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## DOCTORAL THESIS

**RESEARCH ON THE EVALUATION OF ORO-DENTAL HEALTH AND  
QUALITY OF LIFE IN IMPLANTO-PROSTHETIC REHABILITATED  
PATIENTS**

SUMMARY

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## LIST OF PUBLICATIONS

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**Appropriate key:**

- **Dental health**
- **Infectious pathologies**
- **Life quality**
- **Implanto-prosthetic rehabilitations**
- **Patient satisfaction**
- **Medical systems**
- **Questionnaires**
- **Results**
- **Prevention**
- **Addressability**

## INTRODUCTION

The oro-dental health status of the population is a worrisome problem at the global level, despite the continuous efforts that organizations worldwide have made.

In Romania, oro-dental health continues to be a problem, with alarming incidences of oral cavity pathologies, especially dental carious processes and periodontal disease. Poor dental health can also lead to other particularly serious complications, especially infectious pathologies that can even endanger the lives of patients.

One of the reasons that led me to address this aspect is the fact that I practice Oral and Maxillofacial Surgery, which represents the surgical specialty that addresses these infectious pathologies, and daily I am faced with patients who end up with such complications.

Another aspect that often occurs as a result of poor oral health is the loss of teeth, significantly influencing the daily life of patients.

Fortunately, at the present time, there is the possibility to solve all these problems for patients through implanto-prosthetic rehabilitations, which have the ability to significantly increase the quality of life of patients, a globally proven aspect, so this therapeutic procedure that it is essential to promote it among patients so that they understand its role and all the benefits it brings to their lives.

In the general part of this paper, I chose to discuss aspects regarding the health system and the state of oral health in Romania. At the same time, I carried out an analysis of the efficiency and quality of the health system in Romania. I also presented in this part the concept of patient satisfaction, the concept of quality of life in medicine and, an extremely important topic for this work, was the one regarding the implanto-prosthetic rehabilitation.

The second part of this thesis is represented by the part of personal contributions, in which I have carried out 3 studies. Through the studies, I was evaluating the oral health of the population, the quality of life of implanto-prosthetic rehabilitated patients and also, the degree of satisfaction of patients in relation to the medical services provided. This work aimed to elucidate aspects important from the daily practice of dentists, with or without specialization in Oral and Maxillofacial Surgery, in order to simplify their approach in the future for the benefit of patients.

## **The general part – Current state of knowledge**

### **Chapter 1. The health system**

Health systems are essential for maintaining the health of the population, being defined as sets of organizations, institutions and resources dedicated to improving health. These include various subsystems for the provision and financing of health services and have evolved through significant reforms over the past 100 years.

Components of the health system: These include resources (medical personnel, medical facilities, essential products), organization (governmental, non-profit, entrepreneurial), financing (taxes, health insurance), management (planning, administration, regulation) and service delivery (prevention, treatment, rehabilitation).

Oral health care systems: These vary between countries and are affected by the low prioritization of oral health. Lack of effective prevention programs and adequate resources limit access to oral care, especially in developing countries.

Global approaches to improving oral health: WHO Report from 2020 emphasizes the need to integrate oral health into public health policies and proposes measures for the prevention and treatment of oral pathologies. Common risk factors (sugar, tobacco, alcohol) and inequalities in access to care require concerted action to improve oral health globally.

Oral health status in Romania: The high prevalence of chronic oral pathologies in Romania is influenced by socio-economic inequalities and limited access to medical services. Studies show that only a small part of the population has access to adequate dental treatments, and the reimbursement of oral care by the public insurance system is limited.

The consequences of poor oral health: Poor oral hygiene can lead to cavities, gingivitis, periodontal disease and other infections that can develop into serious complications. Educating patients and improving access to treatments are essential to reducing the incidence of these conditions. Oral-maxillofacial surgery plays a crucial role in treating infections and other severe pathologies of the oral cavity.



## **Chapter 2. Efficiency and quality of the health system in Romania**

Health infrastructure in Romania: The health system in Romania is highly centralized and includes the Ministry of Health, the National Health Insurance House (CNAS), the National Authority for Quality Management in Health (ANMCS) and the National Agency for Medicines and Medical Devices (ANMDM). The system suffers from political instability and a reduced government budget, which negatively affects the quality and efficiency of medical services.

The analysis of the health system from the perspective of efficiency and quality: Access to health care is problematic for the poor population. Recent reforms have attempted to improve access and efficiency, but many low-income people do not receive adequate assistance. A large number of citizens do not pay social health insurance contributions, either because of official exemptions or because they work in the informal sector.

The concept of patient satisfaction: Patient satisfaction has become a crucial aspect of the healthcare system. This is influenced by multiple interactions and factors, including the interpersonal skills of staff, the technical quality of care and the physical environment of medical facilities. Satisfaction is defined as the degree of correspondence between the patient's expectations and the actual experience of the services received.

Factors influencing patient satisfaction: Satisfaction is determined by professional care, social interactions, physical environment of the medical facility, accessibility of services, costs and organizational characteristics. The patient's age, socio-economic status and health status also play an important role in their perception of the quality of medical services.

The importance of patient satisfaction in healthcare: Patient satisfaction is critical to improving healthcare outcomes and maintaining patient-provider relationships. This contributes to quality improvement initiatives and institutional reputation, positively influencing patient loyalty and retention.

Theories of patient satisfaction: Various theories explain patient satisfaction, including attribution theory, discrepancy theory, disconfirmation theory, and economic theory. These theories focus on the interaction between patient expectations and experiences and how these interactions influence perceptions of service quality.

Methods of measuring patient satisfaction: Measuring patient satisfaction is done through qualitative and quantitative methods. Qualitative methods include

interviews, focus groups, and patient observation, and quantitative methods use standardized questionnaires and rating scales such as the Likert scale. These methods help to identify and address problems within medical services, helping to improve quality and increase patient loyalty.

### **Chapter 3. Quality of life in medicine**

Defining the concept of quality of life in medicine: Quality of life (QoL) has evolved from the use of traditional indicators, such as life expectancy and causes of death, to measurements that reflect people's physical, mental and social well-being. Health-related QoL (HRQoL) is assessed across domains and represents individuals' subjective perception of their physical, psychological and social health. The World Health Organization defines QoL as "a state of complete physical, mental and social well-being", emphasizing the complexity of this concept.

Oral health-related quality of life: Oral health-related quality of life (OHRQoL) is recognized as an integral part of overall health and well-being. The OHRQoL emerged in the 1980s and includes four main components: oral function, orofacial pain, orofacial appearance, and psychosocial impact. These dimensions provide a standardized approach to measuring how oral pathologies affect patients.

Importance of oral health-related quality of life: OHRQoL is central to dental clinical practice, dental research and dental education. Dentists must recognize that they treat human beings, not just teeth and gums. Understanding the impact of oral pathologies on overall health and quality of life helps improve access to oral care and patient education.

Dentist-patient relationship: The relationship between dentist and patient is crucial to the quality of care and patient satisfaction. This influences most aspects of care, from effective communication and trust, to the provision of information and time allocated to each patient. The importance of this relationship has often been neglected in dental education, where the emphasis has been on clinical and technical excellence.

Methods of measuring patients' quality of life: Health-related quality of life includes physical, mental and social well-being. There are numerous OHRQoL assessment tools for children, adolescents and adults. Among the most widely used questionnaires for adults is the Oral Health Impact Profile (OHIP), which assesses aspects such as functional limitations, physical pain, psychological discomfort, and physical and psychological disabilities. These tools help assess the impact of oral health on daily life and identify areas for improvement in dental practice.

## **Chapter 4. Implant-prosthetic rehabilitation. Fundamental aspects**

Dental implants. Dental implants are an effective and reliable solution for tooth replacement, providing the function and aesthetics of natural dentition. The history of dental implants goes back about 3000 years, but the significant breakthrough was made in 1952 when Bränemark demonstrated the osseointegration of titanium.

Classification of dental implants: Dental implants are classified according to material (pure titanium, titanium alloys, zirconium), shape (screw, cylindrical, conical), surface (machined, textured, hydrophobic, hydrophilic), length and diameter. Each type of implant has specific advantages depending on the patient's clinical and aesthetic needs.

Preoperative examination of potential patients requiring dental implants: The preoperative examination includes a detailed clinical and radiological analysis of the patient. This assesses general health, medical history, oral hygiene habits and current dental condition. Radiological examination, especially cone beam computed tomography (CBCT), is essential to determine the anatomy of the bone and adjacent structures.

Long-term prognosis of implant-prosthetic rehabilitations: Oral rehabilitation with dental implants is a successful treatment method, with a long-term survival rate of over 95%. Long-term clinical studies show that dental implants are a safe and predictable solution, even in difficult cases requiring reconstruction.

