory to the participants and adequate to the changes made to the health systems. ■

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