

## Original Article

# Patients' expectations with regard to the quality of orthopedic medical care

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## Abstract

**Objective:** To assess, through the Surgical and Medical Experience Questionnaire translated and adapted into Portuguese, the opinions and expectations of patients with regard to the treatment protocols and medical training of the foot and ankle orthopedic specialist.

**Methods:** This cross-sectional observational study assessed, through the application of a questionnaire, the opinions and expectations of patients with regard to orthopedic protocols adopted by the foot and ankle specialist.

**Results:** One hundred and thirty patients were selected. Among the participants, 33.8% were male and 66.2% female. The predominant characteristics of a good physician were good outcomes, according to 31% of the participants, followed by quality of care according to 28.6%, and qualities of a good surgeon, chosen by 27.6%. Approximately 89% of patients do not conduct any research on their physician. Correlation was found between the study level and the choice of physician.

**Conclusion:** The demand for physicians with highly specialized skills has increased over the years. It is evident that in the case of better educated patients, a physician's resume is much more important, unlike less educated patients. It is possible to observe that, for patients, there are still multiple barriers and variables.

**Level of Evidence V, Therapeutic Study; Expert Opinion.**

**Keywords:** Problem-based learning; Patient preference; Practice patterns, physicians; Physician-patient relations.

## Introduction

Hippocrates developed and systematized the clinical method in the year 500 BC. Through anamnesis and physical examination, he provided a script for physicians to use as a basis to structure and define their actions. Two thousand years later, in 1895, Roentgen discovered "X-rays", a discovery that aided medical development, and allowed the improvement of specialties. Tomography was invented by Ambrose and Hounsfield in 1971, and, in 1973, magnetic resonance imaging was presented by Lauterbar. Despite all this progress, the medical consultation is still essential for the doctor-

patient relationship, and remains a personal choice to be made by the patient, based on opinions, options available in the market, and economic values<sup>(1-5)</sup>.

The medical consultation, per se, is an assessment method in which the patient transposes not only their confidence in the professional, but also their familiarity with and expectations in regard to their problems. For the physician, confidentiality, responsibility for correctly defining a diagnosis, and for determining treatments and surgeries, are part of the routine and challenges of the profession<sup>(6-12)</sup>. At the same time, for the patient, the simple choice of a professional already raises

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many questions: which physician is the best; is this specialist qualified to practice? Although this is considered a simple question by physicians, patients see it as one of their priorities and requirements<sup>(13-17)</sup>.

But what really influences the patient to choose their physician? In this study, we have attempted to identify the determinations and opinions of patients in regard to this choice; in this case, in relation to an orthopedic foot and ankle surgeon<sup>(18-23)</sup>.

## Methods

This study was approved by the Institutional Review Board and registered on the Plataforma Brazil database under CAAE (Ethics Evaluation Submission Certificate) number: 26223519.7.0000.5225.

This study has a cross-sectional observational design and assessed, through the application of a questionnaire, the opinions and expectations of patients in regards to orthopedic protocols, in relation to the foot and ankle specialist. In other words, the capacity, expected by the patient, that the foot and ankle specialist must have to carry out their daily medical activities and treatment protocols.

All patients who participated in this study were being followed up for their orthopedic comorbidities, specifically involving the foot and ankle, in a tertiary referral hospital. They all agreed to the terms of the Informed Consent Form (ICF) provided prior to the submission of the questionnaire.

The analysis was carried out based on the information collected through the questionnaires, which were fully completed by the patients after the outpatient assessment.

The inclusion criteria used were patients over 18 years of age who had undergone or were undergoing orthopedic foot and ankle treatment in the outpatient clinic of a tertiary referral hospital, and who had signed the ICF, with no maximum age limit.

Patients who did not fully complete the ICF and the questionnaire, or did not agree to participate in the project, were excluded.

The analysis of this study was carried out based on the information collected only through the questionnaires that were fully completed by the patients after the outpatient assessment.

The statistical program R (R Core Team 2019), a free and open source software, was used in all analyses. The descriptive analysis is performed with the presentation of quantities, values, minimums, first quartile, median, second quartile, maximum values, mean, and standard deviation. All of these measures are useful to perceive the characteristic of the information as a whole.

Multiple group comparison, in statistics, has the ANOVA (Analysis of Variance) method as its main tool. This technique allows comparison considering groups, times or combinations, including those with other variables. It is especially useful when comparing at least 3 sets.

The p-value is used as a reference for decision, where p-values <0.05 indicate evidence of significant difference. Nevertheless, this test alone does not reveal the specific location of differences. A post-hoc test is required for this purpose.

In cases where all groups are compared with one another, the Tukey method is the post-hoc test of choice.

The Tukey test presents evidence of the comparison of every two groups. Among the existing groups, the reference adopted to assert the presence of significance is the p-value <0.05.

## Results

Based on the patient selection criteria, a total of 255 would be eligible to take part in this study. Only 176 agreed to participate in the project by signing the ICF. However, only 130 patients completed the questionnaire correctly.

Of the participants, 33.8% were male and 66.2% female. The minimum age of the study is 18 years and the maximum 83, averaging 41.6. 50% of the people in this study are between 30 and 55 years of age (Table 1).