Quality of life in implanto-prosthetic rehabilitated patients: Tooth loss significantly affects patients' quality of life, influencing psychological and functional discomfort. Implant-prosthetic rehabilitation significantly improves patients' quality of life, reducing discomfort and improving oral aesthetics and functionality. Multiple studies confirm the improvement of quality of life after implant-prosthetic therapy, without significant differences according to gender or age.

## **The special part. Personal contributions**

### **Chapter 5. Research framework**

#### **Research hypotheses**

In order to realize this thesis, I started from a series of research hypotheses, namely:

Hypothesis 1: There is a precarious state of oro-dental health among the Romanian population, demonstrated by the increased incidence of oro-maxillo-facial infectious pathologies.

Hypothesis 2: Implanto-prosthetic rehabilitation leads to the improvement of the quality of life of patients benefiting from this therapy.

Hypothesis 3: Considering the increasingly high preference of patients for oral rehabilitation dental services in the private system, there is a higher degree of patient satisfaction compared to those who go to the public system.

#### **Research objectives**

This research aimed to achieve the following objectives:

##### **Study 1**

- Evaluation of the oro-dental health of the Romanian population;
- Evaluation of the consequences that poor oral hygiene has on oral health;
- Identification of the incidence of infectious pathologies addressed to the Oral and Maxillofacial Surgery Clinic in Sibiu from the total number of hospitalizations within the clinic over a period of 5 years (2018-2022);
- Identifying the impact that the COVID-19 pandemic had on the number of admissions;
- Identification of possible associations between socio-demographic factors and infectious pathologies;
- Evaluation of comorbidities presented by hospitalized patients with various infectious pathologies;
- Evaluation of the duration of hospitalization of patients with infectious pathologies;
- Analysis of the types of antibiotics that were used in the therapeutic scheme and possible associations between them;
- Identification of possible correlations between the number of antibiotics used concurrently and the duration of hospitalization

### **Study 2.**

- Evaluation of the quality of life in patients who will benefit from a complex implanto-prosthetic rehabilitation;
- Monitoring the degree of improvement in the quality of life 2 months after the completion of implanto-prosthetic rehabilitation;
- Evaluation of aspects of the quality of life most significantly influenced by this therapeutic conduct;
- Identifying certain correlations between the socio-demographic typology of the patients and the quality of life scores reported by them;
- Identification of possible associations between the domains analyzed both at the first measurement and at the second measurement.

### **Study 3.**

- Evaluation of patients' satisfaction with oral rehabilitation dental services;
- Highlighting the differences between the degree of satisfaction of patients who turn to a medical service in the public system versus the degree of satisfaction of patients who turn to a medical service in the private system;
- Identifying the factors that have the greatest impact on patient satisfaction;
- Identification of certain correlations between the socio-demographic typology of patients and the degree of satisfaction reported by them;
- Identification of possible correlations between the factors that influence the degree of satisfaction of patients;
- Monitoring and identifying possible solutions to increase patient satisfaction and addressability.

## **General research methodology**

### **Study material**

From a clinical-statistical point of view, this research involved the analysis of 3 groups of patients.

### **Study 1**

#### **Inclusion criteria:**

- patients hospitalized in the Surgery Clinic O.M.F. in the period 2018-2022;
- patients who presented in the clinic who required hospitalization;
- patients hospitalized under continuous hospitalization regime;
- patients over 16 years of age;

- patients diagnosed with various infectious pathologies.

**Exclusion criteria:**

- patients who presented in the clinic who did not require hospitalization;
- patients hospitalized under day hospitalization regime;
- patients under the age of 16;
- patients diagnosed with various non-infectious pathologies.

**Study 2**

**Inclusion criteria:**

- patients over 20 years old;
- patients who consented to participate in the study;
- patients who have not benefited from implanto-prosthetic rehabilitation in the past;
- patients who have been missing teeth for more than a year before presenting to the office;
- patients who did not have general contraindications for the insertion of dental implants.

**Exclusion criteria:**

- patients under the age of 20;
- patients who did not consent to study participation;
- patients who have benefited from another implanto-prosthetic rehabilitation in the past;
- patients who have been missing teeth for less than a year before presenting to the office;
- patients who had absolute contraindications regarding the insertion of dental implants.

**Study 3**

**Inclusion criteria:**

- patients over 18 years of age;
- patients who lived in Sibiu county, Romania;
- patients who consented to participate in the study.

**Exclusion criteria:**

- patients under the age of 18;
- patients who did not live in Sibiu county, Romania;

- patients who did not consent to participate in the study.

## **Statistical data processing method**

### **Software used:**

For hypothesis testing and statistical analyses, studies used SPSS (version 20) and R (v.4.0.5) software.

### **Study 1:**

Data were presented as frequencies and percentages. Association algorithms and concordance plots were used to analyze associated pathologies. Analyzes were performed with IBM SPSS and R.

### **Study 2:**

Data analysis included calculation of mean OHIP scores to assess impact on quality of life. Mean differences in OHIP scores before and after implant-prosthetic rehabilitation were analyzed using the Wilcoxon test, with a p value < 0.05 considered significant. The standard deviation and 95% confidence intervals for the mean difference as well as the effect size were also calculated. Network analysis investigated the relationships between OHIP items and item groups before and after treatment.

### **Study 3:**

For each questionnaire item, mean scores and 95% confidence intervals were calculated. Differences between public and private systems were analyzed using parametric and non-parametric tests. Regression analysis was used to model the relationship between patient satisfaction and the independent variables (office and dentist performance).



## Chapter 6. Study 1. Retrospective study on hospitalized morbidity in the oral and maxillofacial surgery clinic of the Emergency County Clinical Hospital in Sibiu

Oral and Maxillofacial Surgery (OMF) is a surgical field with significant evolution, covering a wide range of interventions, from tooth extractions to oncological and reconstructive treatments. Oral-maxillofacial infections, often of odontogenic origin, can spread rapidly to the deep tissues of the head and neck, presenting considerable risks for morbidity and mortality. This retrospective study aims to evaluate the oral health status of patients of the OMF Surgery Clinic of the Emergency County Clinical Hospital in Sibiu, as well as to identify the incidence and frequency of odontogenic and non-odontogenic infections.

The study was conducted on a sample of 1246 hospitalized patients between 2018 and 2022, using data collected from the hospital's electronic database. Data analysis was performed using SPSS version 20 and R v.4.0.5 software. The results of the study revealed important aspects regarding the distribution of infectious pathologies, monthly and annual variations in cases, patient demographics, associated comorbidities, length of hospital stay and antibiotic use.

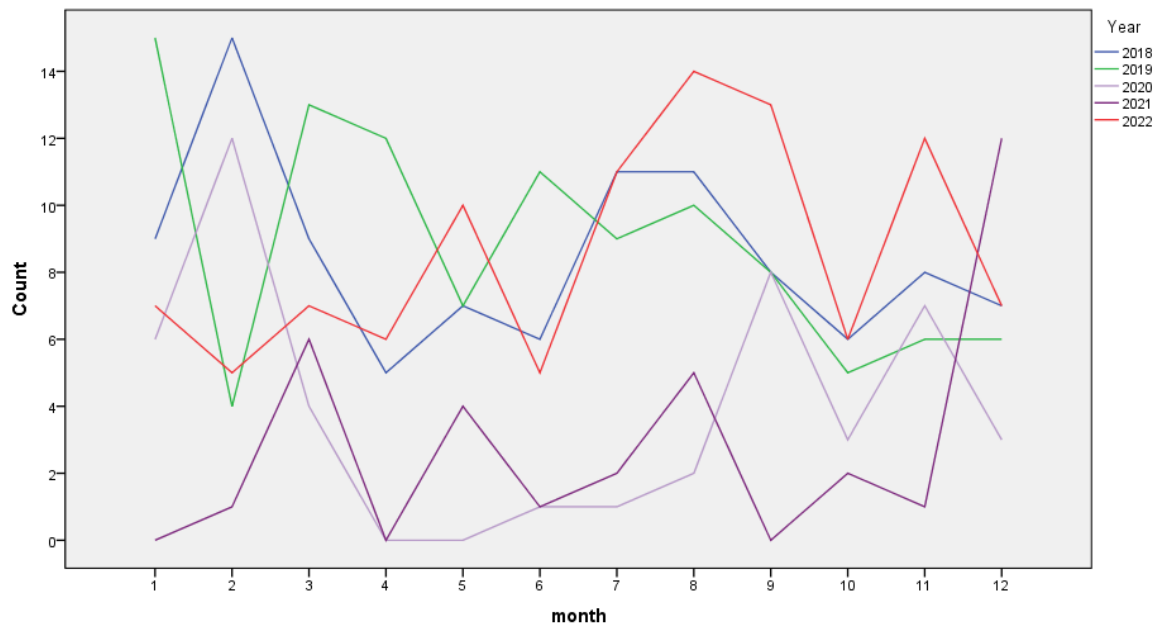
Regarding the distribution of infectious pathologies, it was found that 68.5% of patients had no infections, while 31.5% were diagnosed with various infections. Primary and secondary infections of the fascial spaces were the most common, representing 95.41% of cases. Other pathologies, such as diffuse suppurations and chronic infections, had very low prevalences. These data emphasize the importance of prompt diagnosis and treatment of infections to prevent severe complications.

