Satisfaction Survey of Patients Using the Brazilian Version of Dental Patient Feedback on Consultation Questionnaire

Pesquisa de Satisfação de Pacientes Utilizando a Versão Brasileira do Questionário Dental Patient Feedback on Consultation skills

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Abstract

The aim of this study was to measure the satisfaction of patients treated in a dental hospital using a validated questionnaire on patient-dentist communication and investigate factors associated with satisfaction. Patients in the dental clinic answered 2 questionnaires: *Dental Patient Feedback on Consultation* (DPFC) and another regarding their oral health perceptions using a visual analog scale (VAS) and sociodemographic backgrounds. The correlation between patient's satisfaction and other numerical variables was determined using Spearman's test. The Kruskal-Wallis and Mann-Whitney tests were used to compare the patient's satisfaction scores and the categories of the independent variables (p≤0.05). The median DPFC score was 2.9. All participants were very satisfied considering the active dentist listening (Q3) and the dental treatment advices (Q16). The lowest score was observed about family habits and medical history in oral health (Q9:2.0). With respect to their oral health perceptions, the majority of the participants demonstrated satisfaction with their chewing, smile and dental aesthetics. Being younger than 40 years influenced the satisfaction with oral health satisfaction when the VAS score was analyzed. The skin colour (p=0.001 and p=0.005) and the marital status (p=0.001 and p=0.006) of the participants also demonstrated a statistically positive signiticant correlation between DPFC and VAS scores, respectively. There was a high level of patient's satisfaction with the ability of the dentist to communicate in the dental hospital analyzed. Age, color skin, and the marital status of patients interfered in the satisfaction about patient-dentist communication and their oral health perception.

Keywords: Communication. Hospitals. Patient Satisfaction. Dentistry.

Resumo

O objetivo deste estudo foi mensurar a safisfação de pacientes tratados em um hospital utilizando um questionário validado baseado na comunicação dentista-paciente e investigar os fatores associados a esta satisfação. Os pacientes da clínica responderam 2 questionários: Dental Patient Feedback on Consultation (DPFC) e outro a respeito das percepções relacionadas a saúde utilizando uma Escala Visual Analógica (EVA) e dados sociodemográficos. A correlação entre a satisfação dos pacientes e outras variáveis numéricas foi determinada através do teste de Spearman. Os testes de Kruskal-Wallis e Mann-Whitney foram usados para os escores de satisfação dos pacientes e as variáveis categóricas independents (p≤0,05). O escore mediano do DPFC foi de 2,9. Todos os participantes estavam muito satisfeitos considerando a escuta ativa do dentista (Q3) e as recomendações sobre o tratamento dentário (Q16). O escore mais baixo foi relacionado aos hábitos familiares e história médica relacionada a saúde bucal (Q9:2.0). Em relação as percepções a saúde bucal, a maioria dos participantes demonstrou satisfação com a mastigação, sorriso e estética dental. Ter menos de 40 anos influenciou a satisfação com a saúde bucal quando a escala EVA foi utilizada. A cor da pele (p=0,001 e p=0,005) e a relação conjugal (p=0,001 e p=0,006) também demonstraram uma significância estatística positiva entre o DPFC e a escala EVA, respectivamente. Foi observado um alto nível de satisfação dos pacientes em relação a habilidade de comunicação do dentista no hospital analisado. Idade, cor da pele e a relação conjugal dos pacientes interferiu na satisfação relacionada a comunicação do dentista-paciente e a percepção de saúde bucal.

Palavras-chave: *Comunicação. Hospitais. Satisfação do Paciente. Odontologia..*

1 Introduction

Patient's satisfaction is a key performance index of the quality health care service[1]. Recommendations to increase patient's satisfaction in medical assistance include the acquisition of communication skills, maintaining hygiene standards and providing quality services[2].

Effective communication is of the utmost importance when providing healthcare. The quality of service would be affected without it and healthcare costs and negative patient outcomes would increase[3]. In a dental office, good communication has been found to result in improved patient's cooperation and enhanced treatment outcomes; reduced likelihood of dental anxiety; and improved self-care skills, motivation, and treatment plan adherence – all of which have a positive lifelong impact on patient's oral health[4]. It is important to emphasize that communication skills can be improved with effective training. In a previous observational study in a large health system, experiential, relationship-centered communication skills training effectively improved outpatient scores and one domain of inpatient scores[5].