Regarding the level of education, 2.3% of subjects are illiterate, 0.8% have a master's degree, and the others are classified as either incomplete elementary/middle school education or complete higher education. Of the respondents, 32.8% are unemployed and 67.2% are employed.

All 130 patients had undergone surgical treatment on the foot or ankle. Of this total, 33.9% had undergone other surgeries in the past, while 66.1% had not (Table 2).

Regarding the minimum consultation time, the predominant time was 10 minutes, with 40% of respondents choosing this alternative. 32.8% answered 15 minutes and 15.2% identified the most appropriate minimum time for a medical consultation as 30 minutes. For the item "good medical consultation", it was noted that the sub-item "medical history + physical examination + radiographic testing" was the one with the highest percentage (42.7%). It is also noted in relation to this

**Table 1.** Descriptive analysis of Age

	N	Min	1 <sup>st</sup> Quartile	Median	3 <sup>rd</sup> Quartile	Max	Mean	SD
Age	130	18	30	39	55	83	41.63	15.83

**Table 2.** Quantitative analysis and percentage of patients who have undergone other surgeries

	Quantity (%)
Patient has already undergone other surgeries	
No	80 (66.1)
Yes	41 (33.9)

criterion that consultation in combination with a thorough physical examination was chosen by the lowest number of participants, only 6.5% (Table 3).

The predominant characteristic of a good physician was that of good outcomes, chosen by 31% of participants, followed by attentive chosen by 28.6%, and good surgeon by 27.6%. Respondents were able to choose more than one alternative for this criterion (Table 3).

Another characteristic observed in Table 3 is that 89% of patients do not conduct research on their physician. However, of those who do, 89.5% of patients use the Internet or social networks for this purpose.

According to the patients, in the context of the minimum number of surgeries that a foot and ankle specialist must have undertaken in order to properly perform their duties, Achilles tendon injury surgery corresponded to the highest number (mean of 14.31) while ankle prosthesis corresponded to the lowest number with a mean of 12.98.

**Table 3.** Quantitative analysis and percentage of characteristics of satisfaction and research on the quality of the physician

	Quantity (%)
Consider the orthopedic consultation good	
Medical history + physical examinations + radiography	53 (42.7)
Medical history + physical examinations + radiography+ tomography	37 (29.8)
Medical history + physical examinations + radiography+ tomography + magnetic resonance imaging	26 (21)
Medical history + suitable physical examinations	8 (6.5)
Minimum time considered satisfactory	
5 min	11 (8.8)
10 min	50 (40)
15 min	41 (32.8)
30 min	19 (15.2)
1 hour	4 (3.2)
Characteristics of a good physician	
Attentive	41 (28.3)
Good surgeon	40 (27.6)
Good outcomes	45 (31)
Third-party recommendation	4 (2.8)
Punctual	15 (10.3)
Conducted research on the physician	
No	89 (70.1)
Yes	38 (29.9)
Channels used to research physician	
Friends	4 (10.5)
Internet/social media	34 (89.5)

A comparison was made between the average score for each of the questions between the levels of education - in order to have a more relevant sample size, the levels of education were grouped. The ANOVA test was applied first and the p-value of this test is represented in the table below (Table 4). A significant difference was noted for the score relating to the surgeon's sex and resume.

**Table 4.** ANOVA comparison for Level of education in relation to scores awarded to most important factors in identifying an excellent surgeon

	Illiterate or Elementary/Middle School Education	High School	Higher Education or Master's Degree	p-value
Name of college/university/Medical Residency				0.337
Quantity	46	52	30	
Mean	5.28	5.27	6.27	
Deviation	2.9	3.21	3.63	
Age				0.123
Quantity	46	53	29	
Mean	4.11	3.34	2.62	
Deviation	3.44	2.91	2.8	
Hospital Reputation				0.249
Quantity	46	53	30	
Mean	5.65	5.83	6.73	
Deviation	2.77	2.97	2.84	
Years Professionally Active				0.798
Quantity	46	52	30	
Mean	3.89	4.25	3.83	
Deviation	3.06	3.31	3.11	
Sex				<b>0.018</b>
Quantity	46	53	30	
Mean	2.63	1.79	0.83	
Deviation	3.34	2.4	1.86	
Ethnicity				0.177
Quantity	46	53	30	
Mean	1.59	1.64	0.6	
Deviation	3.04	2.7	1.45	
Reputation				0.818
Quantity	45	52	30	
Mean	3.89	4.31	4.2	
Deviation	3.25	3.43	3.18	
Appearance				0.563
Quantity	46	53	30	
Mean	3.85	3.11	3.57	
Deviation	3.67	3.44	3.01	
Recommendation				0.839
Quantity	45	52	30	
Mean	4.96	5.21	5.4	
Deviation	3.44	3.3	2.87	
Resume				<b>0.002</b>
Quantity	46	53	30	
Mean	5.02	6.04	7.67	
Deviation	3.29	3.04	2.64	

The Tukey test was used afterwards to compare the levels of education in relation to the score given for the importance of the surgeon's sex. The greatest difference in this criterion was between "Higher Education or Master's Degree" compared to "Illiterate or Elementary/Middle School Education", with a mean difference of -1.8 ( $p$ -value = 0.014). On average the score of the first was 0.83 and the second 2.63, indicating that the higher the level of education, the lower the perception that sex interferes with the quality of the surgeon (Table 5).