**Table 3. Distribution of infectious pathology**

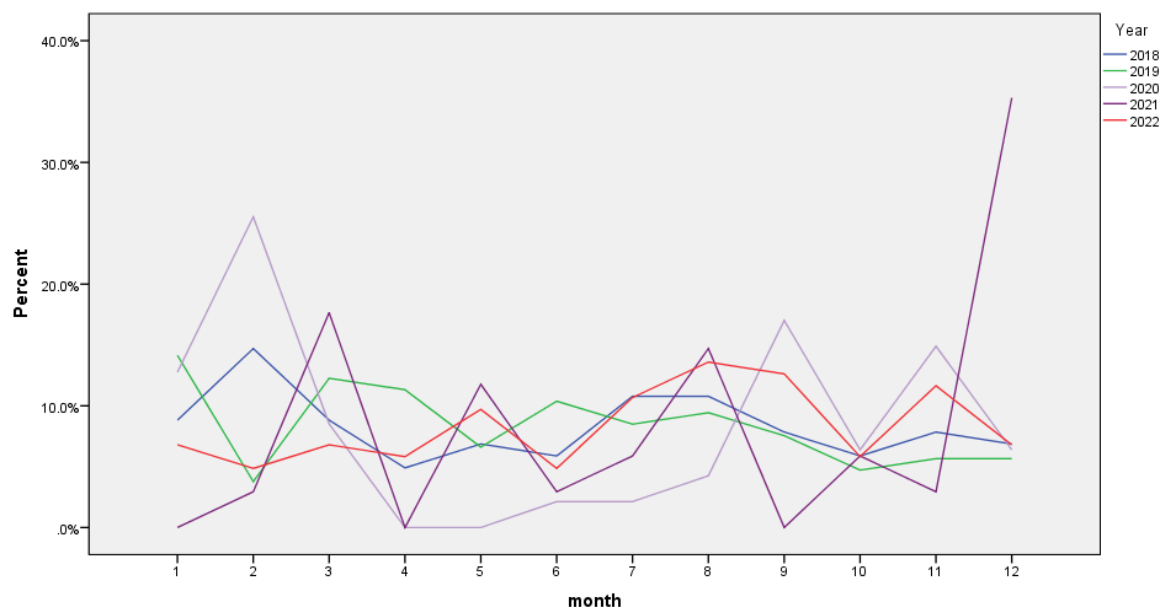
	Frequency	Percent	Valid percent	Cumulative percentage
Valid no	854	68.5	68.5	68.5
Valid yes	392	31.5	31.5	100.0
Total	1246	100.0	100.0	

Analysis of the monthly and annual distribution of cases showed that the number of admissions was relatively constant throughout the year, with a peak in August (10.7%) and March (9.9%). The years with the most admissions were 2019 (27.0%) and 2022 (26.3%), while 2020 and 2021 saw a significant decrease in the

number of cases, most likely due to the COVID-19 pandemic, which affected access to medical services.

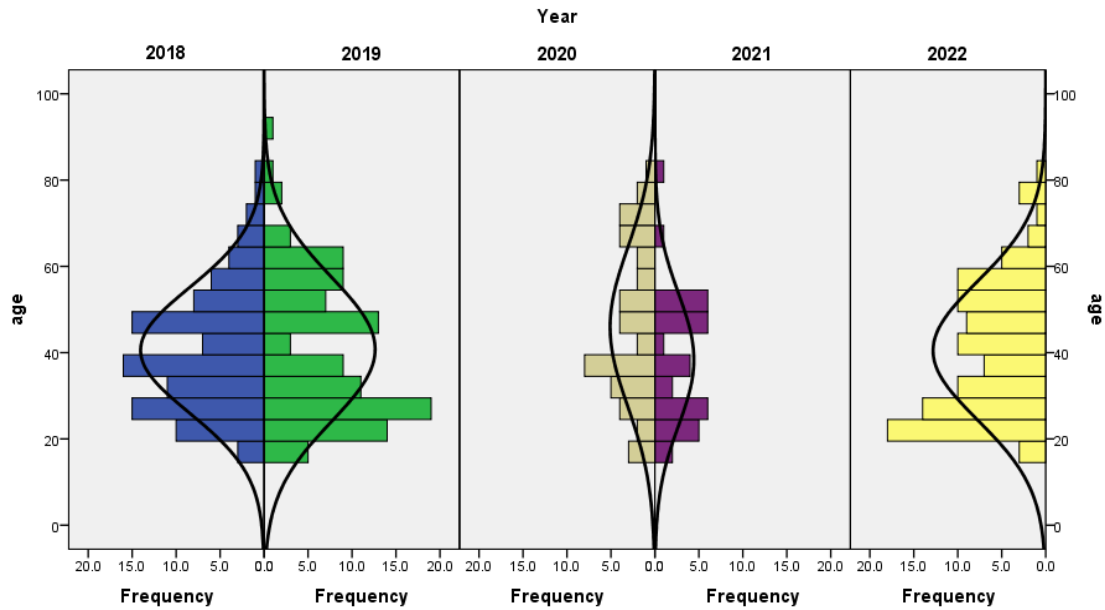


**Figure 1. Statistical analysis of the monthly distribution (frequency) of infectious pathology cases**



**Figure 2. Distribution of infectious pathology cases (percentages) in the period 2018-2022**

The mean age of the patients was  $M=41.04$  ( $SD=16.121$ ), with fluctuations during the COVID-19 period (2020:  $M=45.94$  ( $SD=18.40$ ), 2021:  $M=38.38$  ( $SD=15.31$ )).



**Figure 3. Statistical analysis of the age and year distribution of patients**

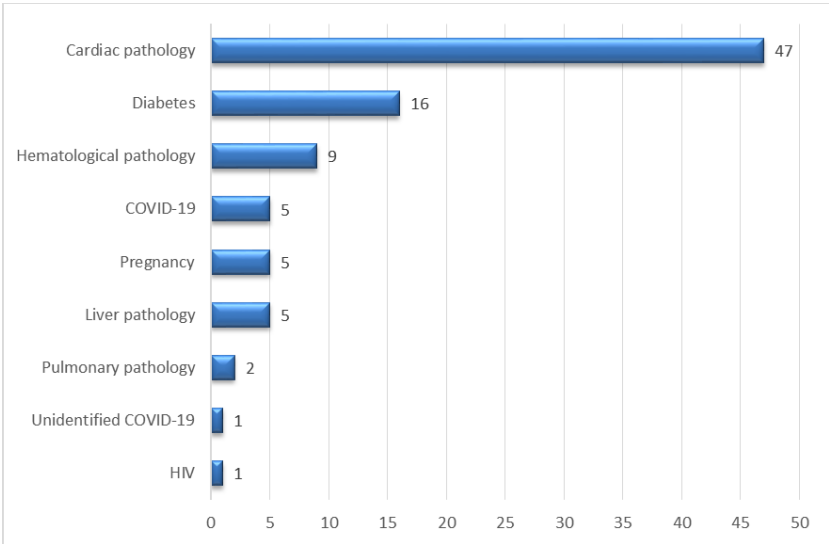
Patient demographics revealed a higher proportion of men (54.34%) compared to women (45.66%). The majority of patients came from the urban environment (61.73%), probably reflecting easier access to medical services in urban areas. Regarding comorbidities, the most frequent were cardiac pathologies (11.99%) and diabetes (4.08%), underlining the need for an integrated approach in the treatment of patients with multiple health problems.

