

# Patient Satisfaction as a Predicative Factor of Treatment Success

Elvedin Osmanovic<sup>1, \*</sup>, Almir Jagodic<sup>2</sup>, Irma Ikanovic<sup>3</sup>, Mersiha Cerkezovic<sup>1</sup>,  
Halid Mahmutbegovic<sup>4</sup>, Nail Jusic<sup>5</sup>

<sup>1</sup>Hemodialysis Center, Public Health Institution Health Centre, Zivinice, Bosnia and Herzegovina

<sup>2</sup>Department of Physical Medicine, Public Health Institution Health Centre, Zivinice, Bosnia and Herzegovina

<sup>3</sup>Emergency Medical Care, Institute of Emergency Medicine, Sarajevo, Bosnia and Herzegovina

<sup>4</sup>Quality Control in Healthcare, Public Health Institution Health Centre, Zivinice, Bosnia and Herzegovina

<sup>5</sup>Administration Department, Public Health Institution Health Centre, Zivinice, Bosnia and Herzegovina

## Email address:

elveos@hotmail.com (E. Osmanovic)

\*Corresponding author

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**Abstract:** In order to achieve patient satisfaction, medical employees must work daily to improve the quality of work in all medical institutions. It is a process that aims to achieve efficiency in the process of working with patients, in order to achieve their satisfaction. Responsibility of providing quality and quantity of sufficient health care lies with health care employees including doctors, nurses / technicians, management, non-medical staff, but also those who use health care. Providing rewards and achieving the goals of healthcare workers is a condition for motivation. Institutions must meet the requirements of medical workers, but there must also be a political will as well in order for medical workers to fulfill their duties. The main purpose of the study is to explore, determine a direction (positive / negative) in relation to patient satisfaction with the provided / received medical care / service, that is, the quality of interaction (services provided), taking into account: medical personnel (doctors and nurses), access to the institution, and the environment in the medical institution. The study of patient satisfaction with the quality and safety of medical services involved 126 users of medical services in four health institutions. 120 interviewed patients have completed the questionnaire in total, 6 patients have not completed the questionnaire and 6 questionnaires will not be accepted for statistical processing and analysis. In our work, 83% of patients of both sexes are satisfied with working hours. In order to achieve a more significant improvement in the quality of services provided, it is necessary to organize a system that meets the needs of users and coordinate medical procedures for the benefit of users, increasing the quality of services to a higher level.

**Keywords:** Patient Satisfaction, Treatment Success, Treatment Duration, Motivation

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## 1. Introduction

In order to achieve patient satisfaction, medical employees must work daily to improve the quality of work in all medical institutions. It is a process that aims to achieve efficiency in the process of working with patients, in order to achieve their satisfaction. Responsibility of providing quality and quantity of sufficient health care lies with health care employees including doctors, nurses / technicians, management, non-medical staff, but also those who use health care [1]. It is

important to constantly make efforts in the field of healthcare in order to improve the quality of medical services and maintain health. Therefore, very often medical workers believe that the best indicator of their work and commitment is the health status of the population. However, medical workers very often forget that patient satisfaction with the services in the healthcare system is also important, which leads to successful prevention and treatment of diseases. Sick and injured people want fast and safe medical care, good communication with staff, respect, understanding and respect

of medical ethics [2]. Previously, numerous studies have shown that patients who cooperate with their doctor are satisfied with the health service, which supports the claim that it is very important for the doctor to exchange information with the patient that are important for accurate diagnosis of their health problem and adherence to recommended medical treatment of their diseases [3].

Below are the goals of manuscript:

Specific goals are aimed at the following research questions:

- 1) to study/determine - whether there is a positive relationship between access to the facility and patient satisfaction;
- 2) to explore / determine - whether there is a positive relationship between the behavior of doctors and patient satisfaction;
- 3) to explore / determine - whether there is a positive relationship between the behavior of doctors and patient satisfaction;

A competitive Questionnaire for Patient Satisfaction Survey - Agency for Quality and Accreditation in Health Care in the Federation of Bosnia and Herzegovina (AKAZ) was used for the purpose of the research, which consists of two socio-demographic questions, gender and age (5 age categories) of respondents.

Those are:

- 1) satisfaction with the institution;
- 2) doctor satisfaction;
- 3) nurse satisfaction;
- 4) satisfaction with the premises of the institution.

