Patient Satisfaction with Remote Consultation at a Chronic Pain Unit

Anabela Marques, Marcos Pacheco da Fonte
CHEDV - Centro Hospitalar de entre Douro e Vouga, E.P.E.
Santa Maria da Feira, Portugal
e-mail: anabela.marques@chedv.min-saude.pt, pachecoanestesista@gmail.com

Mafalda Oliveira
UCSP Oliveira do Douro
Oliveira do Douro, Portugal
e-mail: mafalda.i.s.oliveira@gmail.com

Duarte Duque
2Ai – School of Technology
IPCA
Barcelos, Portugal
LASI – Associate Laboratory of Intelligent Systems, Guimarães, Portugal
e-mail: dduque@ipca.pt

***Abstract* — The COVID-19 pandemic represented and unprecedented global health crisis, forcing the reorganization of healthcare systems worldwide to respond to intensive care units created to treat COVID patients. Therefore, all outpatient and elective interventional procedures have been reduced or interrupted to reduce the risk of viral spread. The Centro Hospitalar de Entre o Douro e Vouga (CHEDV) Chronic Pain Unit (CPU), confronted with cancellations of all consultations and procedures, considered as non-essential or urgent, as well as the dramatic reduction in human resources, which were reallocated to essential activities, decided to start teleconsultation. Besides enabling the follow-up of patients, preventing the degradation of their clinical condition, it was intended to avoid a feeling of abandonment by the patients. This study aimed to measure patient satisfaction with teleconsultation during the Pandemic, and to understand the influence of sociodemographic variables on satisfaction, as well as to envision possible improvements in healthcare services. The results indicated a high level of patient satisfaction with the telemedicine. Despite high satisfaction most patient prefer to continue face-to-face consultation in the future. Data analysis revealed no statistically significant difference between patient satisfaction and demographic variables.**

Keywords - telemedicine; patient satisfaction; chronic pain.

I. INTRODUCTION

The first cases of infection with Sars-CoV-2, a virus from the coronavirus family, were detected in late 2019 in the Chinese city of Hubei. The zoonosis, referred as COVID-19, quickly spread around the world. In March 2020, this outbreak was declared a pandemic by the World Health Organization [1].

The COVID-19 pandemic represented and unprecedented global health crisis, forcing the reorganization of healthcare systems worldwide to respond to intensive care units created to treat COVID patients. Therefore, all outpatient and elective interventional procedures have been reduced or interrupted to reduce the risk of viral spread [2]. The shutdown of pain services in conjunction with the home lockdown has affected chronic pain management worldwide with and additional impact on patient's psychological health [3].

In Portugal, the first State of Emergency was declared between March 22 and May 2, 2020. During that period, all the non-oncological non-urgent procedures were postponed. In the CHEDV were attended hundreds of COVID-19 patients and all the anesthesiologists were reallocated to the intensive care unit, emergency services and emergency/major surgery.

The CHEDV CPU is constituted by anesthesiologists who belong to the Anesthesiology and Pain Medicine Service, with the support of other specialties such as Rehabilitation, Psychiatry, Psychology and Oncology, when appropriate. It provides healthcare to 340,000 inhabitants, a population spread over a large perimeter [10].

Until March 2020, the CPU appointments were carried out on a face-to-face basis. Confronted with cancellations of all consultations and procedures, considered as non-essential or urgent, as well as the dramatic reduction in human resources, which were reallocated to essential activities, it was decided to start teleconsultation. Besides enabling the follow-up of patients, preventing the degradation of their clinical condition, it was intended to avoid a feeling of abandonment by the patients. Therefore, during the first State of Emergency declared in Portugal, all scheduled patients of this unit were submitted to a teleconsultation by a senior physician or pain nurse.

For patients, this new consultation experience, where the interaction between the patient and clinician is performed without direct observation, may have a negative impact on the level of patient satisfaction.

Patient satisfaction can be defined as the degree of congruence between expectation and experience [4]. The quality of the service delivery experienced is defined as the gap between the expectation and the actual experience of costumers [5].

The level of patient satisfaction in the CHEDV chronic pain consultation had never been analyzed. Methodologies to assess patient satisfaction in telemedicine are unspecific, and the comparison and interpretation of results can be a problem [6]. In general, the more positive the perception of an intervention in telemedicine, the greater the likelihood of its use and benefit in clinical practice. While there have been studies examining the correlation between patient satisfaction and the implementation of telemedicine, as well

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as its impact on patient outcomes, there is a dearth of research focusing specifically on individuals with chronic pain [7, 11].

Recently, a study designed to understand the acceptance of telemedicine by chronic pain patients during the COVID-19 Pandemic in Switzerland has been published, which demonstrates the relevance of the topic [8].