**Table 6. Distribution of patients according to sex, place of residence and period of analysis**

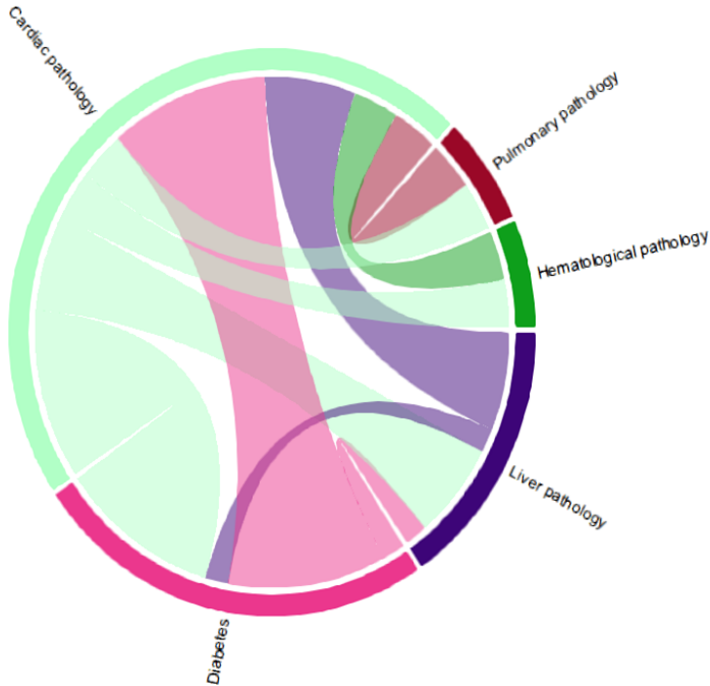
		Count	N %
Gender	0	179	45.66%
	1	213	54.34%
Residence	Rural	150	38.27%
	Urban	242	61.73%
Year	2018	102	26.02%
	2019	106	27.04%
	2020	47	11.99%
	2021	34	8.67%
	2022	103	26.28%

The study identified that the most frequent pathologies associated with patients with oro-maxillo-facial infectious diseases are cardiac pathologies (11.99%) and

diabetes (4.08%). Other associated conditions had very low prevalences, indicating their rarity among the studied patients. The prevalence of COVID-19 was 1.28% for identified cases and 0.26% for unidentified ones, emphasizing the need for continuous prevention measures. The coexistence of different pathologies, including liver, heart, lung, hematological, pregnancy, HIV and COVID-19, is presented to illustrate the complexity of the patients' health status.

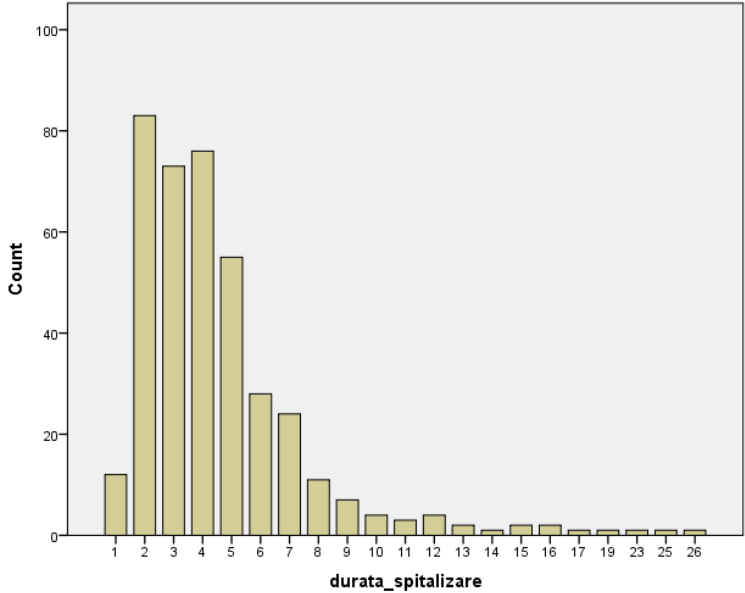


**Figure 4. Statistical analysis of the distribution of common associated pathologies**

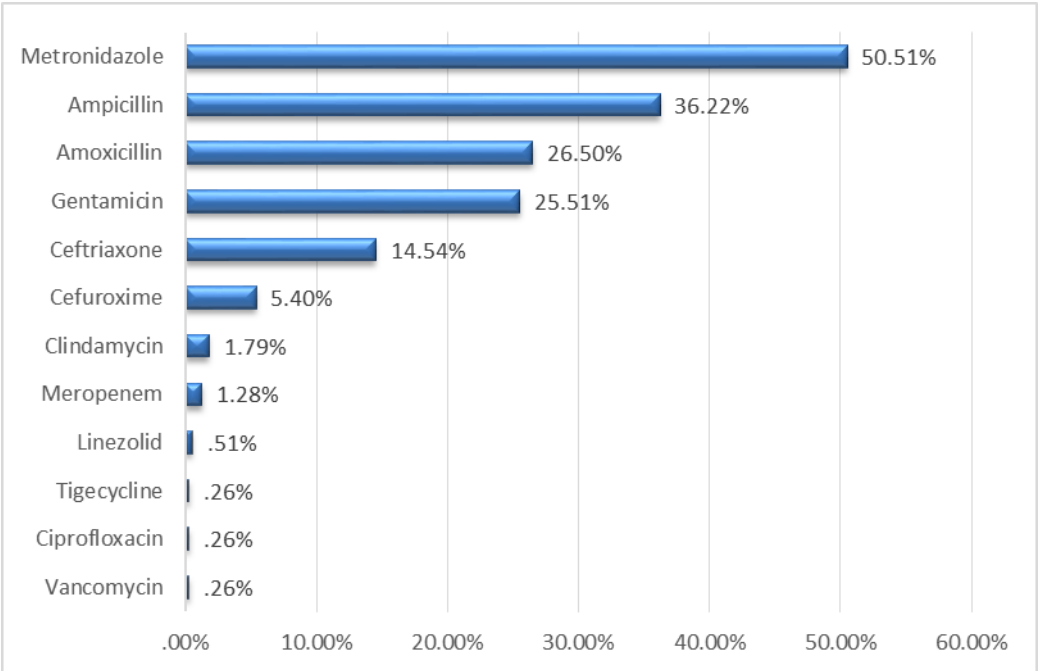


**Figure 5. Statistical analysis of the coexistence of various pathologies**

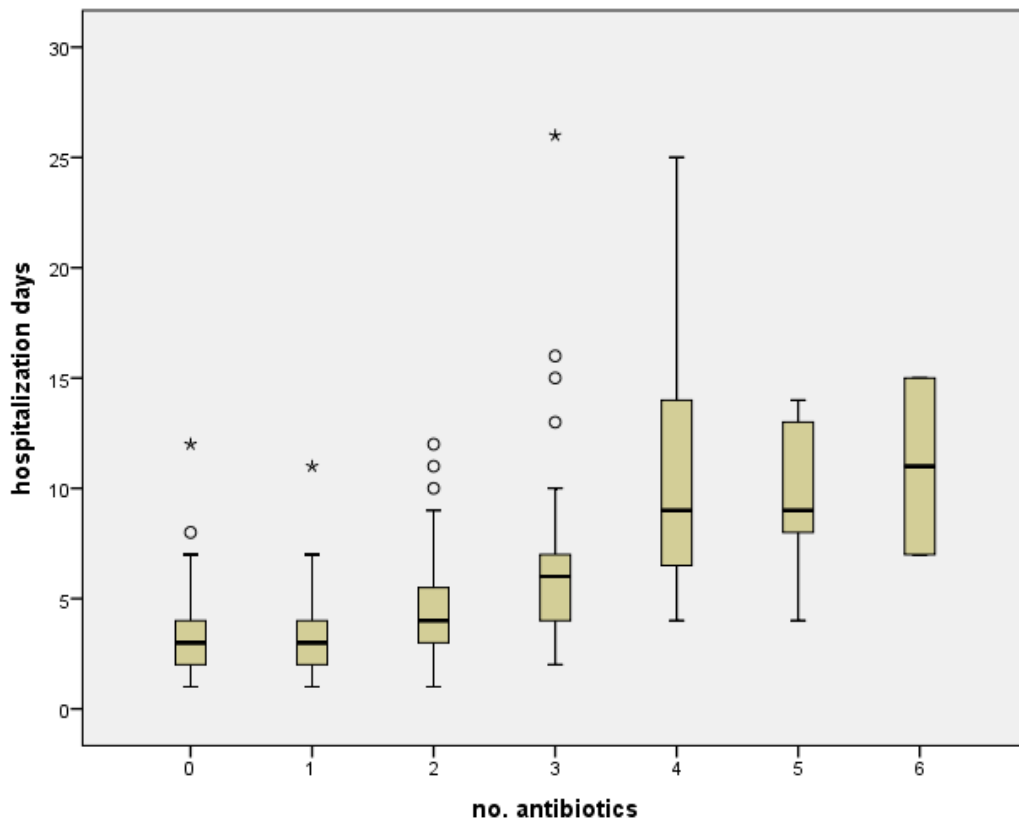
The duration of hospitalization varied between 1 and 26 days, with an average of 4.58 days. Most patients were hospitalized between 2 and 5 days (73.2%), indicating a relative efficiency in case management. The use of antibiotics was an essential component of treatment, with Metronidazole being the most used antibiotic (50.51%), followed by ampicillin (36.22%) and amoxicillin (26.50%). Most patients received one or two antibiotics (59.7%), indicating relatively simple and targeted treatments.



