

STATEMENT

From Assoc. Prof. Dr. Miroslava Veselinova Yordanova- Chaprashikian, DMD, PhD

Department of Orthodontics, FDM- Plovdiv, Medical University of Plovdiv

Member of the Scientific Jury according to order No P-109-240/ 06.06.2022 of the Rector of
MU-Varna

Regarding: Acquiring of scientific and educational degree "Doctor, PhD"

Professional domain: 7.2 Dental medicine

PhD-Program: "Orthopedic Dentistry"

Author: Dr. Iliyana Georgieva Atanasova

Department of Orthodontics, Faculty of Dental Medicine, Medical University "Prof. Dr. Paraskev Stoyanov"- Varna.

PhD-Thesis: "Evaluation of individual indicators for orthodontic treatment of children with mixed and permanent dentition"

Scientific Supervisor: Assoc. Prof. Hristina Ivanova Arnautska DMD, PhD

Notes and commentary on the procedure and the PhD-student

Biography notes

Dr. Iliyana Atanasova was born in Varna in 1979. In 1999, she graduated with excellent grade from Medical College - Varna specialty Pharmacy with professional qualification -assistant pharmacist. In 2011, she graduated from Faculty of Dental Medicine at Medical University of Varna and acquired master degree in Dentistry. As the first of "Class 2011", she has been awarded with a "GOLDEN HIPPOCRATES" and Diploma "STUDENS OPTIMUS" – Prof. Dr. Slavcho Davidov for excellent accomplishments and high student achievement in the academic, scientific and creative activities of the class of 2011. In 2016 Dr. Atanasova started her post-graduate training in Orthodontics at MU-Varna. Since 2017, she is a full-time employed assistant professor at the Department of Orthodontics, FDM at MU-Varna. In 2020, Dr. Atanasova acquired a specialty in Orthodontics. In 2019, she was assigned a full-time PhD student in the Department of Orthodontics and was elected as administrative assistant of the Department of Orthodontics. Dr. Atanasova presents lectures and teaches students in practical classes of undergraduate program in Orthodontics for Bulgarian and English speaking students from the FDM-Varna. She also attended many courses for continuing professional development in Bulgaria, Australia, and Russia. She is fluent in English and Russian.

Regular member of the Bulgarian Dental Association, Bulgarian Orthodontic Society, Australian Dental Association, European Orthodontic Society. Dr. Atanasova is author and co-author of 20 publications and participated 22 national and international conferences and symposiums.

Notes and commentary on the documents

The set of materials provided to me related to the dissertation is complete and is in accordance with the Law on the development of academic staff in the Republic of Bulgaria and the regulations for its implementation, as well as with the Regulations of MU-Varna "Prof. Dr. Paraskev Stoyanov" for awarding with the scientific and academic degrees.

The dissertation was discussed and directed for public defense by the Department Council of the members of the academic staff of the Department of Orthodontics of the FDM, Varna in connection with Protocol No 49/18.05.2022 of Assoc. Prof. Dr. Hristina Ivanova Arnautska, PhD, Head of the Department of Orthodontics at the Medical University of Varna and the decision of the Faculty Council of the FDM under Protocol No 2/01.06.2022.

The PhD student has applied three full-text publications on the subject of the dissertation work and two participations in national and international scientific congresses.

The dissertation contains 138 pages, divided proportionally by chapters of which 40 pages of literature review, purpose and tasks – 1 page, own studies including material and methodology – 19 pages, results and discussion – 41 pages, conclusions and affiliations – 4 pages. The dissertation has been illustrated with 39 tables, 55 figures, 5 schemes and 16 application. The bibliographical references includes 161 literature sources, of which 7 in Cyrillic and 154 in Latin.

Relevance of the PhD-thesis

Of clinical significance for orthodontic diagnosis and treatment planning is the determination of the individual norm of morphological structures in the maxillofacial region. Knowledge of normal maxillofacial growth allows timely initiation of orthodontic treatment of discrepancies. The dissertation attempts to clarify whether the development of teeth in combination with the cervical vertebrae are good anatomical contenders for formulation of conclusions about the puberty period of growth in individuals. In the context of increasing acceleration and growth variations of children and adolescents, I believe that the topic of current dissertation is relevant and useful.

Characteristic and evaluation of the dissertation and contributions

Dr. Atanasova is familiar with the topic discussed in the dissertation. This is evidenced by the extensive literature review, which is specific and systematize data from the available scientific literature on: the periods and principles of growth of the facial skeleton; the main indicators related to the evaluation of dynamics of growth and development in children and adolescents. Scientific comments on the advantages, reliability and objectivity of the methods are also discussed. A special review is devoted to the methods of evaluation of dental and skeletal age in consideration with their reliability and accuracy in defining chronological age. The literature

review was finalized with the necessary analysis of the studied literature sources and justified the need for the dissertation scientific study and defying the purpose of it.