The purpose of this work is to measure patient satisfaction with teleconsultation during the Pandemic, and to understand the influence of socio-demographic variables on satisfaction, as well as to perspective possible improvements in the provision of healthcare services.

This paper is structured as follows: Section II outlines the methodology used in the study, including a description of the participants, study design, and survey questions. Section III then provides a detailed account of the statistical analysis carried out on the data collected. Moving on to Section IV, the results obtained are presented and analyzed in detail. Section V delves into a discussion of these results, exploring their implications and significance. Finally, the paper concludes with an acknowledgement section and a summary of the main findings and their implications in the conclusion section.

II. METHODS

A retrospective, descriptive, cross-sectional cohort survey was conducted.

A. Participants And Study Design

The study was previously proposed and approved by the Ethics Committee of the Entre o Douro e Vouga Hospital Center.

The patients' population consisted of all the patients previously followed in the CPU that were submitted to a teleconsultation by a senior pain doctor during the first state of emergency due to Covid-19 Pandemic, declared in Portugal between March 22 and May 2, 2020.

From the universe of patients, those who fit at least one of the following exclusion criteria were not considered for the study:

- Patient deceased at the time of the questionnaire;
- Family member of a professional from CPU;
- Hospitalized patient;
- Incomplete questionnaire or misunderstandings;
- Nursing consultation;
- Patient discharged from CPU;
- Under 18 years of age.

Patients who met the criteria for inclusion in the study were contacted by telephone in order to answer the questionnaire. The telephone contact was made by a health professional other than the physician responsible for the patient. This was done to avoid possible conditioning of the response.

All selected patients gave informed consent and agreed to participate in the study. The patients who met the inclusion criteria were asked to complete a questionnaire. The questionnaire consisted of 12 simple questions, as shown in Table I. The questions were grouped by theme, each with 5 possible answers, according to a 5-point Likert scale (1 - totally disagree / 5 - totally agree):

TABLE I. QUESTIONS ASKED IN THE SURVEY

1.TECHNICAL PROBLEMS (Techn probl)
I had no technical problems in performing the consultation.
2. OBTAINING A PRESCRIPTION (Obt Presc)
I had no difficulty in obtaining a prescription.
3. UNDERSTANDING THE PRESCRIPTION (Underst Presc)
I had no trouble understanding the changes in the prescription.
4. THE IMPORTANCE OF PAIN (Pain import)
I felt that my pain was valorized by my doctor.
5. CONSULTATION DURATION (Time)
During the consultation I had the time I needed to express my symptoms.
6. SAFETY AND CONFIDENTIALITY (Safety)
During the consultation I felt my confidentiality was not threatened.
7. COMMUNICATION (Communication)
I clearly understood the explanations given to me.
8. CONFIDENCE (Confidence)
I am confident that my doctor was able to assess my symptoms during the phone consultation.
9. LACK OF PHSYCAL CONTACT (Physcontact)
I think the lack of physical contact was not a problem for the course of the consultation.
10. OVERALL ASSESSMENT OF THE CONSULTATION
I am very satisfied with the healthcare provided to me in the Chronic Pain Unit.
11. ACCEPTANCE OF TELECONSULTATION (Acceptance)
I wouldn't mind if the next appointment was by telephone.
12. FEAR OF SEVERE CORONAVIRUS INFECTION (FearCOVID)
I am afraid of becoming seriously ill due to COVID-19.

III. STATISTICAL ANALYSIS

Data analysis was performed using IBM® SPSS® Statistics Software. Continuous variables were represented with means and standard deviations. Interval data were calculated using Student test.

Spearman correlation between the listed items were calculated (Table III). A correlation of between [0.2, 0.4) was considered weak, [0.4, 0.6) moderate, [0.6-0.8) strong, and very strong between [0.8, 1].

The p-values were calculated with a chi-square test for categorical data and a t-test for continuous data. A p-value of less than 0.05 was considered statistically significant.

Missing data or unanswered survey questions were excluded from statistical analysis.

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IV. RESULTS

262 patients were submitted to a remote consultation between March 22 and May 2, 2020. From these, 47 were excluded from our study: 22 had only nursing appointment; 2 were relatives from CPU professionals; 3 refused to participate in the study; 13 don't complete or understand the questionnaire; 1 was hospitalized at the time of the survey; 3 patients died; and 3 were discharged from the CPU.

A. Sample Characteristic

215 patients met the inclusion criteria for the study. The mean participant age was 61.58 (+/-14.96). Regarding gender, the participants were mostly female (171 patients, corresponding to 79.53% of the sample). 58 of the patients have been in follow-up for less than 6 months (26.97%) and 61 for more than 5 years (28.37%).