**Figure 6. Duration of hospitalization**



**Figure 7. Statistical analysis of the types of antibiotics administered**



**Figure 8. Statistical analysis of the number of antibiotics used for each patient in correlation with the duration of hospitalization**

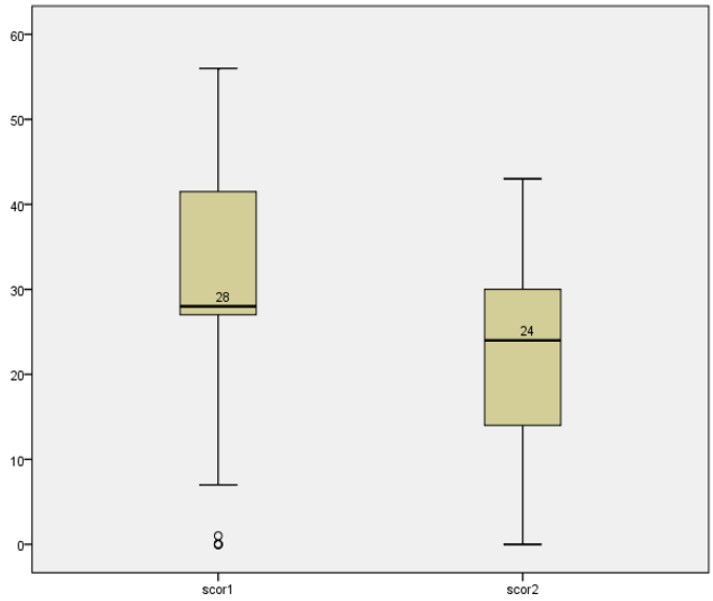
In conclusion, the study highlights a high prevalence of oro-maxillo-facial infections among patients of the OMF Surgery Clinic in Sibiu, influenced by seasonal and socio-demographic factors and complicated by the presence of comorbidities. The results highlight the need for preventive and educational interventions for oral health, as well as personalized treatment strategies to improve the quality of care provided. These data can guide public health policy and clinical practice, with the potential to reduce morbidity and improve overall population health.

**Chapter 7. Study 2. Post-implanto-prosthetic rehabilitation study regarding the degree of improvement in patients' quality of life**

The post-implanto-prosthetic rehabilitation study investigated the improvement of patients' quality of life after dental implants. The main aim was to evaluate the influence of this procedure on the general well-being of the patients, especially analyzing the significant changes in their perceptions before and after the treatment. The study included a sample of 116 patients, aged between 20 and 70, who benefited from implant-prosthetic rehabilitation at a private clinic in Sibiu.

To measure the impact on quality of life, the OHIP-14 questionnaire, a valid and reliable instrument that assesses different domains of oral health, was used. The questionnaire was administered before surgery and two months after the completion of rehabilitation. Data analysis was performed using SPSS v.20 and R v.4.0.5 software, calculating mean OHIP scores, standard deviation, confidence intervals, and effect sizes to assess the magnitude of differences.

The results indicated a significant improvement in the patients' quality of life after implant-prosthetic rehabilitation. The OHIP-14 score decreased from 29.64 (SD = 12.12) before the intervention to 22.18 (SD = 11.27) after rehabilitation, suggesting considerable improvement. All seven domains of the OHIP scale showed significant reductions, showing that the positive impact of the intervention was widespread across all aspects assessed.



**Figure 9. OHIP score before and after implant-prosthetic rehabilitation (Wilcoxon Test, p = 0.000)**

The detailed analysis revealed that the greatest improvements were seen in the areas of difficulty pronouncing words, impaired taste and severe pain. For example, pronunciation difficulties decreased from an average score of 2.09 to 1.44, and severe pain decreased from 2.14 to 1.40. These significant changes indicate that the patients experienced a notable improvement in the ability to speak clearly and reduced pain, which contributed to an improved quality of life.

The study also showed that, in general, there were no significant differences between men and women, between urban and rural patients, or between those with secondary and higher education, in terms of improvement in quality of life after implant-prosthetic rehabilitation. However, women reported slightly higher scores than men after the second assessment, which may suggest different sensitivity to the intervention.

**Table 12. Association between gender, residential environment, completed education and OHIP score at first measurement**

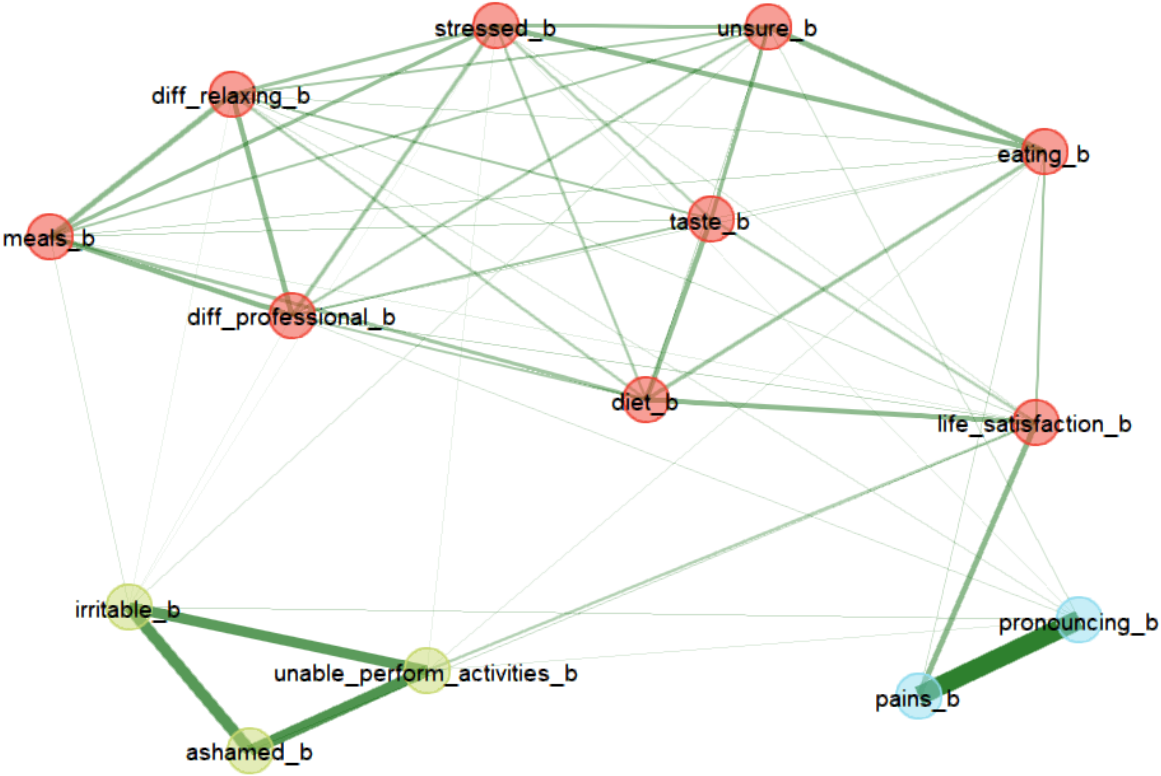
		N	Mean	Std. deviation	t	df	Mean difference	95% CI	
Gender	Masculine	45	28.27	12.43	-.970	114	-2.24	-6.82	2.34
	Feminine	71	30.51	11.92					
Residency	Urban	78	29.26	11.88	-.484	114	-1.16	-5.93	3.60
	Rural	38	30.42	12.73					
Level of education	Secondary education	41	31.12	11.12	.975	114	2.30	-2.37	6.96
	Higher education	75	28.83	12.63					