## 2. Achieving Quality in Healthcare

System is a set of interrelated elements that together lead to the achievement of goals in the environment in which the system exists. The health care system is a normatively accepted position of the social community and the state in the field of protection and improvement of population health, where all factors that implement it act in an organized and continuous development in terms of mutual division of labor, as integral parts of the social system. The healthcare system can be defined on the basis of the relation between beneficiaries, insured persons, healthcare institutions and regulatory authorities that combined make up the health insurance system [4].

The first interaction of the patient with the institution, doctor, nurse and environment in the medical institutions plays an important role in forming experience and emotions of the patient. If a first meeting is positive, a positive cycle opens between the patient and the medical institution [5]. On the other hand, if the meeting does not go well, it will be difficult to adequately implement the further process of communication or treatment.

### 2.1. Motivation of Medical Personnel

Providing rewards and achieving the goals of healthcare workers is a condition for motivation. Institutions must meet

the requirements of medical workers, but there must also be a political will as well in order for medical workers to fulfill their duties. Motivated employees will be more satisfied, more productive, patient care will be better, and that's the goal. The complexity of motivation is a complex process dominated by various factors controlled by management [6]. The better the motivation, the faster the process of developing quality health services will be [7]. Motivation is negatively affected by:

- 1) mobbing,
- 2) stress,
- 3) interpersonal relationships,
- 4) concern for existence,
- 5) poor working conditions,
- 6) unequal distribution of work tasks [8].

Salary allowances, financial incentives, fees, education subsidies, and other monetary benefits are the material aspect of motivation. Reputation, recognition, privileged position are intangible motivating factors. All this is a condition for increasing productivity [9]. Communication between employees and managers in the healthcare sector is very important because it allows a flow of information, problem identification, and at the same time creates a sense of security, belonging and self-confidence in employees. The stages of the motivation process in healthcare organizations are associated with setting a goal, taking measures and achieving a goal [10].

### 2.2. Quality Measurement

Modern way of life and work lead to the fact that patients are very often disappointed by the commercialization, bureaucratization of medicine, which leads to a weakening of long-distance relationships: medical institution-doctor /other medical personnel-patient [11]. Therefore, periodic surveys (measurements) of patients' satisfaction with provided medical services are recommended and / or implemented in order to correct existing decisions, plans based on the obtained results, i.e. implement continuous education of doctors / other medical staff in order to increase patient safety and trust as a basis for quality of health care [12].

Healthcare as a service activity wants to provide the best possible services, better financial operations, and is interested in providing better quality of services to patients. [13]. In order to know whether service is provided in quality way it is necessary to measure it. Expertise and communication equally affect the quality of services as well as patient expectations. There is also a certain problem in measuring quality, because quality does not have tangible and precise parameters that could be measured [14].

Berry and Zeithaml have developed the SERVQUAL or Service Quality model as a starting point for measuring service quality. This service quality model has five characteristics: reliability, safety, tangibility, understanding and responsiveness. This method of measurement aims to measure the differences in expectations from those provided, and thus show the level of service quality [15].

### 3. Methods

#### 3.1. Analytical Methods

Study methods are largely determined by the subject of the study. Thus, both qualitative and quantitative methods will be used in this article and those are: basic, general methods and methods of data collection. Analytical (analysis, abstraction, specialization, deduction) and synthetic methods (synthesis, concretization, generalization and induction) are the most common basic methods. Hypothetical-deductive, statistical and comparative methods are going to be used in this paper. In the end, testing and analysis of the contents of various documents will be the basic method and technique for data collection.

The main purpose of the study is to explore, determine a direction (positive / negative) in relation to patient satisfaction with the provided / received medical care / service, that is, the quality of interaction (services provided), taking into account: medical personnel (doctors and nurses), access to the institution, and the environment in the medical institution.

#### 3.2. Sampling and Statistical Methods

All the questions in the questionnaire were formatted according to the Likert type scale. The study was conducted in all services in four state institutions in May 2021. The research was conducted in accordance with ethical principles and human rights.

The population consists of health insurers who have health rights in the Tuzla Canton, Federation of Bosnia and Herzegovina. The sample was consisted of 126 patients of both

gender who were adults. The sample was taken in primary health care in four public health institutions during period from 1 - 28 February 2022. The sample was random - patients were interviewed on the principle of random sampling, who filled out the questionnaire as anonymous respondents:

- 1) Independent/s variables;
- 2) Dependent/s variables.