Likewise, we have the comparison of the score awarded for the importance of the Resume in relation to the level of education; here again we observed a significant difference ( $p < 0.001$ ) between the most extreme levels of education. On average, people with a higher level of education assigned 2.64 points more than people with less education to the importance of the resume in being a good surgeon (Table 6).

## Discussion

Patient satisfaction with their medical consultations is determined by characteristics and opinions, which are sometimes subjective. Yet the importance of these factors, however indirect, makes the difference between choosing physician "X" rather than physician "Y". But it is not just about the medical consultation. The patient's estimation of their physician, as well as their perception of the physician's behavior, are

essential factors. What makes a doctor efficient and capable, according to the patients themselves? According to Little et al.<sup>(1)</sup> (2015), who evaluated medical behavior, a medical consultation with an attentive physician who provides information about the patient's condition, produces greater confidence in the physician. Concomitantly, in this particular study, it can be seen that the patient holds greater appreciation for a physician who requests additional tests to the detriment of a good anamnesis and physical examination. Approximately 92% of patients assessed need at least one imaging test to consider their recent consultation satisfactory.

It is a widely established fact that producing good outcomes, as well as being a good surgeon, are qualities both required and sought by patients. Good outcomes are necessary for the patient's discernment when considering a physician to be good or bad. However, it was also noted that, for about 40% of respondents, being attentive was one of the essential characteristics for the medical profession. According to Gulbrandsen et al. (2020)<sup>(2)</sup>, a favorable atmosphere in a medical consultation, in conjunction with attentiveness and an appreciation of patients' complaints, leads to greater adherence to treatment in combination with better outcomes. Therefore, having a healthy doctor-patient relationship is essential. Moreover, the physician's attentiveness towards the patient produces greater adherence and also improves the patient's opinion of the specialist's image.

According to Turrentine et al. (2019)<sup>(3)</sup>, in a patient's evaluation of the physician's gender - male or female - in gynecologists and obstetricians, it is evident that being a male physician, in this case, not only has a negative impact on outpatient volume, but also leads to a lack of faith or confidence in the medical protocol. In the same way, our study shows that, according to the level of education, the physician's gender and resume are important characteristics. In other words, more knowledgeable people with a higher level of education attach more weight to the quality of the physician and their resume. Comparatively, less knowledgeable people with a lower level of education attach more weight to the physician's gender - showing greater confidence in male physicians ( $p < 0.001$ ). Therefore, the difference between patient's levels of education and the factors that determine the choice of physician is noteworthy.

In this study, we also noted that few patients conducted any previous research on their physicians. Only 29.9% claim to have carried out some kind of research. Within this percentage, 89.5% conduct research on the Internet or social networks. These numbers may demonstrate a type of bias in the study. All patients who participated were part of the Brazilian Unified Health System (SUS), and were therefore either referred by the primary care division of health units, or for immediate tertiary care due to trauma related to their conditions. Therefore, no choice of specialist was made, as such.

The demand for medical specialists with super-specialties has increased over the years. For patients, simple attentiveness during a medical consultation already generates satisfaction and shows appreciation for the medical image. In addition to

**Table 5.** Tukey comparison for score assigned to importance of Sex in being an excellent surgeon in relation to the level of education of the respondent

	Mean (A)	Mean (B)	diff	p-value
High School-Illiterate or Elementary/Middle School Education	1.79	2.63	-0.84	0.269
Higher Education or Master's Degree-Illiterate or Elementary/Middle School Education	0.83	2.63	-1.8	<b>0.014</b>
Higher Education or Master/s Degree-High School	0.83	1.79	-0.96	0.263

**Table 6.** Tukey comparison for score assigned to importance of the Resume in being an excellent surgeon in relation to the level of education of the respondent

	Mean (A)	Mean (B)	diff	p-value
High School-Illiterate or Elementary/Middle School Education	6.04	5.02	1.02	0.227
Higher Education or Master's Degree-Illiterate or Elementary/Middle School Education	7.67	5.02	2.64	<b>&lt;0.001</b>
Higher Education or Master's Degree-High School High School	7.67	6.04	1.63	0.054

assessment and knowledge, a patient's interest in a physician is based on their own opinions and values that allow such a choice. Because the study was carried out in a tertiary referral hospital that caters exclusively to patients from the public health system, the interviewees did not appear to be sufficiently interested in their physicians to undertake research. However, this particular study demonstrated that consultations completed within 10 minutes on average, in combination with

a request for at least one imaging test, highlight a particular specialist. Nonetheless, for this choice, it can be seen that more educated patients assign more weight to a physician's medical resume, unlike patients with a lower level of education, where the specialist's gender is a major distinguishing factor in this choice. Therefore, it is possible to observe that patients still face multiple barriers and variables, whether social or intellectual, in determining the choice of their physician.

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