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Institute of Doctoral Studies

Doctoral School – Medicine

**Research on increasing the efficiency of
the Emergency Dental Office of the
Emergency Room within the County
Clinical Emergency Hospital of Sibiu**

SUMMARY OF THE PhD THESIS

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TABLE OF CONTENTS

INTRODUCTION	9
MOTIVATION FOR CHOOSING THE RESEARCH TOPIC	10
<u>PART I – PRESENTATION OF THE RESEARCH BACKGROUND –</u>	
ACTUAL STATUS OF KNOWLEDGE	13
Chapter 1. The health system	14
1.1.Definition.....	14
1.2.Components.....	14
1.3.Objectives.....	14
1.4. Legal framework for the operation of emergency dental practices.....	15
Chapter 2. Efficiency, health care quality.....	16
2.1.Efficiency.....	16
2.2.Quality.....	17
2.3.Dimensions of health quality.....	18
2.3.1.Professional quality.....	18
2.3.2.Total quality management	19
Chapter 3. Patient satisfaction.....	22
3.1. Correlations of satisfaction.....	24
3.2. Individual characteristic of patients.....	24
3.3. Mental and psychological health of patients.....	24
3.4. Attitude and expectation	25
3.5. Capacity to respond to the expectations of the population.....	25
Chapter 4. Dental anxiety.....	34
<u>PART II – PERSONAL CONTRIBUTIONS</u>	36
Chapter 4. Presentation of the research framework	37

4.1. Research hypotheses.....	37
4.2. Aim and objectives of the research.....	37
4.3. General methodology of the research.....	38
Chapter 5. History of the dental emergency office in Sibiu.....	41
Chapter 6. <i>Study I</i> Epidemiological data regarding the dental emergency office within the Emergency Room – SMURD of the County Clinical Emergency Hospital in Sibiu.....	46
6.1. Introduction.....	46
6.2. Aim and objectives.....	47
6.3. Materials and methods.....	47
6.4. Results.....	48
6.5. Discussions.....	74
6.6. Conclusions.....	80
Chapter 7. <i>Study II</i> Study on satisfaction and addressability of patients presenting in the dental emergency office within the Emergency Room – SMURD of the County Clinical Emergency Hospital in Sibiu.....	82
7.1. Introduction.....	82
7.2. Aim and objectives.....	82
7.3. Materials and methods.....	83
7.4. Results.....	84
7.5. Discussions.....	89
7.6. Conclusions.....	96
Chapter 8. <i>Study III</i> Study of the anxiety of patients presenting in the dental emergency office within the Emergency Room – SMURD of the County Clinical Emergency Hospital in Sibiu.....	99
8.1. Introduction.....	99
8.2. Aim and objectives.....	101
8.3. Materials and methods.....	101
8.4. Results.....	103
8.5. Discussions.....	105

8.6. Conclusions.....	111
Chapter 9. Study IV Study on the needs of the emergency dental service from the perspective of the professionals working in this field	113
9.1. Introduction.....	113
9.2. Aim and objectives.....	114
9.3. Materials and methods.....	114
9.4. Results... ..	115
9.5. Discussions.....	121
9.6. Conclusions.....	122
Chapter 10. General conclusions and suggestions	126
Originality and innovative contributions of the research	128
Future directions for research	129
Research limits	129
BIBLIOGRAPHIC REFERENCES	131
ANNEXES	139
Annex 1. Index of tables and figures	139
Annex 2. Questionnaires used in the present studies	145
Annex 3. Agreement of the Legal Committee of the County Clinical Emergency Hospital of Sibiu	155

THE PhD THESIS contains 153 pages, an iconography consisting of figures 69 (photos and graphics) and 29 tables.

The thesis is structured in 3 main parts: general part, personal research and the bibliography.

THE BIBLIOGRAPHY includes 91 references from the specialized literature.

KEYWORDS:

- Emergency Room (ER), Mobile Emergency Service for Resuscitation and Extrication (SMURD)
- Dental emergency office
- Efficiency

INTRODUCTION

In Romania, due to the type of health system we use, there is a large addressability of the population to the public emergency medical service, and consequently the primary health services are disadvantaged. One of the emergency medical branches, which the Emergency Room structures within the county and regional hospitals are now obliged to include, is the emergency dental service. These emergency dental offices existed in all Romanian counties long before 1989, but most of them were not developing their activity within the emergency hospitals. In the county seats, dentistry was practiced in a polyclinic with grouped offices, completely autonomously of the county hospitals present at the moment in Romania. As a rule, there was an office in the dental polyclinics that operated on a permanent basis, and the dentists in the polyclinic were obliged to provide a 24-hour service by rotation. During this 24-hour on call shift, patients with acute dental pathologies and minor traumas involving structures of the dentomaxilar system usually presented.