The software tool SPSS for Windows (20.0, SPSS Inc., Chicago, Illinois, USA or second generation) have been used for statistical processing. Categorical data are represented by absolute and relative frequencies.

### 4. Results

The study of patient satisfaction with the quality and safety of medical services involved 126 users of medical services in four health institutions. 120 interviewed patients have completed the questionnaire in total, 6 patients have not completed the questionnaire and 6 questionnaires will not be accepted for statistical processing and analysis.

The table shows that 52 (43.33%) respondents "agree" with the proposed claim "that the working hours of the institution is adequate", 48 (40.00%) "Agree absolutely" with the stated claim, 17 (14.17%) "Disagree" with the stated claim, and 3 (2.55%) "Absolutely disagree" with the claim.

According to the results of the Chi-square test and the corresponding P-value ( $P < 0.05$ ) it can be concluded that among the respondents there is a statistically significant difference in the relative representation (percentage) of respondents according to the intensity of agreement with the proposed (Figure 1).

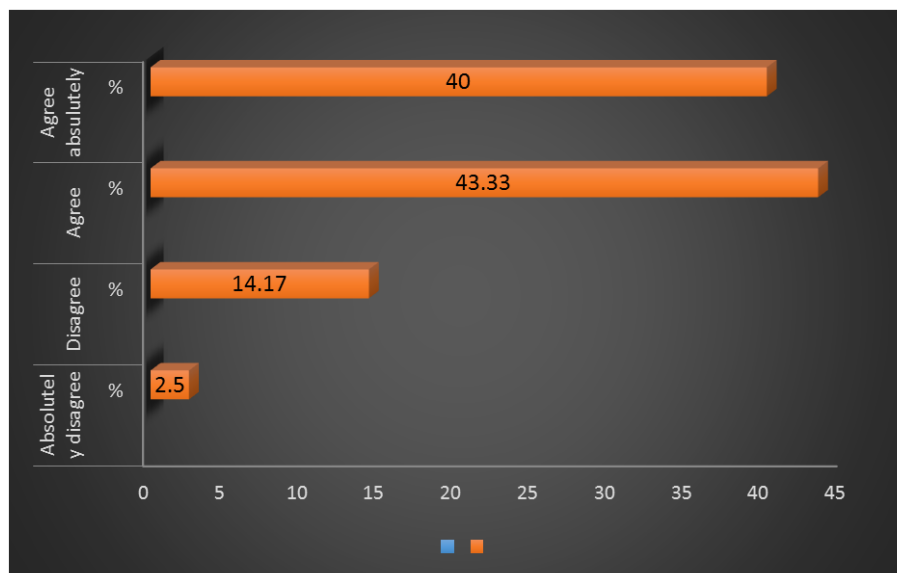


Figure 1. Graphic presentation of the proposed claim "the working hours of the institution are appropriate".

There were 45 male respondents (37.5%) and 75 female respondents (62.5%) in the sample. The majority of male respondents were in the age group from 45 to 54 year, 13 of them (28.89%), then in the age group from 21 to 34 years

there were 10 (22.22%), then in the age group 55 years and older there were 9 (20.00%), then in the age group from 35 to 44 years there were 8 (17.78%) and the least in the group under 20 years there were 5 (11.11%). Among female

respondents, the most common age group is from 35 to 44 years, 20 of them (26.67%), then in the age group from 21 to 34 years 17 (22.67%), then in the age group from 45 to 54

years 16 (21.33%), then in the age group 55 years and older than 13 (17.33%), and the least represented women are the age groups under 20, 9 of them (12.00%) (Table 1).

**Table 1.** Gender representation of respondents.

DOCTOR	GENDER OF RESPONDENTS		P value	df	Mean
	Men	Female			
It listens to you with attention	3,29 ± 0,82	3,31 ± 0,80	0.565	4	5.241
Give you enough time	3,07 ± 0,89	3,23 ± 0,81	0.963	3	3.612
Explain to you what you want to know	3,29 ± 0,79	3,33 ± 0,86	0.427	3	3.655
Give you some advice and suggest a good way to treat	3,33 ± 0,77	3,41 ± 0,79	0.784	2	4.762
General Assessment	12,98 ± 3.08	13,28 ± 3,02	0.771	3	4.317

An additional correlation analysis of Pearson's results was carried out, confirming the statistical significance between those who "agree and disagree" with the working hours of a medical institution based on the Fisher Z-transformation (Table 2).