Patient's satisfaction is an effective indicator for

measuring the success of the relationship between healthcare professionals and patients. In medical literature some studies were observed to assess patient's satisfaction with healthcare services using questionnaires[6-8]. Considering the communication skills, the questionnaire Patient Feedback on Consultation skills (PFC) showed a comprehensive measure with good psychometric properties[9] and was adapted to use in the dental setting. In 2015, the Dental Patient Feedback of Consultation (DPFC) questionnaire demonstrated acceptable validity and reliability[10]. Mota et al.[11], translated and adapted the DPFC questionnaire into the Portuguese language considering the Brazilian cultural context. The Brazilian version demonstrated equivalence with the meanings of the original instrument and was well accepted and understood by the participants[11].

To date, little is known regarding associated factors of dental patient's satisfaction and the studies were not able to show all the potential characteristics which may have had effects on satisfaction. Considering that good communication is a factor that influences patient's satisfaction and could be trained, especially in the Covid 19 pandemic scenario, this study aimed to measure the satisfaction of patients treated in a dental hospital using a validated questionnaire on patient-dentist communication and to investigate factors associated with satisfaction.

2 Material and Methods

2.1 Study design and participants

This cross-sectional study received approval from the local human research ethics committee (certificate number: 4.455.171). After receiving information regarding the study objectives, the patients agreed to participate by signing a statement of informed consent. The sample size was calculated considering the total number of participants treated in the dental clinic in the last three years assuming alpha=5%, beta=20% and d=0.5. Eligible participants were recruited from January 2021 to July 2021 among patients of the Dental Clinic at the Military Hospital, Rio de Janeiro, Brazil. Healthy patients (except emergency cases) aged 18 years or more were admitted in the study. Patients with mental illness were excluded.

The participants were asked to complete the DPFC questionnaire, their oral health perceptions and sociodemographic backgrounds in the waiting area. Patients' satisfaction about the dentists' communication was assessed using a previously described questionnaire, using a Likert-type scale, where 3 = completely satisfied, 2=mostly satisfied, 1= a little satisfied and 0 = not satisfied. Additionally, sociodemographic data such as gender, actual age, skin color, marital status, education level, personal monthly income, dental treatment status were also reported by the participating patients. Patients' perceptions about their actual oral health including chewing, smile and dental esthetic were assessed

using a script with 4 questions using a visual analog scale (VAS) from 0 to 10, 0 representing the worst and 10 the best possible outcome. Participants were assured of confidentiality and that their participation or responses would not affect their consultation outcomes, present or future services at this dental hospital.

2.2 Statistical analysis

Statistical analysis was performed using SPSS Statistics V20 (IBM, Armonk, NY). Descriptive statistics (means and standard deviation) were used to analyze and assess the results. After verification of the non-normal distribution, nonparametric tests were used. Pearson Correlation analysis was used to measure the correlation among the variables. The correlation between the patients' satisfaction and other numerical variables was determined using the Spearman's correlation test. The Kruskal-Wallis and Mann-Whitney tests were used to compare the patient's satisfaction scores and the categories of the independent variables (categorical variables). The significance level was set to 5% for all tests.

3 Results and Discussion

The total sample size was 368 participants. 54.7% were female (n = 201), and 45.3% were male (n = 167). They ranged in age from 18 to 92 years old; the mean age was 46.0 years (SD = 17.9). Table 1 shows the socio-demographic characteristics of the participants.

Table 1 - Characteristics of the studied participants (N=368)

	N (%)
Gender	
Female	201 (54.6)
Male	167 (45.4)
Age (years)	
≥40	150 (40.8)
<40	218 (59.2)
Skin color	
white	191 (51.9)
Non-white	177 (48.1)
Marital status	
with partner	270 (73.4)
without partner	98 (26.6)
Education level	
≥8 years	23 (6.3)
9-13years	149 (40.5)
Higher education	196 (53.3)
Personal Monthly Income* (1SM= R$1212.00)	
1-6 SM	172 (46.7)
≥ 7 SM	196 (53.26)
Dental treatment status	
Starting	276 (75.0)
In process	92 (25.0)

Source: Research data.

The median DPFC score was 2.9 (±0.2; min- max:2.3-3.0). All the participants were very satisfied considering the active dentist listening (Q3) and the dental treatment advices (Q16). A lower score was observed in the discussion family habits and medical history in oral health (Q9:2.0). Table 2 displays the frequences and the mean of DPFC questionnaire. Regarding their oral health perceptions analysed using the VAS score, as shown in Table 3, most of the participants demonstrated satisfaction with their chewing, smile, and dental aesthetics.

