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Relational Variables, with Patient Satisfaction of Dental Services. Case of a Dental Clinic Agadir Morocco

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Abstract— This study aimed to relate socio-demographic variables, anxiety levels and oral health beliefs to the level of patient satisfaction with oral health. A sample of 353 patients was selected by systematic sampling. Dissatisfied patients are characterized by the use of a total prosthesis, by considering that oral diseases can be serious and expensive treatments and by recognizing that dental diseases affect self-esteem and that they are afraid of go to the dentist. Dissatisfaction was related to sociodemographic characteristics, severe anxiety, general and dental health status, susceptibility and perceived benefits, self-efficacy, fear of going to the dentist, easy access to a dentist and the need to visit the dentist for a check-up.

Index Terms— Patient satisfaction, Dental care, Quality of health care, Dentist-Patient

INTRODUCTION

Patient satisfaction with dental care is considered one of the desirable values of service delivery and should be one of the goals of its providers (1). Donabedian included it as an item that marks the level of health itself. In evaluating the delivery of the oral care service, satisfaction should cover the context, process and outcome of the patient's experience with the service.

Oral health assessments are usually based on the definitions and criteria of health established by professionals, while patients' opinions and their assessments of when their expectations are met are usually overlooked. Patient satisfaction is associated with characteristics of health service delivery and individual characteristics. It has been shown that there are links between satisfaction with previous care, health-related behaviors, complaints related to treatment, health status and health expenditure.

Despite the many surveys that explore patient satisfaction with health care, satisfaction is a concept that is not sufficiently defined at the theoretical level, and it has been difficult to develop a comprehensive conceptual model. However, the concept essentially includes an individual assessment of the health care experience against a standard individual concept. This process includes two activities, a cognitive assessment of the patient and an assessment of the structure, process and cost of the service.

It is important for the profession to promote high standards of performance among dentists. Professional self-regulation based on public responsibility involving the delivery of a health service may be the best way to ensure patient protection against dental negligence, which occurs in a minority of cases, at a time when the state and patients actively participate in monitoring.

Currently, there is greater awareness of the rights of the health user; therefore, dissatisfaction with the service takes on greater importance. The most common reasons given for complaining to the dental service are poor quality of treatment, errors, attitudes, service characteristics of the oral health team and excessive cost of treatment.

Dissatisfaction and complaints about dental service can result in the patient changing dentists, a change that can have ramifications in terms of how the dentist is perceived by family and friends. Additionally, given the medico-legal environment that strongly surrounds dentistry in all countries, patient dissatisfaction could lead to lengthy and costly legal proceedings.

Patient satisfaction in terms of health is therefore a complex phenomenon that contributes both to the results obtained in individual and collective health as well as to the success of the measures applied in the field. This satisfaction influences patient acceptance, use of dental services and anxiety. Patient satisfaction is also an important component of encouraging self-care and is an indicator of the quality of

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health service delivery.

As healthcare companies consider customer focus in service delivery planning, patient satisfaction studies become a fundamental and essential tool. To correctly interpret the results of satisfaction surveys, it is necessary to understand how patient characteristics influence responses.

Many of these characteristics are immutable or difficult for health service providers to modify. However, other patient-related aspects of dental care may come into play, such as the nature of the patient's interaction with the professional and the organizational structure of service delivery. Improvement in dental service delivery might be limited by the extent to which beliefs and level of anxiety influence patient satisfaction.

All these factors mentioned can be decisive in the satisfaction results obtained. This study will examine the relationship between socio-demographic variables, anxiety levels and oral health beliefs with patient satisfaction within the dental service.

METHODOLOGY

This descriptive project carried out a systematic sampling (K=4) with a level of reliability of 95% and a sampling error of 5%. To estimate the sample size, available information from the last three years on the number of people treated in the dental service of the health service provider entity where the study was carried out was used. Considering that the entity's average number of patients was 1,500 per semester, the total population was 9,000 patients. The final sample was 353 patients, with an adjustment factor of 10%.

The characterization of the sociodemographic, belief and satisfaction variables was carried out using an instrument with the questionnaires validated in the National Study of Patient Satisfaction, carried out by the National Institute of Dental Research, the World Health Organization Health (WHO), as described in the questionnaire to characterize the determinants of patient satisfaction

The objectives of the project were explained and it was guaranteed that the name of the entity would not appear in any of the reports. Each participant was given information about the objectives of the study, its scope and how the information would be processed, and it was guaranteed that their identity would be kept secret, as the questionnaire did not include name registration.

