

TO THE SCIENTIFIC DEPARTMENT
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JURY

Attached, I present: REVIEW

For the defense of the PhD thesis for the acquisition of the educational and scientific degree "Doctor" in the doctoral program "Orthopedic Dentistry," professional field 7.2. Dental Medicine

AUTHOR: Dr. Dimo Krasimirov Nedelchev, enrolled by Order of the Rector of MU – Varna No. R-109-468/ 03.11.2020.

TOPIC: " Research on the Changes Occurring in Speech and Masticatory Functions during Prosthetic Treatment "

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REVIEW

I. Brief Biographical Data for the Doctoral Candidate

Dr. Dimo Krasimirov Nedelchev was born on February 24, 1989, in Varna. In 2008, he graduated from Geo Milev Language High School in Dobrich. In 2014, he obtained a master's degree in dental medicine from the Medical University of Sofia. Since 2016, he has been a full-time assistant in the Department of Dental Materials Science and Prosthetic Dental Medicine at MU-Varna. In 2023, he acquired a specialty in prosthetic dental medicine.

II. General Characteristics of the Dissertation

The dissertation was discussed and proposed for defense at the Departmental Council of the Department of Dental Materials Science and Prosthetic Dental Medicine at Medical University "Prof. Dr. Paraskev Stoyanov" - Varna on 19.03.2024.

The dissertation of Dr. Dimo Nedelchev contains 182 pages and is illustrated with 32 tables, 61 figures and 3 annexes. 251 references are cited, of which 16 in Cyrillic and 235 in Latin.

The material is structured in several main sections.

III. Relevance of the thesis

The study of the relationship between maxillary defects and acoustic articulation is the basis of a number of studies in the foreign scientific literature. In Bulgaria, the topic is also gaining popularity, and the influences of removable dentures on speech function have mainly been addressed. The doyens of the Bulgarian dental school : Prof. Dr. Georgi Georgiev and Acad. Prof. Dr. Nikolay Popov have actively worked on this topic. Until now, the influence of single frontal maxillary defects and their prosthesis on the pronunciation of sounds in Bulgarian speech has not been studied. The evaluation of the masticatory function is a continuation of a topic developed at MU - Varna and the topic of the quality of chewing food and the shaping of the food bolus is developed again. Proper speech formation is a contemporary issue, as the success of any prosthetic treatment depends on it, especially for fixed constructions and for the treatment of single frontal defects of the maxilla.

IV. Evaluation of the Literature Review

The PhD student has logically constructed the literature review on several selected topics, which appear to be very significant from the content point of view: vocal function, speech mechanism, pathological processes in the larynx, instrumental methods for the study of pathological changes in the larynx, speech function, maxillary diastema, diagnostic modeling, the impact of prosthetics on speech function in the Bulgarian language in the treatment of single frontal maxillary defects, the impact of prosthetic treatment on masticatory function, methods for the study of

The literature review is a rich source of information, with well selected references. The findings from the literature review form the basis of the questions further explored in this thesis.

V. Assessment of aim, objectives and methodology

The purpose of this dissertation is to investigate the changes occurring in speech and masticatory function after prosthetic treatment of single frontal maxillary defects.

To achieve the stated aim, four tasks have been completed, to which two subtasks have been formed according to a third task.

The study included 731 observation units distributed across the four tasks:

Task 1 included 80 individuals in need of prosthetic treatment with non-removable constructs of single frontal maxillary defects.

Task 2 involves research on 149 diagnostic plaster models.

Task 3 analyses the change in speech function of 40 patients with single frontal maxillary defects, before and after their prosthesis.

Task 4 includes 462 patients prosthetized in the maxilla.

The research was initiated after the development and submission of documents and obtaining the Permission to Conduct from the Research Ethics Committee of the Medical University of Varna - Permission No. 116/28.04.2022, and after explicitly submitted the Notification to Start the Research.

After conducting the research on the four tasks, the results were subjected to statistical analysis.

VI. Evaluation of results and contributions

The results are presented by the different groups studied and the own data are discussed in the context of contemporary foreign research, taking into account statistical dependencies. The rich discussion enhances the scientific value of the work. The lack of discussion regarding the change in speech therapy indicators in Bulgarian speech before and after fixed prosthesis only proves the original character of the conducted research.

Among the most important conclusions are:

1. There was no statistical correlation between the age of the patients and the prevalence of those diagnosed with laryngeal pathology ($p=0.553$).
2. Speech is significantly affected in the presence of laryngeal defect.
3. The mean width of the MD in the female study group ($1.43 \text{ mm} \pm 0.24\text{mm}$) was smaller than that in the male group ($1.57 \text{ mm} \pm 0.78\text{mm}$).
4. Improvement was found in 30 out of 60 speech parameters at the mockup stage and this determined a good prognosis of the future construct for the repair of a single frontal maxillary defect.

I agree with the contributions formulated by the doctoral student, which are based on the fact that they are the result of the first in our country multifaceted multidisciplinary study of the impact of prosthetic treatment on masticatory and speech functions in the treatment of single defects in the maxillary front.

The contributions are theoretical and cognitive in nature and have great potential for practical application.

VII. Abstract

The abstract fully meets the requirements and reflects the most essential aspects of the thesis.

Three full-text publications have been submitted in connection with the dissertation, in which Dr. Nedelchev is the first author.

VIII. Conclusion

The dissertation work of Dr. Dimo Krasimirov Nedelchev on the topic " Research on the Changes Occurring in Speech and Masticatory Functions during Prosthetic Treatment " in terms of topicality, volume, applied methods and quality of the development, as well as the significance of the contributions meets the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria and the Regulations of MU - Varna for its implementation. In connection with all of the above, I give my confident positive assessment and recommend the scientific jury to award the educational and scientific degree "Doctor" in the scientific specialty "Orthopedic Dentistry", professional field 7.2. Dental Medicine to Dr. Dimo Nedelchev.

20.05.2024.

Varna

REVIEWER:

/Prof. Dr. Metodi Zahariev Abadzhiev, DMD, PhD DSc/

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