The statistical analysis is presented in Table II.

TABLE II. DESCRIPTION OF THE SOCIO-DEMOGRAPHIC VARIABLES OF THE STUDY PARTICIPANTS

Patient Characteristics and Demographics		
Gender		
	Feminine	171 (79,53%)
	Masculine	44 (20,47%)
Age		
	Average	61,58 (+/-14,96) yrs
Marital Status		
	Married	160
	Divorced	21
	Single	18
	Widowed	16
Education		
	Illiterate	9
	Basic	106
	Secondary	91
	Higher	9
Employment Status		
	Disability pension	15
	Employed	58
	Pensioner	94
	Sick leave	24
	Unemployed	24

80.9% of the followed patients, i.e., 174 patients, were independent in the Activities of Daily Living (ADL) – Barthel Score Index. Only 5 patients (2.3%) were very dependent or totally dependent on ADL. Most patients were followed for non-oncological pain 94% (202) and predominantly from musculoskeletal causes 48.4% (104).

93% of patients totally agree/agree with the statement " I had no technical problems in performing the consultation". Also, within the dimension of technical difficulties, 86% reported no problems in obtaining the prescription, and 87.4% in understanding the changes to the prescription. In all those questions there was always patients who neither agreed nor disagreed with this statement (8.4%, 9.8% and 11.6%, respectively).

85.1% agree/strongly agree that the clinician valued their complaints during the remote consultation. A total of 7 patients totally disagreed with this statement.

Regarding the time required for the consultation, 80.5% of the patients felt that the consultation had taken an adequate duration.

Considering the current health status and compared to the previous 6 months, 40.5% (87) of patients felt no change in their condition, 35.8% (77) felt better, 18.6% (40) affirmed they felt worse, 3.7% (8) felt much better and 1.4% (3) considered themselves much worse.

After socio-demographic and descriptive statistical analysis, further statistical analysis was conducted. Regarding the question "I am very satisfied with the healthcare provided to me in the Chronic Pain Unit", it was found that 93% of the patient sample was satisfied/very satisfied with the provided services in the CPU.

Correlations were examined between the patient's overall satisfaction and other items. The results are presented in Table III.

TABLE III. CORRELATION BETWEEN PATIENT SATISFACTION WITH CPU AND OTHER ITEMS.

Patient Satisfaction	**Correlation Coef**	**p-value**
FOLLOW UP TIME (Fol time)	0.025	0.712
CURRENT HEALTH STATUS (Cur health)	0.169	0.13
TECHNICAL PROBLEMS (Tech prob)	0.285	0.00
OBTAINING A PRESCRIPTION (Obt presc)	0.258	0.00
UNDERSTANDING THE PRESCRIPTION	0,292	0.00
THE IMPORTANCE OF PAIN (Pain import)	0.481	0.00
CONSULTATION DURATION (Time)	0.475	0.00
SAFETY AND CONFIDENTIALITY (Safety)	0.276	0.00
CONFIDENCE (Confidence)	0.410	0.00
LACK OF PHISYCAL CONTACT (Physcontact)	0.446	0.07
ACCEPTANCE OF TELECONSULTATION (Acceptance)	0,476	0.08
FEAR OF SEVERE CORONAVIRUS INFECTION (FearCOVID)	0,41	0,21
AGE	0,63	0.04

There is a strong correlation between the patient age and their level of satisfaction (Cor: 0.67; p>0.05), with older

patients found to be the most satisfied with the services provided at the CPU.

In addition to the analysis presented above, the data was used to search for correlations between other variables. A correlation was found between patient age and the difficulty in understanding the changes in the prescription (Spearman = 0.010, Pearson's R = 0.027).

We also found an association between the education level and the existence of technical difficulties in carrying out the consultation or understanding the changes in prescription (Spearman = 0.07; Pearson's R = 0.02).

A correlation was found between fear of Sars-CoV-2 infection and acceptance of future teleconsultation. It was also observed an association between patient satisfaction and confidence (Confidence), consultation duration (Time) and the lack of physical contact (Physcontact).

The statistical result suggests that there is a weak linear association between physical dependence in activities of daily living (ADL) of the patient and the impression that the lack of physical contact with the clinician by teleconsultation had on the evolution of the disease. The Pearson's Chi square test was used to examine this association, with a linear association value of 0.047.

V. DISCUSSION

The results indicated a high level of patient satisfaction with the telemedicine. 93% of the patients considered very satisfied/satisfied with the consultation by telephone.

Data analysis revealed no statistically significant difference between patient satisfaction and demographic variables: gender; age; and marital status.