**Tabelul 13. Asocierea dintre gen, mediu de rezidență, studii absolvite și scorul OHIP la a doua măsurătoare**

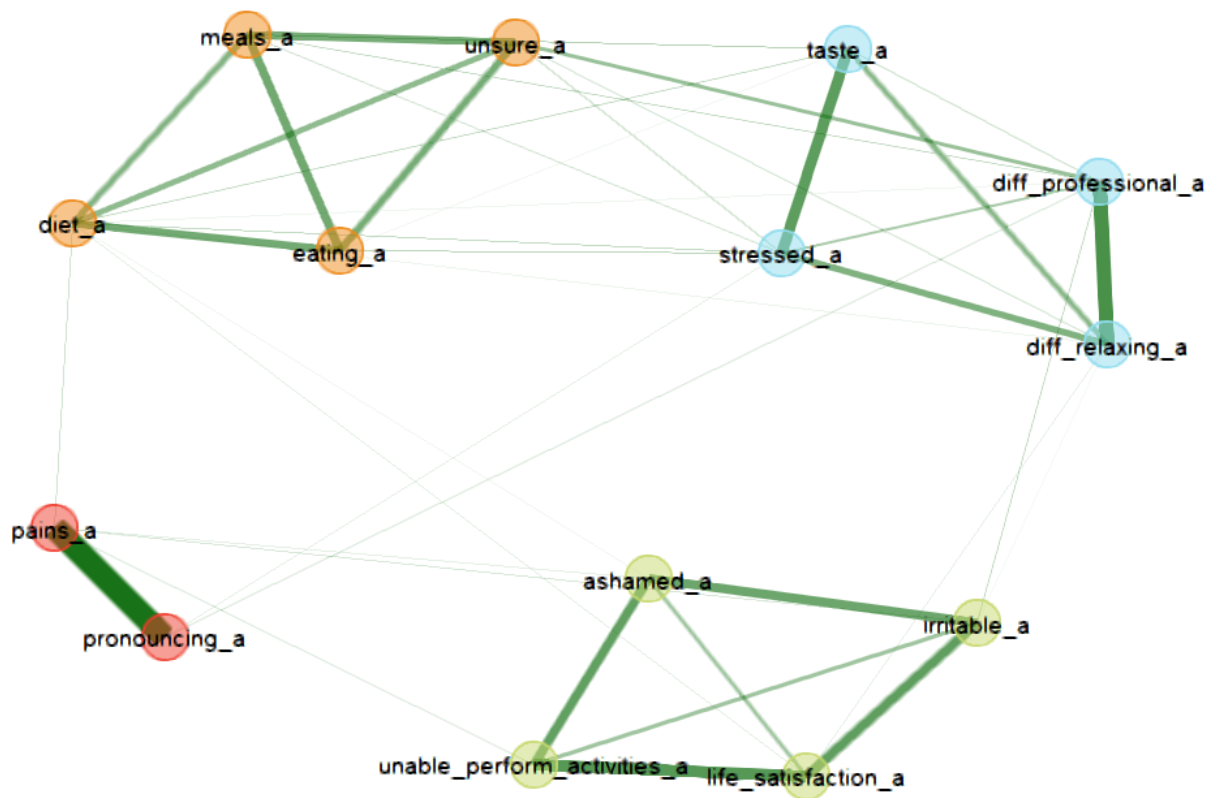
		N	Mean	Std. deviation	t	df	Mean difference	95% CI	
Gender	Masculine	45	19.56	9.95	-2.023	114	-4.29	-8.49	-0.09
	Feminine	71	23.85	11.81					
Residency	Urban	78	21.36	10.48	-1.126	114	-2.51	-6.92	1.90
	Rural	38	23.87	12.73					
Level of education	Secondary education	41	22.02	10.49	-.110	114	-0.24	-4.60	4.11
	Higher education	75	22.27	11.75					



Network analysis revealed strong associations between OHIP items both before and after rehabilitation, indicating that physical and psychological discomfort were strongly related to patient satisfaction. After rehabilitation, two distinct clusters were formed, one related to food and diet, and the other to stress and occupational difficulties, suggesting a diversification of patients' perceptions according to specific post-treatment experiences.



**Figure 10. Network analysis of OHIP items before implant-prosthetic rehabilitation**



**Figure 11. Network analysis of OHIP items after implant-prosthetic rehabilitation**

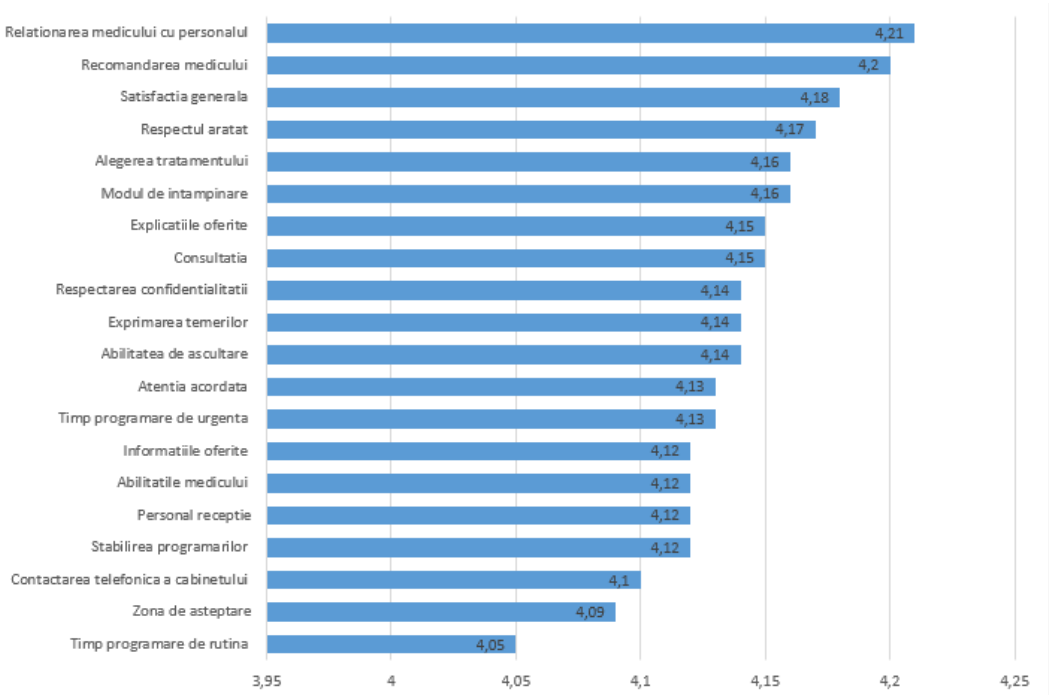
In conclusion, implant-prosthetic rehabilitation has proven to be effective in significantly improving the quality of life of patients. This reduced pain and discomfort, improved oral functionality and increased overall patient satisfaction. The study highlights the importance of ongoing monitoring and tailored approaches to maximize the benefits of this procedure and address potential complications. It also suggests the need for further research with larger samples and a long-term evaluation to confirm and extend these results.

**Chapter 8. Study 3. Study on patient satisfaction as a measure of the quality of oral rehabilitation dental services**

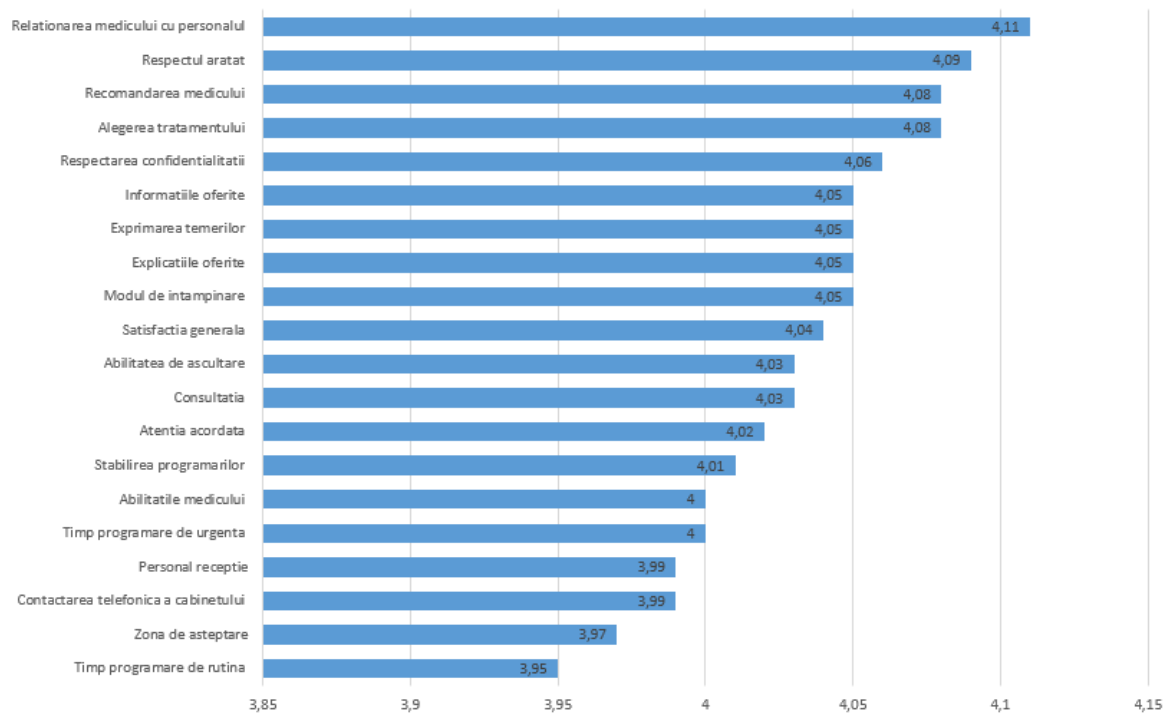
Patient satisfaction is an essential concept in medical practice, having a major impact on the quality of services and addressability of patients. This study examines patient satisfaction with oral rehabilitation dental services, focusing on the differences between the public and private systems.