**Table 2.** Analysis of Pearson correlation statistics.

Power Analysis - Pearson Correlation

Power Analysis Table						
	N	Actual Power <sup>b</sup>	Assumptions Test			
			Power	Null	Alternatives	Sig.
Pearson Correlation <sup>a</sup>	4	.060	.05	0	.5	.05
a. Two-sided test.						
b. Based on Fischer's Z-transformation and the normal displacement approach.						

The table presents that 52 (43.33%) respondents "agree" with the proposed claim "that the duration of the review is acceptable", 46 respondents (38.33%) "Absolutely agree" with the stated claim, 20 respondents (16.67%) "Disagree" with the stated claim, and 2 respondents (1.67%) "Absolutely disagree" with the claim. According to the results of the Chi-square test and the corresponding P-value ( $P < 0.05$ ) it can be concluded that among the

respondents there is a statistically significant difference in the relative representation (percentage) of respondents according to the intensity of agreement with the proposed claim. This means that respondents who agree with the proposed statement dominate, while respondents who absolutely disagree with the proposed statement within the duration of medical examination are less represented (Table 3).

**Table 3.** Duration of medical examination.

DURATION OF MEDICAL EXAMINATION		Absolutely disagree		Disagree		Agree		Absolutely disagree		Chi square test	df	P
		f	%	f	%	f	%	f	%			
	Duration of medical examination is acceptable	2	1.67	20	16.67	52	43.33	46	38.33	54.133	3	0.001

(df=3; mean=4,17; p=0,001).

The magnitude of the effect quantitatively expresses the difference in results between the groups of respondents who completed the questionnaires. It is expressed by the Cohen Hedges test as a difference of parameters between groups and

can be expressed as a deviation from known values. It can be noticed that the differences in the answers of the respondents when giving answers in the questionnaire were small to medium, which can be seen in Table 4.

**Table 4.** Cohen Hedge Effect Size Test.

		Standardizer	Point Estimate	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Lower
Duration of medical examination	Cohen d	.84339	4.950	1.161	8.843
	Hedges correction	1.16554	3.582	.840	6.399
Waiting for the medical examination	Cohen d	1.291	1.936	.146	3.672
	Hedges correction	1.784	1.401	.105	2.657
Satisfaction of medical personnel	Cohen d	691,042	.675	-.471	1.742
	Hedges correction	955,004	.489	-.341	1.261
Cabinet equipment	Cohen d	7.08872	5.466	1.315	9.744
	Hedges correction	9.79645	3.9565	.951	7.051

Post hoc tests are an integral part of ANOVA. We use ANOVA to test the equality of four group means, statistically significant results indicate that no significant differences between multiple group means while controlling the experiment-wise error rate (Table 5).

**Table 5.** One-Way ANOVA and Post Hoc Multiple Comparison Tests.

	Sum of Squares	df	Mean Square	F ratio	P value
Explanation of the state of health	26.230	4	6.557	2.052	0.111
Providing consultations	22.041	3	7.347	7.458	0.001
Neatness of the doctor's office	2.823	3	0.941	6.231	0.001
Conditions of access to the institution	3.000	3	1	7.458	0.562

(explanation of health status: df=4; mean=6.557; p=0.111).

(providing consultations: df=3; mean=7.347; p=0.001).

(neatness of the doctor's office: DF=3; average=0.947; P=0.01).

(conditions of access to the institution: df=3; mean=1; p = 0.562).

## 5. Discussion

Neatness is one of the qualities of medical institutions where it is necessary to know that all measures are taken in order to maintain hygiene and prevent the spread of infectious diseases. According to the research conducted in Brussels by the author Andreas and colleagues who compared results of hygienic conditions in 12 large centers of physical medicine in Europe, different results have been observed. Neatness varied from satisfactory to excellent depending on the assessment of patients.. Health institutions maintain the tidiness of space and equipment at an enviable level, given the poor economic situation in Bosnia and Herzegovina.

It can be noticed that women are more satisfied with the work of doctors than men by comparing the results of the research. In addition, interpersonal relationships between staff are an important element in the quality of services provided to patients, and it should be concluded that there is an interdependence of doctors and nurses/technicians at work. According to one of the studies conducted earlier, there is also a good connection between doctors and patients, and patient awareness was at a low level.