The follow-up time in the unit also does not seem to influence the patients' degree of satisfaction. Only 2.3% (n: 5) of patients consider themselves very unsatisfied with teleconsultation.

86.51% had no technical difficulties in performing the consultation, obtaining the prescription (86.04%) or understanding the changes in the prescription. However, we found a statistically significant relation between the age of the patients and the existence of technical difficulties in carrying out the consultation and obtaining a prescription.

Regarding safety and privacy 86.98% (187) felt safe or totally safe during the consultation process.

Examining discrepancies in patients' perceptions and experiences with the services reveals whether the expectations of users were fulfilled, or whether they were disappointed by the care they received. Generally, expectations are shaped by prior knowledge, beliefs, and experiences. However, in telemedicine a high degree of uncertainty is associated, due to the lack of previous experience and unfamiliarity with the technology. If we add to these factors the uncertainty and fear that surrounded society due to the COVID-19 pandemic, we have exceptional characteristics, which may have altered the patients' perception in some of the dimensions of the consultation.

The population served by our unit also has relevant characteristics: is an elderly; rural; poor; and highly dependent on others for access to health services. The distance between home and hospital can be more than 50 km. Thus, accessibility can become a problem.

On the other hand, we detected a high fear of Sars-Cov-2 infection in this age group, which may have conditioned the results of the satisfaction survey. A question arises: Where patients satisfied with teleconsultation or with the fact that they had less risk of infection by not travelling to the health services?

During the first phase of the COVID-19 pandemic in Portugal, all non-essential services were closed. Thus, most chronically ill patients were left without a follow-up, which may have led to a feeling of abandonment, with possible worsening of physical and psychological symptoms.

The fact that a senior chronic pain physician, although not the attending physician, met the connected patient and worried about his/her health condition, may have conditioned the patient's satisfaction with the consultation. This analysis, although not part of the objectives of this work, may affect the results. This can be deduced from the interpretation of the answer to the question on maintaining teleconsultation in the future: only 29% prefer this scenario. The percentage of patients who do not know how to answer (17%) stands out, belonging to the global uncertainty scenario. A question regarding the "maintenance of teleconsultation in a non-pandemic scenario" would have been pertinent, although not asked in this study.

In terms of future perspective, we can consider the role that teleconsultation will have in the daily practice and if it can be a valid alternative to traditional consultation. Although this was not the object of this study, it is undeniable that it should be considered as an option, depending on the circumstances, both medical (type of consultation) and patient (in elderly patients, with travel difficulties, with stabilized pathology). The use of new digital tools in favor of medicine is important. Thus, according to the patient's possibilities and the hospital's availability, the introduction of video calls, or the use of mobile applications, may improve the quality of the consultation and the outcome of treatments.

Nevertheless, our study is conditioned by the circumstances of the COVID-19 pandemic, so this should be the subject of new studies, rather than the conclusion of the present work.

VI. CONCLUSION

The main purpose in assessing patient satisfaction and experience is to try to understand how the patient was treated, what their perception of the quality of care was, and to identify areas for improvement to achieve better outcomes.

The primary outcome measure of this retrospective, descriptive, cross-sectional cohort survey, is to determine the level of satisfaction of the patients submitted to a phone consultation during the first state of emergency in Portugal, due to COVID-19 pandemic. Based on the results, we conclude that the vast majority are satisfied/very satisfied.

Data analysis revealed no statistically significant difference between patient satisfaction and demographic

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variables (gender, age, marital status). Most patients reported no difficulties in obtaining an appointment, obtaining a prescription, or understanding changes to prescriptions. However, we found a statistically significant relation between the age of the patients and the existence of technical difficulties in carrying out the consultation and obtaining a prescription.

Prospecting future improvements, we also pretend to evaluate telemedicine as an alternative to traditional in-person follow up in a Chronic Pain Unit. In this scenario, 68.4% of our sample prefer teleconsultation instead of traditional consult.

Is telemedicine a reliable alternative to traditional physical consultation in a Chronic Pain Unit in Portugal? It can certainly play a significant role, although always adapted to the needs of the population it serves. Data on patients who preferred to continue with the traditional consultation was not analyzed and should be the subject of further research, developed in a post-pandemic context.

How the fear for COVID-19 affected patients' satisfaction with teleconsultation is a question that could be asked. Although the answer was not the subject of this study, we can conjecture that the impact may have been significant. Whether by maintaining contact with the health services at a time of general confinement in which feelings of abandonment and isolation were frequent, or by avoiding visits to hospital, reducing the risk of viral transmission, it is possible that patient satisfaction with teleconsultation has been overestimated.

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