The main aim of this study was to identify the factors that influence patient satisfaction and to highlight the differences between public and private services. The study included 200 patients from Sibiu County, equally divided between the two systems. The questionnaire used, the Dental Practice Questionnaire (DPQ), assessed various aspects of the patient experience, including access to services, practitioner skills and interactions with staff.

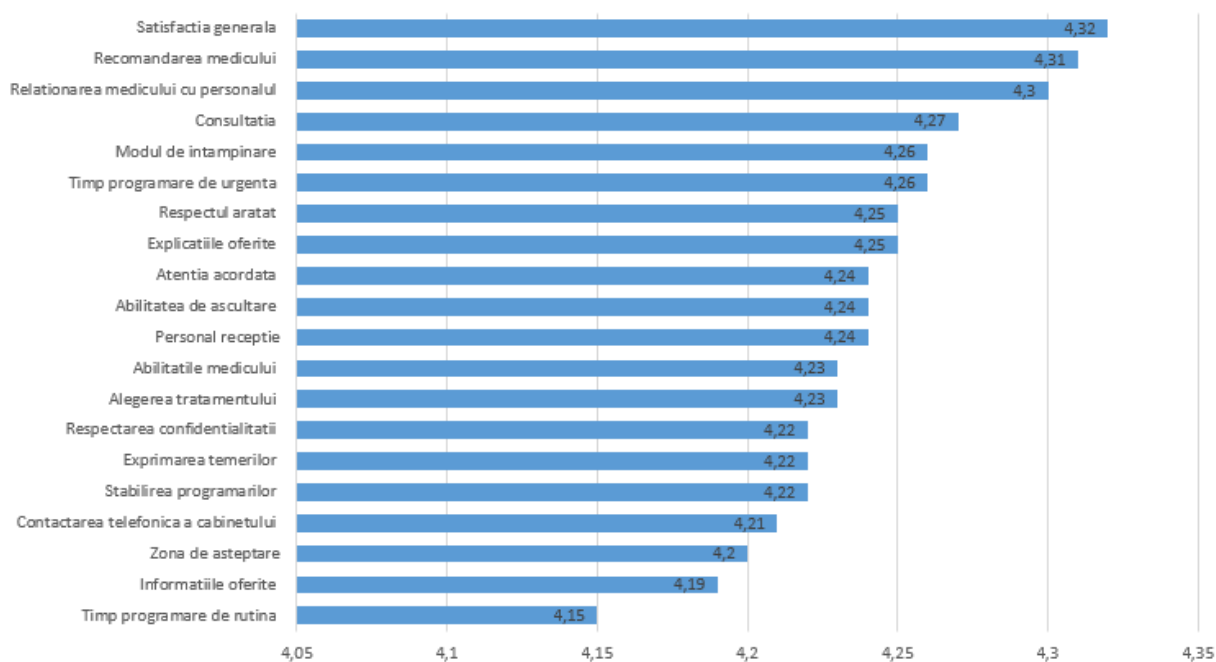
The results of the study showed that patients in the private sector reported higher levels of satisfaction compared to those in the public sector. The highest satisfaction scores were related to the communication between the dentist and the staff, the respect shown by the dentist and his ability to take the patient's opinion into account. Conversely, the lowest levels of satisfaction were recorded for telephone access to the practice, comfort of the waiting area and time required for routine appointments.



**Figure 13. Mean scores of responses to individual DPQ items in total**



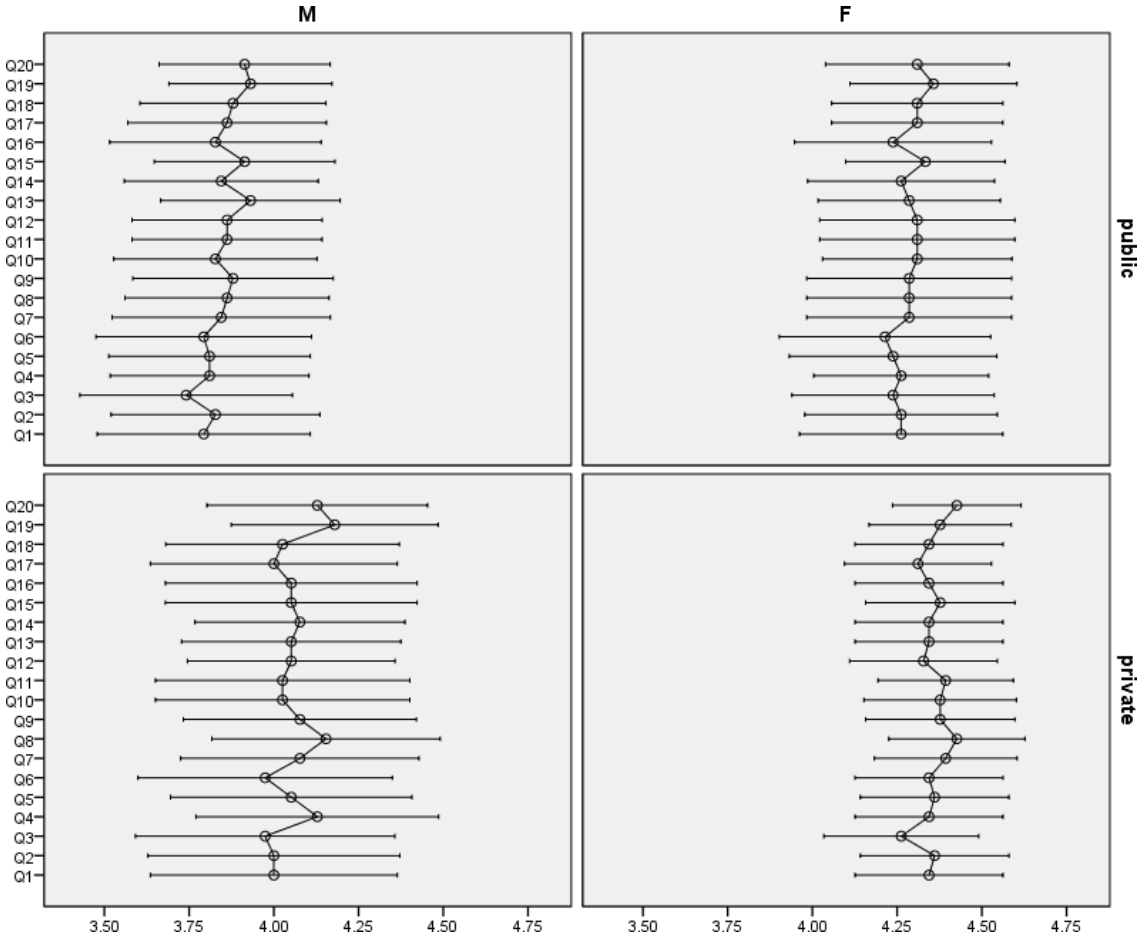
**Figure 14. Mean scores of responses to individual items in the DPQ for the public system**