The instrument was given by the research group in the waiting room of the establishment, to each of the patients, after they had received care. Doubts were clarified verbally, if necessary, and once the instrument was completed, a review was carried out to verify that all questions had been answered. The fieldwork was carried out during the third semester of 2022.

The statistical analysis plan was carried out with the Statistical Package for the Social Sciences (SPSS) version 11 program, and included: 1) the description of the relative frequency of each of the sociodemographic, satisfaction and personal characteristics variables, 2) a bivariate analysis of socio-demographic variables with the degree of satisfaction and personal variables. The results were expressed in terms of percentage and ratios.

Variables	
socio-demographic characteristics	Age Gender (1=male, 2=female) levelofeducation Socioeconomiccategory General stateofhealth 1=satisfactory 2=unsatisfactory Dental status: 1: withoutteeth, 0=withteeth.
Oral health beliefs	Possibilityofpresenting oral diseases (high - low): (perceivedsusceptibility). Oral diseases can be serious (perceivedseverity). Theconsequencesofan oral disease can be fatal: (perceivedseriousness). Learnabout oral healthpreventiontechniques (perceivedbenefits). Restoring oral healthisexpensive (perceivedbarriers). Lossof oral health can affectself-esteem (perceivedbarrier). Knowshowto control bacterial plaque: (self-efficacy). Thedentistiseffective in taking care ofyour oral health: (actionsignals). Oral healthisveryimportant. He isnotafraidtogotothedentist. He'snottoobusytogotothedentist. Itiseasyforyoutoaccessthedentist..
Need to go to the dentist	Mouthpain (Yes = 1, No = 0). Dental symptoms (Yes = 1, No = 0). Control (Yes = 1, No = 0).
Health behavior	Smoke (Yes = 1, No = 0) Consume sugaryfoodsbetweenmeals (Yes = 1, No = 0)

Questionnaire to determine patient satisfaction

During your last dental service visit, were you satisfied or dissatisfied with: (mark with an “X”).

marquez d'un « X »).

Questions	Satisfied	Dissatisfied
1. Get the quote when you need it.		
2. The time it takes to get to the care site.		
3. The part of town where the care site is located.		

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4. The way the receptionist who greeted you made you feel.		
5. How he was received by the office assistant or hygienist.		
6. How you were received by the dentist.		
7. The information you received about what was wrong with your teeth.		
8. The information you were given about the treatment you were about to receive.		
9. How modern is the dental equipment used in your care?		
10. The time you waited to be seen by the dentist		
11. The cleanliness and organization of the office where you were treated.		
12. The cost of your last appointment.		

Source: produced by us

The multivariate analysis was applied using the "CORMO" procedure of the statistical package SPAD-N. A multiple correspondence analysis was carried out to understand the results obtained as a group, to establish correlation coefficients between the variables, to determine whether there were groups of individuals, to verify their consistency, to establish a typology which would serve as a synthesis and find hypotheses that should be tested.

The multiple correspondence analysis was carried out first by variables, that is to say by means of a histogram of eigenvalues, then by hierarchical classification.

For a better representation of the results of the multivariate analysis, the graph of the histogram of the level indices has been included.

RESULTS

The satisfaction survey was answered by 353 patients of a dental clinic, with an average age of 39 years and a gap of 13 years. 56.7% are female and 49% have completed high school. Regarding the socio-economic level, it was found that 73.4% reside in popular areas of the city.

3.1. Oral health beliefs

Self-efficacy, understood as knowing how to control plaque, was identified in 84% of patients. 36% declared a susceptibility to the onset of oral diseases. 87% perceived oral diseases as serious and 54% considered that the consequences of an oral disease could be fatal.

	I would think	I do not care	A little uncomfortable	Withfear I could to be mean	veryscared
How would you feel if you had to go to the dentist tomorrow?					
	Relaxed	A little uncomfortable	Tense (anxiety is not noticeable, but it has it)	Anxious (he isunabletoread, listen to music orspeak. He isfocusedonthedentistappointment)	Extremelyanxious (sweatypalms, can'tsitstill, upsetstomach)
How do you feel in the waiting room when your turn comes?					
How do you feel once you've settled into the dental chair as the dentist is ready to begin?					
How do you feel while waiting for the dentist to start the teeth cleaning or stone removal procedure?					

Perceived barriers were: Restoring oral health is expensive for 75%, and loss of health can affect self-esteem for 94%. Meanwhile, the perceived benefits of knowing oral health prevention techniques were identified at 80%.

Among the action signals, the following were identified: the dentist is good at taking care of your oral health (84%), oral health is very important (82%), you are not afraid to go to the dentist (60%), you are not too busy to go to the dentist (41%), and it is easy to get to the dentist (29%).