The purpose of the dissertation

The purpose of the dissertation is clearly formulated:- by examining individual indicators of the pubertal growth period to create a prognostic model on orthopanthogram for the initiation of orthodontic treatment. To fulfill the goal thus formulated, four tasks have been set.

Material and methods of the study:

From the basic and well-known individual growth indicators, the PhD-student sorted out to study the chronological age, dental and skeletal age, but referred to the Bulgarian population by approved methods as Demirjian, Willems, Baccetti. A target group of 320 children aged 7-17 years have been selected according to exact criteria. Radiological assessments of the mineralization of dental germs of permanent teeth and the maturation of cervical vertebrae on digital OPGs and TRG with a significantly large total number of measurements -6129 were carried out. The material on all tasks is sufficient in numbers and well documented. The methodologies of work are well described and illustrated. Statistical methods were correctly selected and pave the reliability of the results obtained.

Results: The results of the first task provided information on the Bulgarian population of children and adolescents for stages of their dental development relative to their chronological age. In addition, the results obtained from the two of the most widely- used methods of evaluation of dental age registered the degree and amount of the discrepancy with the actual chronological age. The results of a second task are also important due to a lack of sufficient current and contemporary information about the mean chronological age, at which the peak of puberty growth occurs in Bulgarian boys and girls in mixed and permanent dentition. Third and fourth tasks are focused on the second part of the purpose of the dissertation - creating a prognostic model on the OPG for determining the stages of puberty growth. The resulting data facilitates timely orthodontic planning. The mineralization stages defined by Demirjian method of the selected dental germs by the author were evaluated in comparison with the three stages of maturation of the cervical vertebrae by Baccetti as well as a correlation between them was identified. All of the results by the tasks set were generously illustrated with tables and figures.

The dissertation acquires a complete scientific appearance through the conclusions. They summarize for the practitioners the collected data about the individual indicators of puberty growth in boys and girls in mixed and permanent dentition. Important conclusions have been developed about the mineralization stages of certain teeth at the comparison with respective stages of skeletal maturation.

The significance and contributions of the scientific study can be assessed as original, scientifically theoretical and scientifically applied. This is because, on the one hand, for the first time in our country , a model is developed for determining the puberty period of growth on orthopanthogram, by assessing individual indicators of growth and development (contribution of an original nature), and on the other hand, guidelines are given for the practical work and

diagnostics of orthodontist. As significant scientific and applied contributions, I define the accuracy of Demirjian and Willems methods for assessing dental age in Bulgarians and making recommendations for their selection. A huge advantage in the orthodontic treatment is also the mean chronological age defined and outlined by the study at which the patients reach the growth peaks, influenced by different factors.

Personal participation of the PhD-student

The dissertation is a personal study, conducted by the PhD student as well as the resulting publications, in which Dr. Atanasova is an independent author. All research on tasks were managed with accuracy and diligence from the PhD student. The scientific study was distinguished by appropriate scientific language and style.

Abstract

The abstract of the PhD- thesis has been written on 44 pages. It corresponded to the content of the dissertation and was correctly structured.

Conclusion

The importance of the problem, the nature and volume of the dissertation provided on the topic "Evaluation of individual indicators for orthodontic treatment of children in mixed and permanent dentition" by Dr. Iliyana Georgieva Atanasova definitely revises and enriches the data on the pubertal development period of Bulgarian children aged 7-16 years. The scientific evidence provided for the mean chronological age outlining the onset of puberty, its peak and end in both genders is essential for the orthodontic treatment planning of skeletal and dentoalveolar discrepancies. The proposed reliable and easy method of assessing the growth potential on a routine diagnostic record such as orthopantomogram increases the effectiveness of the clinical practice of orthodontists.

The dissertation meets the requirements of the Law on development of the academic staff of the Republic of Bulgaria and the regulations for its implementation, as well as with the legal Regulations of MU-Varna. The materials provided and the results achieved in the dissertation is complete and is in accordance with the Law on the development of academic staff in the Republic of Bulgaria and the regulations for its implementation, as well as with the Regulations of MU-Varna for awarding with the scientific and academic degrees. The dissertation shows that the PhD student demonstrates in-depth theoretical knowledge and professional skills in the scientific field of Orthodontics, and skills for conducting scientific research.

In conclusion: I give a positive assessment of the dissertation with author Dr. Iliyana Georgieva Atanasova and I invite the esteemed scientific jury to award Dr. Iliyana Georgieva Atanasova, with the educational and scientific degree "Doctor" in the scientific specialty "Orthopedic Dentistry".

7th of July, 2022 City of Plovdiv

The Statement was prepared by:



Assoc. Prof. Dr. Miroslava Veselinova Yordanova-
Chaprashikian, DMD, PhD