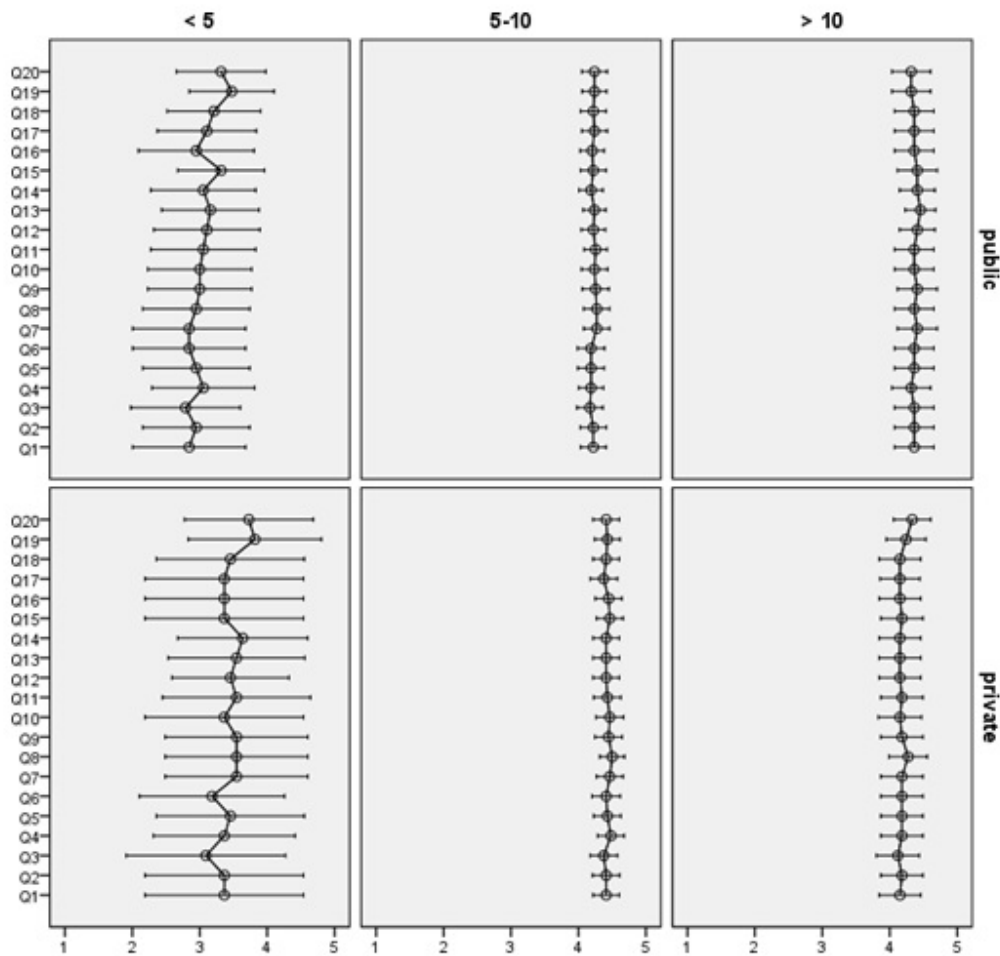
**Figure 15. Mean scores of responses to individual items in the DPQ for the private system**

Socio-demographic analysis revealed that urban patients and those with higher education reported higher levels of satisfaction. Also, patients who attended the same office for more than five years had significantly higher satisfaction scores compared to those who visited the office for a shorter period.

In terms of gender differences, women reported higher levels of satisfaction than men in both sectors. These differences were significant in the public sector, where men gave lower scores on how to make an appointment, communication with the doctor and tendency to recommend the dentist.



**Figure 16. Mean score and 95% CI for individual items in the public and private sectors, by gender**



**Figure 17. Mean score and 95% CI for individual items in the public and private sector according to the time of attending the same office**

Significant differences between the two systems were also highlighted by regression analysis, which identified the essential items that influence overall satisfaction and the tendency to recommend the dentist. In the private sector, the determinants of satisfaction included the promptness of consultations and the quality of explanations provided by the doctor, while in the public sector, the focus was on the accessibility of services and the respect shown by staff.

**Table 17. Regression models**

	Q8		Q20			
	M1 (Total)	M2 (Public)	M3 (Private)	M4 (Total)	M5 (Public)	M6 (Private)
<b>Q1</b>	NS	NS	NS	NS	0.829 (0.006)	NS
<b>Q2</b>	NS	NS	NS	0.364 (0.006)	0.767 (0.000)	NS
<b>Q3</b>	NS	NS	NS	NS	NS	NS
<b>Q4</b>	0.126 (0.028)	0.111 (0.050)	NS	NS	NS	NS
<b>Q5</b>	NS	0.217 (0.018)	NS	NS	0.435 (0.050)	NS

<b>Q6</b>	NS	0.157 (0.042)	NS	NS	0.372 (0.047)	NS
<b>Q7</b>	0.845 (0.000)	0.852 (0.000)	0.959 (0.000)	NS	NS	NS
<b>Q9</b>	NS	0.260 (0.000)	NS	0.221 (0.045)	NS	0.488 (0.031)
<b>Q10</b>	0.212 (0.004)	0.390 (0.000)	NS	NS	NS	NS
<b>Q11</b>	NS	NS	NS	0.430 (0.000)	0.344 (0.036)	NS
<b>Q12</b>	NS	NS	NS	NS	0.264 (0.050)	0.364 (0.048)
<b>Q13</b>	NS	NS	NS	NS	NS	NS
<b>Q14</b>	NS	NS	NS	NS	NS	NS
<b>Q15</b>	0.136 (0.018)	0.341 (0.000)	NS	NS	NS	NS
<b>Q16</b>	NS	NS	NS	NS	NS	NS
<b>Q17</b>	0.136 (0.018)	NS	0.214 (0.008)	NS	NS	0.700 (0.010)
<b>Q18</b>	0.326 (0.003)	0.564 (0.000)	NS	0.379 (0.035)	0.450 (0.014)	NS
<b>Q19</b>	NS	NS	NS	NS	0.829 (0.006)	NS
<b>R<sup>2</sup></b>	0.971	0.993	0.956	0.901	0.943	0.892
<b>p-val.</b>	0.000	0.000	0.000	0.000	0.000	0.000

The discussions in this study highlighted the importance of improving services in the public sector to align satisfaction levels with those in the private sector. Physician experience and superior infrastructure in the private sector have been shown to significantly contribute to increased patient satisfaction.

In conclusion, this study highlighted significant differences in patient satisfaction between public and private dental health systems. The results suggest the need for measures to improve public services, including ongoing staff training and infrastructure improvements, to ensure a superior patient experience. These measures could contribute to reducing the differences in satisfaction and increasing the addressability of patients in the public system.

## **Chapter 9. General conclusions and proposals**

The oro-dental health status of the Romanian population is at a low level, evidenced by the high incidence of infectious pathologies in the field of Oral and Maxillo-Facial Surgery. The first study showed that over 30% of the cases treated at the O.M.F. Surgery Clinic. Sibiu in the period 2018-2022 were infectious. A detailed analysis of patient data was performed, including sex, age and environment of origin, correlating the occurrence and evolution of infectious pathologies with various systemic pathologies and evaluating the evolution of patients according to the duration of hospitalization and the type of antibiotics used. To improve oral health at the national level, strategies are needed that include education and awareness of the importance of oral hygiene and the implementation of prevention programs and accessible dental services for vulnerable groups.

The second study highlighted the negative consequences of tooth loss and the benefits of implant-prosthetic rehabilitations on patients' quality of life. Using the OHIP-14 questionnaire before and two months after surgery, a significant improvement in quality of life was demonstrated in all areas analyzed. Implant-prosthetic rehabilitation should be the first therapeutic option in the treatment of edentulousness, and dentists should actively promote this treatment, explaining to patients the advantages and clear evidence of improved quality of life.

The third study compared patient satisfaction with public and private medical services. The results showed significant differences, with an advantage of the private system. Overall, patient satisfaction was favorable, but there is room for improvement. It is crucial for health care providers to understand the factors that influence patient satisfaction in order to implement actions that can increase this satisfaction and increase addressability to oral rehabilitation medical systems, whether public or private.



## **Chapter 10. Originality and innovative research contributions**

The present research makes significant contributions to the scientific and medical community in Romania, realizing for the first time a series of studies with a major impact in medical practice. The originality of this research resides in the diversified methodology used, from the exploitation of existing medical databases, to the conduct of surveys based on questionnaires. Of the three studies, two were also conducted in the private medical system.

Our study is a pioneer in Romania, following the serious consequences of a poor oro-dental health status, especially in the case of infectious pathologies and other associated systemic conditions. We analyzed the incidence of these pathologies in Oral and Maxillofacial Surgery, relating them to socio-demographic factors, therapeutic conduct, case evolution and possible complications.

Also, the study on the quality of life of implanto-prosthetic rehabilitated patients is the first of its kind carried out at the level of the population in Romania. Its results highlighted the factors that significantly influence the evolution of quality of life, providing valuable guidelines for future dental practice.

Another previously unexplored aspect in Romania was patient satisfaction with oral rehabilitation dental services. Our study measured this satisfaction by comparing public versus private services. We identified the main factors that influence patient satisfaction and proposed measures that can be adopted to increase this satisfaction and addressability to dental services.

Our research opens new perspectives for continuous monitoring and the initiation of new studies in the field, thus contributing to the improvement of the oral health of the Romanian population.

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