The health behaviors observed were smoking, for 26%, and consumption of sugary foods, for 65%.

At the time of the interview, the highest percentage of

patients (61%) indicated that they had dental care as the main reason for their attendance. 30% had some level of anxiety. Regarding satisfaction, more than 83% of patients are satisfied with all the aspects reported in the questionnaire.

Dissatisfied patients were characterized by:

• 17.6% consider their state of health unsatisfactory. Of these, 82.2% use total dentures, 42% believe that the possibility of presenting a disease is high, 86.5% consider that oral diseases can be serious and 54% believe that these diseases can cause the death.

• 20.3% do not know how to prevent oral diseases, 82% consider oral treatments to be expensive, 92% believe that dental diseases affect their self-esteem, 20% maintain that the dentist does not help them not to keep their mouth healthy, and 1.4% say that the health of their teeth and mouth is less important than that of the rest of their body. 46.6% are afraid to go to the dentist and 61.5% have stopped going there for professional reasons. 37.2% consider it easy to go to the dentist.

• 11.5% come to the consultation for present pain, the same percentage for control, 15.5% for discomfort without pain and 61.5% are in treatment. 28% smoke and 66% consume sugary foods between meals.

3.2. Multivariate analysis

Using the level index histogram, two groups were identified, with 121 and 232 patients respectively, and with similar characteristics.

Group 1. It is characterized by the fact that patients are afraid to go to the dentist; they feel uncomfortable waiting for him to take care of them; it is not easy to go to the dentist; the anxiety questionnaire results in severe anxiety; they believe that the possibility of having oral disease is high; they don't know how to have good oral hygiene; they consider that the state of health is not satisfactory; they do not know how to prevent oral diseases; wearing full dentures; They go to the dentist for a problem. These patients feel dissatisfied with: the cost of the last appointment; the way the receptionist made them feel; the time to reach the care centre; the time they waited to be served; the site where the service center is located; the information given to them about the processing; Office cleaning and organization.

Group 2. Characterized by the fact that the patients feel relaxed while waiting for the dentist to see them, and once installed in the dental chair they show no anxiety; they are not afraid to go to the dentist; they wouldn't care if they had to; the latter is easy to do; the possibility of presenting oral diseases is low. These patients come to the consultation because they are undergoing treatment; they consider that the dentist helps them to keep their mouth healthy; they know how to have good oral hygiene; they know how to prevent oral diseases; and they consider that these affect their self-esteem. Likewise, they are satisfied with the way the dentist received them; office cleaning and organization; the treatment ; the information given to them about the processing; the site where the service center is located; the time they waited to be served; the time it took to get to the care site; the way the receptionist made them feel; and the cost of the last appointment.

DISCUSSION

In this study, the majority of people (83%) said they were satisfied with dental care, which is similar to what was reported by Bedi et al in a survey of a sample of 3739 adults, and by the British Independent Dental Association, which demonstrated that nine out of ten people are satisfied with the dental treatment they have received. The low percentage of dissatisfied people in these surveys confirms the results of other studies, where the number of dentists who have to respond to specific complaints from their patients is very low. The national studies also coincide with the results of this research. This is the case carried out by Hincapié et al., in 2004, where 95.6% of the population considered was entirely satisfied with their oral care.

It is important to consider that levels of satisfaction with a dental service do not indicate that people have had a good experience with the service. The expression of satisfaction could simply reflect attitudes such as "they do the best they can" or "my satisfaction is not really their work". These intermediate factors are difficult to measure and consider and have not been taken into account in this work.

Goedhart et al and Lathi et al state that for a significant number of patients, the ultimate goal of treatment is “cure”. The rest of the process steps that contribute to the outcome seem to be forgotten. The patient prefers to see the final result to express his satisfaction, often forgetting the efforts related to the clinical and radiological oral diagnosis, and the entire health team involved in the process.

It has been argued that the lack of variability in responses when patient satisfaction is measured makes responses expressing dissatisfaction more relevant. Williams cautioned researchers about the importance of paying close attention to expressions of dissatisfaction. A single expression of a patient about something implies that a serious problem is occurring.

In the case of dental procedures, these dissatisfactions could represent negative subjective patient experiences such as pain or discomfort, and a perception of a negative interpersonal relationship with the professional on the oral health team. In this study, according to the multivariate analysis, the dissatisfactions focused on: the cost of the last appointment, the feeling of the receptionist, the time to get to the service center, the waiting time to be taken care of , the location of the health center, the information given to them about the treatment, the cleanliness and the organization of the office.