Scheduling appointments for medical examination were positively evaluated by the patients, as well as the duration of the examination. All of the above are links that lead to good quality of service in the Health Center Živinice. The health center should pay attention to increasing the number of employees in order to avoid staff fatigue, and to ensure that the quality of services is at an even higher level. Comparing with the study from 2014, conducted in Canada (80% respondents are satisfied with the waiting time for the medical examination), it can be noticed that the approximate the same number of patients are satisfied with the time for scheduling appointment at the doctor's is also presented in our study (78%).

“In order to determine the achievements of the reform of primary health care in recent years, several studies have been conducted in the Federation of BiH. However, only this research included all actors of reform change: patients, service providers (doctor and nurse), directors of health centers, other specialists in primary health care and specialist consultative health care and decision makers in health care.

The results of the research showed that the existing laws and bylaws are not sufficiently adapted to the development of the health system. In order to carry out health care reform, it is necessary to adopt certain laws that will improve the financing of health care. Establishing standards that will be a measure of service quality is an unavoidable act, the postponement of which will not be good for patients. Forms in health care are not identical in health care institutions, the delay of the information system that will connect all institutions makes it difficult for health workers to communicate. There is a lack of political will to carry out health care reforms. More than three quarters of patients in the Federation of Bosnia and Herzegovina (78.8%) confirmed that their privacy is highly respected, without distinction in urban and suburban areas, and the least in the Central Bosnia Canton (51.9%). Almost half of the patients (48.9%) state that they have been referred by their family doctor to the possible risks of recommended medical examination and treatment, without significant differences between urban and suburban settlements. In addition, more than half of the patients from the BiH Federation (55.5%) say that a nurse helps them navigate the healthcare system very well.

In our work, 83% of patients of both sexes are satisfied with working hours. Comparing our results with a survey conducted in France in 2017 it is noticed that our patients are slightly less satisfied (58%) in terms of whether their doctor listens to them attentively. Patient satisfaction in France was 84%. This can be explained by the fact that there are a small number of specialist doctors, while in city of Živinice there is around 70,000 residents. Therefore, it is important that the institution increases the number of employees, since the reduction of the health workers is reflected in rapid fatigue and deterioration in the quality of services.

## 6. Conclusion

The analyzes in this paper lead to the conclusions that the users in the four different health facilities are satisfied with the services provided. The quality of medical services provided by the medical center particularly affects the satisfaction and behavior of doctors and nurses/technicians, as well as access to the facility. Considering this paper as a whole, we can also follow

certain guidelines to achieve a better quality of services, which is reflected in the satisfaction of both users and staff. In order to achieve a more significant improvement in the quality of services provided, it is necessary to organize a system that meets the needs of users and coordinate medical procedures for the benefit of users, increasing the quality of services to a higher level.

By looking at the results of the research, it can be concluded and give suggestions for other similar research. This study was aimed at showing patient satisfaction. Patient satisfaction depends on the communication skills of the staff with patients, the expected service and the experience of providing services. In percentage terms, more patients are satisfied compared to those who are not satisfied with the work, staff and services in all surveyed public health institutions. According to research by Andreas and associates who compared the results of hygienic conditions in 12 major physical medicine centers in Europe in Brussels in 2016, different results were observed [16]. Thus, the working conditions were achieved. There is also continuous professional training of employees, which results in customer satisfaction. Comparing with the study from 2014, conducted in Canada (80% satisfied with the waiting time for the examination), it can be noticed that the approximate number of satisfied patients with the time of ordering for the examination is also in our study (78%). According to a 2015 survey, most survey participants completed training in their field (all doctors, 94.2% of nurses), and / or health management (71.1% of doctors), noting that the training improved their knowledge and skills [17]. In our work, 83% of patients of both sexes are satisfied with the working hours in the Public health institutions. Of course, the institution also has economic efficiency due to the transfer of the volume of services with the Institute of Medical Insurance. We managed to define the needs of patients, arrange them according to priorities, and thus solve them. The patients took it and gave a positive assessment. The evaluation process needs to be refined, collective responsibility abolished and transferred to the responsibility of each individual. Algorithms are necessary when solving individual tasks that occur in stages.

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