After 1993, these grouped offices were the first to be privatized, and the doctors employed in these structures rented or bought the offices, with the corresponding equipment at that time. Dental polyclinics remained functional in this new form, but the Public Health Directorate, in whose jurisdiction they remained until privatization, could no longer require physicians to provide 24-hour on call shift. Consequently, one by one, the emergency dental offices disappeared, or remained without doctors or funding.

With the publication of Order no. 1706 of 2 October 2007 on the management and organization of Emergency Rooms and Departments, the emergency hospitals have the obligation to establish dental practices to ensure the emergency of acute dental pathologies. Unfortunately, not until the beginning of 2016, all emergency hospitals are able to comply with this law for objective reasons. In most cases, the County Council, the new financier of these structures, manages to establish them, but does not find physicians willing to provide the 24-hour on call shift (minimum, of 5 doctors), perhaps due to the lack of financial motivation. In some counties, there are newly established, fully equipped offices, which have been closed for 2 or 3 years (Braşov), the equipment being morally degraded. There are hospitals that have organized competitions for the position of dental physician for 4 or 5 times, but no

one presented. Judging by the number of patients addressing this service, in the hospitals with such offices, their presence is supported and justified. Moreover, in university hospitals dealing with the training of students in dentistry faculties, there is a need imposed by the curriculum that obliges the study of a branch of dentistry called “emergency in dental care”.

Few physicians practicing emergency dentistry in the Emergency Rooms do not work according to single medical protocols, indispensable in an emergency service and do not have the professional capacity to provide all emergency services because there is no training required for some surgical operations, specific for oral and maxillofacial surgery. Dentistry, which is a liberal profession, was the first to have experienced a highly accelerated privatization process since 1989, the only remaining state-owned dental offices being the emergency offices, the dental offices belonging to schools, and some within the remaining non-privatized companies. Therefore, the opportunity to research the reasons why this service is not working properly is created, why professionals are not interested in the development of this branch of dentistry and to discover whether this service is indispensable indeed, to a community such as Sibiu County. The question arises as to whether a series of postgraduate courses, such as the Master’s, should be established, by which the graduate doctor to acquire certain medical protocols and deep knowledge of emergency surgeries in oral surgery, maneuvers which, according to the law, he should practice if working in a dental emergency service.

This paper aims at evaluating the problems faced by the emergency dental office within the Emergency Room of the County Clinical Emergency Hospital in Sibiu and at attempting to make it more efficient by suggesting pertinent solutions based on the results of the research.

PART I
PRESENTATION OF THE RESEARCH FRAMEWORK
CURRENT STATUS OF KNOWLEDGE

The first part of the paper consists of 4 chapters dealing with theoretical notions regarding the placement of these types of services within the current legislative framework, notions regarding the medical quality, efficiency and satisfaction in the medical services provided.

In **Chapter 1**, entitled “**Health System**”, there are presented some fundamental notions regarding the definition of the health system, its components, the objectives aimed at by this system in general and, last but not least, its way functioning in Romania. The legal framework of the functioning of the emergency dental office within the counties clinical emergency hospitals is also presented.

Chapter 2, entitled “Efficiency and quality in the medical field”, describes these two concepts in detail: definitions, concepts, health quality dimensions, professional quality and total quality management.

In **Chapter 3**, called “**Patient Satisfaction**”, there is defined the concept of satisfaction of patients, recipients of medical services; Descriptions of the notions of satisfaction correlations, individual patient characteristics, mental and psychological health of patients, attitudes and expectations, and the ability to respond to the expectations of the population are also provided.

Chapter 4, titled “Dental Anxiety” - presents some basic notions of dental anxiety in terms of the fear to undergo dental treatments. Its importance regarding the addressability for this type of dental office is also presented.

PART II

PERSONAL CONTRIBUTIONS

Research hypotheses

- Assessing and monitoring the activity of the emergency medical service in general can provide valuable data on the dynamics of healthcare in a community as a whole, and is an important indicator for the future directions for its development. We can also draw conclusions on the pathologies the Sibiu community is facing, on the basis of which we can develop and streamline this system by suggesting changes to the legislation in force.
- The human resource necessary for the proper functioning of this service can also be adjusted to meet the problems and peculiarities that our community is facing.
- The epidemiological data from this service, compared to other emergency medical services from other types of communities, in relation to the social, demographic and economic factors, can guide us towards the development of medical specialties at the expense of others, so that we come up with solutions to the health problems of the local community.
- Unfortunately, in Romania, we have too little data about the activity of dental emergency services in our country, perhaps because it is a recent law (2006) that legitimizes this type of emergency. The centralized electronic database has not been present in our hospital until 2010.
- At the level of other Community and non-EU countries, there are solid studies on the reasons for the addressability in this service, such as dental anxiety, health education and the socio-economic level of the country.
- The level of anxiety present in the patients presenting in the dental emergency service of Sibiu County Clinical Emergency Hospital can provide us with data from which we can understand the epidemiological dominance of some diagnoses in relation to others.