In this survey, four out of five dissatisfied patients have a total prosthesis; results from satisfaction surveys have shown that patient dissatisfaction is linked to previous negative experiences, particularly during childhood and adolescence. Liddell and Locker further support the idea that

dissatisfaction is the result of having had numerous rehabilitative dental treatments.

In this article, the fact of being edentulous1 would imply that at some point in his life the patient underwent extractions and had to deal with feelings related to "frustration due to the loss of an organ of the body". Some studies claim that high levels of dissatisfaction may be linked to total toothache. This reason justifies the need to apply different satisfaction questionnaires for dentate and edentulous patients.

In this study, it was observed that only 20% of patients with some degree of dissatisfaction consider that the dentist helps them maintain their oral health. Analyzing this result from the perspective of the dentist, one might think that an indicator of a negative interpersonal relationship between the patient and the oral care provider has an influence on dissatisfaction, which coincides with other scientific literature studies.

The results of this research coincide with those found by Lahti et al, where satisfaction and dissatisfaction did not show a possible relationship with a variable concerning dentist-patient communication, which would indicate that it is multifactorial and that several aspects cannot be interpreted only by the information provided by a questionnaire.

However, it has been shown that an adequate social relationship and good verbal communication between the dentist and the patient allow the former to more quickly determine problems and solutions, and the latter, greater commitment to treatment. These interpersonal relationships are a priority in establishing patient satisfaction with the dental service.

Dental anxiety affects a significant proportion of people of all ages, from different social classes, and frequently results in impaired oral health, due to the tendency to avoid dental care, to develop dental treatment without continuity, and poor cooperation in intervention procedures. Severe dental anxiety is based on several factors: the influence of the family and social environment, exaggerated fears, pain and traumatic experiences.

Being old, being female and having a low level of education are risk factors for fear of dental care. Dental anxiety is not a reflection of mental health, but may be related to attitudes.

A Swiss study showed that the most stressed patients were those who liked the treatments the least and were the most critical of the results. In this study, 36.4% of patients who reported some degree of dissatisfaction had some level of anxiety about dental care. It has been shown that anxious patients are more dissatisfied with the oral health care they receive. A study conducted among American psychiatrists identified analysis factors to highlight various aspects associated with the dissatisfaction of dental patients: patients with many personal problems, with physical symptoms of stress, suspicious patients and patients with problems individuals (alcohol, drugs, etc.) . , Chronic Pain).

In this study, the multivariate analysis showed that the patients were divided into two well-differentiated groups. This would seem to confirm – as in other surveys – that patient satisfaction with dental care is a multidimensional concept, which should be measured with an instrument that considers satisfaction with care, beliefs personal and anxiety about dental care, and that these particularities could guide the fundamental differences between the satisfied and dissatisfied groups, even if the scores of the questionnaires did not show differences between them.

It is important to consider that the results based on the relationship of the factors considered by means of a multivariate analysis, as performed in this study, should not be overinterpreted for decision making. This relationship – as other researchers claim – would really serve to propose hypotheses that need to be tested.

Finally, patient satisfaction is currently considered an important element of the quality of health service delivery, and it is recognized that health care can only be of high quality if the patient is satisfied. Satisfaction is the consequence of the evaluation of the team providing the service, and therefore understanding how a patient evaluates the health service is key to analyzing the meaning of satisfaction. It has been shown in previous studies that satisfaction with dental service must be explained by considering the patient's perception of various generic factors such as technical competence, interpersonal factors, costs, and ease of access to the service. According to this concept, patient satisfaction is the result of the balance between positive and negative perceptions. However, when considering research in other areas, it is recognized that this view is insufficient, and that evaluation is a complex process. Any attempt to explain and understand this process must consider the role played by other factors such as patient expectations and preconceptions about health care. These expectations are based on their personal experiences, environment, social characteristics, and personality (45,24). In this complexity, additional studies on the subject must be carried out.

CONCLUSIONS

Considering the multivariate analysis, we can conclude the following:

1. The socio-demographic characteristics linked to dissatisfaction are: the general state of health and the state of dental health.

2. Oral health beliefs related to dissatisfaction are: perceived susceptibility, perceived benefit, and self-efficacy; and among the action signals are: fear of going to the dentist, ease of access to the dentist; must go to the dentist for dental symptoms.

3. The degree of anxiety related to dissatisfaction is severe.

RECOMMENDATION

Dissatisfaction with dental services should be analyzed in terms of oral health beliefs and anxiety, therefore, indicators

of these two characteristics should be included in the measurement instruments.

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