Table 2 - Absolut frequencies, relative frequencies and DPFC mean and median scores (N=368)

Dental Patient Feedback on Consultation skills (DPFC) items	Not at all	A little	Mostly	Completely	Mean	Median
1-To what extent was your main problem(s) discussed today?	3(0.8)	12(3.3)	42(11.4)	311(84.5)	2.8	3.0
2-How satisfied were you with the discussion of your problem?	1(0.3)	5(1.4)	24(6.5)	338(91.8)	2.9	3.0
3-To what extent did the dentist listen to what you had to say?	1(0.3)	3(0.8)	9(2.4)	355(96.5)	2.9	3.0
4-To what extent did the dentist explain this problem to you?	0(0.0)	3(0.8)	22(6.0)	343(93.2)	2.9	3.0
5-To what extent did you and the dentist discuss your respective roles?	1(0.3)	6(1.6)	37(10.1)	324(88.0)	2.9	3.0
6-To what extent did the dentist explain treatment?	0(0.0)	5(1.4)	19(5.1)	344(93.5)	2.9	3.0
7-To what extent did the dentist explore how manageable this treatment would be for you?	1(0.3)	3(0.8)	26(7.1)	338(91.8)	2.9	3.0
8-How well do you think your dentist understood you today?	0(0.0)	2(0.5)	17(4.6)	349(94.8)	2.9	3.0
9-To what extent did the dentist discuss personal or family issues that might affect your oral health? (e.g. Medical history/ Family habits)	67(18.2)	34(9.2)	86(23.4)	181(49.2)	2.0	2.0
10-Was there an atmosphere of trust during the consultation?	0(0.0)	3(0,8)	14(3.8)	351(95.4)	2.9	3.0
11-To what extent did the dentist show his/her concern?	2(0.5)	2(0.5)	7(1.9)	357(97.0)	2.9	3.0
12-To what extent did the dentist invite you to ask all the questions you wanted to ask?	1(0.3)	3(0.8)	13(3.5)	351(95.4)	2.9	3.0
13-To what extent did the dentist give you clear information and explanation?	0(0.0)	3(0.8)	15(4.1)	350(95.1)	2.9	3.0
14-To what extent did the dentist act in a structured way?	0(0.0)	3(0.8)	10(2.7)	355(96.5)	3.0	3.0
15- To what extent did the dentist give you new or better insight into your problem?	0(0.0)	3(0.8)	16(4.3)	349(94.8)	2.9	2.9
16- To what extent did the dentist give you clear treatment advice?	1(0.3)	3(0.8)	11(2.9)	354(96.2)	2.9	2.9

Source: Research data.

Table 3 - Visual analog scale (VAS) (minimum:0; maximun:10) for satisfaction analysis considering the oral health (N=368)

Q1 – Are you satisfied with your teeth?	
Mean (SD)	7.2 (2.5)
Median	8
Q2 – Are you satisfied with your chewing?	
Mean (SD)	7.5 (2.6)
Median	8
Q3 – Are you satisfied with your smile aesthetics?	
Mean (SD)	7.0 (2.8)
Median	8
Q4 – Are you satisfied with your oral health?	
Mean (SD)	7.6 (2.4)
Median	8

SD: Standard deviation.
Source: Research data.

Being younger than 40 years old influenced the satisfaction with oral health ($p \leq 0.001$) when the VAS score was analysed. The skin color (p=0.001 and p=0.005) and the marital status (p=0.001 and p=0.006) of the participants (Table 4) also demonstrated a statistically positive significant correlation between DPFC and VAS scores, respectively. Additionally, a positive correlation was observed between the DPFC questionnaire and the VAS score was observed (Pearson's r=0.332; p=0.001) (data not shown).

Table 4 - Association among DPFC scores, VAS scores and socio-demographic characteristics of the participants (N=368)

	N (%)	Mean DPFC	Mean VAS
Itens		p-value	p-value
Age (years)			
≥40	150 (40.8)	0.08[b]	**<0.001[b]**
<40	218 (59.2)		
Gender			
Female	201 (54.6)	0.36[b]	0.97[b]
Male	167 (45.4)		
Skin color			
White	191 (51.9)		
Non-white	177(48.1)	**0.001[b]**	**0.005[b]**
Marital status			
With partner	270(73.4)		
Without partner	98 (26.6)	**0.001[b]**	**0.006[b]**
Education level			
≥8 years	23 (6.3)		
9-13years	149 (40.5)	0.148[c]	0.208[c]
Higher education	196 (53.3)		

	N (%)	Mean DPFC	Mean VAS
Dental treatment status			
Starting	276 (75.0)	**0.545** [b]	**0.705** [b]
In process	92 (25.0)		

[b]Mann-Whitney test; [c]Kruskal-Wallis test.
Source: Research data.

