

## OPINION

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**Regarding:** the dissertation thesis for the award of PhD educational and scientific degree in the field of higher education 7. "Health and Sport", professional field 7.1. "Medicine", scientific specialty "Physiotherapy, Resort Science and Rehabilitation" prepared by **MD Detelina Damyanova Nedyalkova-Petkova**, PhD student at the Department of Physiotherapy, Rehabilitation and Thalassotherapy, Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

**Topic of the dissertation** "Therapeutic effectiveness of physical factors in early rehabilitation of patients with distortion of the talocrural joint"

**Scientific counselor:** Assoc. Prof. Mariana Mihaylova, MD, PhD

**The Opinion is issued on the following grounds:** by Order of the Rector № R-109-151/29.04.2024 of the Medical University "Prof. Dr. Paraskev Stoyanov"- Varna I have been appointed as an external member of the Scientific Jury of the dissertation of MD Detelina Damyanova Nedyalkova-Petkova.

This Opinion has been developed and submitted in accordance with the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Regulations for the Implementation of the Academic Staff Development Act, and the Regulations for the Development of Academic Staff at the Medical University /MU/-Varna.

### **Biographical data and professional qualifications of the applicant**

MD Detelina Damyanova Nedyalkova-Petkova was born on 29.04.1990 in the town of Shumen, where she graduated from the Natural and Mathematical High School "Nancho Popovich" in 2009.

MD Nedyalkova started her professional medical career in 2016 at the Center for Emergency Medical Services in Varna.

Since 2017, MD Detelina Damyanova Nedyalkova-Petkova has been appointed as a specialist doctor at the University Hospital "St. Marina" Varna EAD, and in 2020 as an assistant professor at the Department of Physiotherapy, Rehabilitation, Thalassotherapy and Occupational Diseases of MU-Varna. She teaches classes in Physiotherapy and Rehabilitation of medical students in Bulgarian and in English "Rehabilitation Therapist" - 1st, 2nd and 3rd academic year.

### **Significance and relevance of the studied topic.**

The dissertation work of MD Detelina Damyanova Nedyalkova-Petkova is addressing a topical problem concerning one of the most common pathologies in emergency medical care - ankle joint distortion, as well as the search, development, and introduction in the medical practice of methods for prevention, treatment and rehabilitation that have a multidimensional effect on the most important links in the pathogenesis of the disease.

For a full recovery and return to the usual way of life, everyday activities and social environment, the correct diagnosis and rehabilitation program are of fundamental importance. Adequate and timely rehabilitation is a guarantee for the success and the achievement of a significant improvement in the quality of life of the patients at the earliest stage of ankle joint distortion.

The dissertation of MD Nedyalkova-Petkova presents the currently known methods for the treatment of ankle joint distortion. The possibilities of operative and conservative treatment (medical and physiotherapeutic methods) are reviewed. Emphasis is placed on the treatment with a low-frequency electrostatic field using the Deep Oscillation method. Current global trends in influencing this pathology with various physical modalities are discussed in depth. The clinical

effectiveness of electrostatic field by Deep Oscillation method, PRICE protocol and their combined application in the early rehabilitation of patients with distortion of the talocrural joint is analyzed.

### **Structure of the thesis**

The dissertation of MD Detelina Damyanova Nedyalkova-Petkova is presented in 146 standard pages, in eleven adequately proportioned sections. It is illustrated with 33 figures, 20 tables and 10 annexes. The structure is in accordance with the requirements specified in the Regulations for the Development of the Academic Staff of MU-Varna.

### **Literature**

The literature review consists of 44 pages demonstrating a thorough knowledge of the issues discussed in the dissertation. The bibliography presented consists of 279 sources, of which 7 in Cyrillic and 272 in Roman alphabet.

### **Methodology and study design**

A total of 120 individuals of both sexes, aged between 18 and 50 years, with clinical manifestations of ankle joint distortion with a symptom duration of no more than 7 days, who met specific inclusion criteria were enrolled in the study. Patients were randomly assigned to three groups of 40 participants each. Patients were monitored immediately before the start of the treatment, at the end of the treatment (day 7) and on day 21. In order to meet the objectives, the necessary data was studied and analyzed: anamnestic data (pain, edema, stiffness, etc.), functional status (inspection, palpation, specialized manual tests, cantimetry, goniometry), the patients were asked to fulfill a short form of the questionnaire: The foot and ankle disability index and to rate the pain using the Visual analog scale.

The PhD student has chosen appropriate statistical methods giving a complete and reliable evaluation of the data, consistent with the purpose of the presented study.

The results meet the set objectives. The thesis has synthesized and illustrated very well with tables and figures the distribution of patients in the three groups and the results obtained.



The baseline values analysis of the indicators reveals that there is no difference between the three groups, resulting in their homogeneity in comparison to each other.

The results obtained from the study show that DO therapy in combination with standard care "PRICE", provide complexity from the very early stage of the treatment of the condition until day 21. The values obtained were statistically significant and proven by examining the set parameters for follow-up.

The discussion of the findings highlights their significance by comparing them with other studies in world literature.

Finally, the most important results of the study are summarized.

### **Contributions and Relevance of the Study for Practice**

Six formulated conclusions have been synthesized, which provide a summary of the results of the study and fully meet the set goals and objectives. The dissertator has indicated three theoretical-methodological and four practical-applied contributions of the dissertation work for Bulgaria.

### **Abstract and publication activity**

There are 3 full-text publications related to the topic of the thesis submitted by Dr. Detelina Damyanova Nedyalkova-Petkova in periodical scientific publications.

The abstract is structured in accordance with the requirements, its content corresponds to the dissertation thesis, 20 tables and 29 figures are presented to illustrate the results obtained from the research.

### **Conclusion**

The dissertation thesis of Dr. Detelina Damyanova Nedyalkova-Petkova is methodologically sound, with a clearly formulated aim and objectives, with specific and well-founded conclusions and an actual contribution to science.

The submitted materials comply with all the requirements of the Law for the Development of Academic Staff of the Republic of Bulgaria, the Regulations for the Implementation of the Law and the corresponding Regulations of MU-Varna.

On the basis of the above Opinion, I confidently give my **positive assessment** of the conducted research and propose to the Honorable Scientific Jury to award the educational and scientific degree PHD to Dr. Detelina Damyanova Nedyalkova, in the scientific specialty "Physiotherapy, Resort Science and Rehabilitation".

Date: 21.05.2024

Stara Zagora

Signature.....

(Assos. Prof. Nedko Ivanov Dimitrov, MD PHD)

Заличено на основание чл. 5,  
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