The aim and objectives of the research

The aim of the research is to improve the efficiency of the emergency dental office within the Emergency Room of the Sibiu County Clinical Emergency Hospital, based both on an objective assessment of the current situation of this system, and of

the perception of patients and professionals in this health system. On the basis of the conclusions obtained, I will make suggestions in order to streamline the emergency dental service of Sibiu County Clinical Emergency Hospital and to replicate/implement the recommended organizational model at national level.

Research objectives are:

- Assessment of the activity of the dental emergency office of the Sibiu County Clinical Emergency Hospital.
- Assessment of the patients' satisfaction presenting in the emergency dental office within the Emergency Room-SMURD of Sibiu County Clinical Emergency Hospital.
- Assessment of the anxiety of patients presenting in the dental emergency office of the Emergency Room-SMURD of Sibiu County Clinical Emergency Hospital.
- Analysing the needs of emergency dental service from the perspective of professionals employed in this system.

The complexity of the research subject determines the need to use a research methodology that brings together a set of methods, techniques, tools and research procedures. In order to achieve the objectives of this research, I have used several qualitative and quantitative methods in the four studies.

Study I is an observational, retrospective, descriptive study accomplished by the analysis of the electronic database of Sibiu County Clinical Emergency Hospital "AtlasMed". This study is a retrospective one and includes data on the activity of the emergency dental office within the Emergency Room-SMURD. The study ranged from January 2011 to December 2015. This study included 32,188 patients. Information such as age, gender, address, time of arrival, waiting time, diagnosis, treatment and medical information was analysed in order to obtain real data on the dynamics of this service over the above-mentioned period of time.

Objectives:

- Identifying the volume of patients presenting in the emergency dental office, both quantitatively and qualitatively;
- Identifying the socio-demographic typology of patients;
- Identifying and hierarchizing the emergency pathology and diagnoses faced by the patients of the emergency office;
- Evaluating certain correlations between pathologies and various factors present in the study.

After analysing the data, it was found out that out of the total number of 32165 patients, the number of male patients presenting in the emergency dental office was 13.4% more than female patients, and the urban patients were in higher percentages, by 36.2% % than the rural patients. The average number of patients/office was 536 ± 62.55 patients/month, and the average per day was about 18 patients, while the average patient age was approximately 38 years ± 19.02 . Conclusions: The age of addressability in the Sibiu dental emergency service drops significantly over the 5 years of the study and the months with very high activity according to the study were December, January and August. The results were compared with similar data present in the literature about similar centers in Romania, the centers in Bihor County and Mureş County. It was found that the average number of patients per month in Sibiu is similar to that in Mures and twice as high as in Bihor.

According to a similar retrospective study of only two years (2011-2012), of the patients who presented in the emergency dental office in the city of Oradea, 63% were from the urban area and 37% from the rural area. Gender distribution was: 54% males and 46% females.[44] In the Târgu-Mureş emergency dental office, the percentages were completely reversed, 47% were from urban area and 53% from rural areas, while the gender distribution was in favour of the female gender, 62%, and 38% for the male gender.[4]

In Sibiu County, during 2012-2013, the average number of cases per month was $M = 511.66 \pm 58.89$, in Bihor centre, the average was $M = 194.87 \pm 29.05$, and in Mureş centre was $M = 534,29 \pm 130,85$. From the point of view of the number of patients per month, there is a greater resemblance to Mures County, but the number of cases, regarding the evolution in time, is more constant in Sibiu, the evolution being similar to the dental emergency office in Oradea.

Study II represents the analysis of the results following the application of a self-administered satisfaction and addressability questionnaire to patients who addressed the emergency dental office within the Emergency Room-SMURD during September 1, 2016- October 30, 2016. The source of the instrument used was a questionnaire applied by the National Health Service (NHS) in England and Wales.[35,36,37,38] This was applied in England and Wales during March 2006 -

October 2006, following the legal amendments regarding the conditions of admission of dentists to the NHS. The questionnaire was applied to those who addressed the dental emergency service in several areas of London. [35,39,40,41]

The questionnaire was designed to have two main parts: a part of addressability and a part to verify the satisfaction level of the patients presenting in this service. The purpose of the study to which the questionnaire was applied was to determine the type of patient addressing the dental emergency offices in the Lambeth, Southwark and Lewisham areas.[35] The questionnaire explores several features and views of the patient: reasons for presentation, registration data, knowledge of this emergency service, satisfaction with the services provided, preferences for the future development of the service etc.[35] The questionnaire was validated on a number of 20 subjects not included in the study.[42,43] In addition to the results on patient satisfaction, this study provides data on the typology of the patients presenting in the dental emergency office. The questionnaire applied in this study (study II) is adapted after the aforementioned, focusing on certain questions characteristic of the patients in Romania.[44,45] The study complied with the ethical norms of the scientific research, the research being approved by the Ethics Commission of Sibiu County Clinical Emergency Hospital.