The results of our study based on the DPFC questionnaire showed a high level of patient's satisfaction with the dentists' ability to communicate. Our findings revealed a significant correlation between the DPFC and the VAS score used, and according to this result, we observed that the majority of participants demonstrated a positive perception of oral health perception considering their chewing, smile, and dental aesthetics. We observed that the dentist's communication skills seem to strongly influence patient's satisfaction.

We investigated the effects of dentist's communication in patient's satisfaction and the factors that could influence this satisfaction. Only in one question (Q9) we observed that the mean DPFC scores was 2.0, a lower score when compared with the other questions. This question reported about their personal or family issues that might affect the oral health. Our results indicated that dentists are not aware that the general and emotional health could influence oral health. According to the Cheng et al.[10], Question 9 proved to be a difficult item both from statistical analysis and feedback from both dental and patient panels so it was modified by adding specific examples of personal and family issues (i.e. medical history and family habits). In a previous study[1] that the DPFC was used, the clinicians were perceived to be more patient-centered and empathetic if a greater proportion of their conversation showed positive reinforcement and reassurance by using related key words.

According to our findings, the patients' characteristics, such as color skin and the marital status interfered in the satisfaction about dentist communication and their oral health perception. Our study was not intended to analyze the dentists' characteristics that may influence in patient's satisfaction. A recent study[12] analyzed the patient's satisfaction in orthopedic surgery and the authors revealed that nonmodifiable physician characteristics were markedly associated with lower patient's satisfaction scores in the overall satisfaction, communication, and empathy domains: gender, Asian ethnicity and being unmarried.

In our sample, being younger than 40 years interfered positively in oral health perception. It is well known that over the years, the oral health condition, as well as general health, tends to worsen and some pathologies like oral cancer, periodontal disease and teeth loss are more common in older people. Our results are in agreement with a previous study[13] that investigated the factors associated with patient's satisfaction in a health center. According to the authors[13], age, gender, education level, waiting time, doctors' communication

behavior and patient's trust level were significantly associated with patient's satisfaction independently. We also observed that the participants' marital status also demonstrated a statistically positive signitcant correlation between DPFC and VAS scores. Probably patients who live with a partner are likely to be more satisfied in many life situations, including oral health, when compared with lonely individuals.

Although our results presented here were positive about profissional communication in a dental hospital, we believed that dentists during their training in university did not receive information about Soft Skill competencies. On the other hand, a study[14] proposed that attainment of clinical communication skills and professionalism competencies should be required for undergraduate students of Medicine. According to the authors, the foundation for leadership and interpersonal abilities should be trained at an undergraduate level and, furthermore, mastered by immersion in the future workplace and medical responsibilities in residency.[14]

Considering the actual pandemic era, a recent study[15] revealed the logistical, physiological, social and economic problems associated with the wearing of masks by the professionals in the UK hospitals. The ability of healthcare staff to successfully communicate with patients and with colleagues is risky, which may adversely affect the efficiency, effectiveness, equitability and, most notably, safety of therapeutic intervention. It is important to emphasize that our research occurred during the worst pandemic period, and many dentists and patients were anxious and afraid of contaminating themselves and their family. Such situation may have negatively influenced the relationship between patient and dentist and could be considered a limitation to our results.

Another limitation of this study was related to the fact that the study population was provided from a single dental hospital. However, to the best of our knowledge, this is the first investigation of how communication skills relate to patient's satisfaction scores in dental treatment using the DPFC in Brazil. Future studies are recommended to investigate the role of dentist communication in providing the patient's satisfaction in different areas in dentistry, as well as confirm the findings in a larger sample and across institutions. In addition, we will analyze whether effective communication could improve the patient's adherence and treatment outcomes.

4 Conclusion

There was a high level of patient's satisfaction with dentists hability to communicate in the military dental hospital environment. Age, skin color, and the marital status of patients interfered in the satisfaction about dentist communication and their oral health perception.

Acknowledgements

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