The statistical analysis was performed using the IBM SPSS Statistics Program. For data analysis, descriptive statistics, comparisons and correlation studies with other similar studies were carried out.

According to the results, 65% of the patients declared they were very satisfied with the treatment provided, 96% said they were satisfied with the attitude of the staff towards them and 91% said they had confidence in the medical staff. A fairly high percentage (40%) said that the office equipment could be greatly improved. The conclusion of this study is that the dental emergency office is highly appreciated by the patients and the doctors are trying to cope with the increased addressability of the office, despite the precarious equipment.

Study III represents the application of the anxiety test to patients who presented in the dental emergency service of the County Clinical Emergency Hospital of Sibiu. The test consists of the State-Trait Anxiety Inventory (STAI) with the two present forms: STAI-state, which measures anxiety as the state of the patients that may occur in certain anxiogenic situations and STAI-trait, which measures anxiety as

a general feature of behaviour. This instrument is currently used on a very large scale, being considered as a valid and quality instrument. Since the 1960s, various models have emerged to interpret anxiety as a state and a trait. The form of this questionnaire was reviewed and implemented by Spielberger in 1985. It is still Spielberger who, in 1985, mentions that the last form of STAI test was successfully applied and validated among students, high school students, military, convicted individuals, and on a wide variety of patients in hospitals.

The self-administered questionnaire, with its two forms, STAI-state and STAI-trait versions, contains 20 questions for each questionnaire, totalling 40 questions. The average time described in the literature to fill out this questionnaire is 10 minutes. It was applied to a group of 60 patients randomly selected from the patients who addressed the dental emergency office within the university dental clinic in Sibiu

The results obtained will be correlated with personal demographic data from the questionnaire, such as gender, age, origin, studies.

According to the results, an increase in the level of anxiety as state could be seen at the same time with the increase of the education level, and the level of anxiety as a trait is slightly more reduced in those with higher education than the rest. In males, the level of anxiety as a state regarding the dental interventions and the level of anxiety as a trait was significantly associated with the age of the respondents. The scores for anxiety as a state regarding the dental interventions have positively associated with anxiety scores as a personal trait. Over 70% of the values for STAI state, respectively STAI TRAIT were above the average and significantly higher than the validated average values for the Romanian population.

Study IV represents the interpretation of a questionnaire applied to professionals working in 24-hour on call shift in the dental emergency office. The aim is to obtain data on possible problems and shortcomings in the functioning of this office, profession motivation, the possibility of practicing the profession with no constraints and freely, the desire for continuous professional development. I will compare the results obtained with data on similar studies from other countries and correlate it with the other studies in the present research. According to a study conducted in 2014 in the United States of America on substantial groups of dentists and their patients, there is a difference between the appreciation of patient satisfaction perceived by professionals and the real satisfaction reported by the patient.[84,85,86 , 87]

Thus, it appears that doctors present in this study are often more optimistic, declaring a patient satisfaction greater than it is in reality, perhaps because of a slight professional self-evaluation[84] In contrast to this study, the results of this PhD study (study 4.2) show that at least in the emergency dental service of the Sibiu County Clinical Emergency Hospital, things are totally reversed: doctors tend to underestimate their professional qualities, reporting a lower level of satisfaction than the real satisfaction that emerges from study 2.

Another study conducted this time in Romania in 2014, on a representative sample of young dental practitioners from Pitesti, Bucharest and Craiova aims at accomplishing a profile of the dentist at the beginning of their career, concluding that the most important things, things that plead for a position in dental care are the financial security and the stability or safety of the job over time.[88,89,90,91]

Of these doctors, only 20% believe that they are paid according to the work done, the rest feeling themselves under-appreciated. 45% of these doctors consider this job to be quite demanding, and more than half would no longer choose the same career if they were to take it over.[88] It seems that the most unimportant thing young doctors consider is the existence of promotion opportunities. Evidence that the financial situation is most important is that 70% of the doctors present in the above-mentioned study would change the job for a difference in the amount of money between 600 and 1,200 euros per month.[18] It is interesting that the medical personnel working in the dental emergency office is satisfied with the financial reward received for the work done, which is not an easy one due to weekends and nights shifts.

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