

To the Chairman of the Scientific Jury, defined
by order № P-109-151/29.04.2024
of the Rector of the Medical University – Varna

REVIEW

By Prof. Dr. Dimitar Raykov, MD
Head of Orthopedics and Traumatology Clinic
UMBAL "Sveta Marina" - city of Varna

Regarding: Dissertation work, for the award of the educational and scientific degree "Doctor" in the field of higher education 7. "Health and sport", professional direction 7.1. "Medicine", scientific specialty "Physiotherapy, spa therapy and rehabilitation" prepared by the Dr. Detelina Damyanova Nedyalkova-Petkova, Postgraduate student at the Department of Physiotherapy, Rehabilitation and Sea Therapy, Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna

Dissertation topic "Therapeutic effectiveness of physical factors in early rehabilitation in patients with talocrural joint distortion"

Research supervisor: Assoc. Prof. Dr. Mariyana Mihaylova Krasteva-Ruseva MD.

The presented set of documents on paper and electronic media are in accordance with the regulations for the terms and conditions for acquiring scientific degrees and holding an academic position at MU-Varna. No plagiarism or evidence of plagiarism was found during the review of my submitted dissertation.

Biographical data and professional development

Dr. Detelina Damyanova Nedyalkova-Petkova was born on 29.04.1990 in the city of Shumen, where she completed her secondary education at the "Nancho Popovich" High School of Science and Mathematics in 2009. In 2016, she completed higher education in medicine with an educational and qualification Master's degree at MU-Varna. She acquired a specialty in "Physical and Rehabilitation Medicine" in 2021.

Dr. Nedyalkova began her professional medical career in 2016 at Center For Emergency Medical Aid city of Varna.

Since 2017, Dr. Detelina Damyanova Nedyalkova-Petkova has been appointed as a specialist doctor at UMBAL "St. Marina" Varna EAD, and in 2020 as an assistant at the Faculty of Sea Therapy, Physiotherapy and Rehabilitation at the Department of Physiotherapy, Rehabilitation, Sea Therapy and Occupational Diseases of the University of Varna. She leads classes in academic disciplines: Physiotherapy and rehabilitation of medical students of BEO and AEO, specialty "Rehabilitator" - 1st, 2nd and 3rd year.

Dr. Detelina Nedyalkova-Petkova has successfully completed courses in the field of Physical and Rehabilitation Medicine such as Deep Oscillation therapy- training course (2019) and

advanced workshop (2023), laser therapy (2023), electrodiagnostics and electrostimulation (2023).

Relevance and importance of the problem

Dr. Petkova's dissertation is focused to one of the most common pathologies in emergency medical care - distortion of the ankle joint (ankle sprain).

The search, development and introduction into medical practice of methods of prevention, treatment and rehabilitation, which have a multifaceted effect on the most important links in the pathogenesis of the disease, is an actual problem in modern medical practice.

For the full recovery and return to the usual way of life and functioning in everyday life and the social environment, the correct staging and rehabilitation program are essential. Adequate and timely rehabilitation is a guarantee of success and achieving a significant improvement in the quality of life of patients in the earliest stage of ankle sprain.

In Dr. Petkova's dissertation, the methods of treating ankle sprains known up to now are presented. The options for operative and conservative treatment (medicated and with physiotherapeutic methods) were considered.

The emphasis is on deep oscillation low frequency electrostatic field treatment. The current global trends for influencing this pathology with the various physical modalities are examined in detail.

An analysis of the clinical effectiveness of an electrostatic field using the deep oscillation method, the "PRICE" protocol and their combined application in the early rehabilitation of patients with talocrural joint distortion was made.

Structure, drawing-up and visualization of the dissertation work

The dissertation is presented in 146 standard pages, in eleven sections with adequate ratio, illustrated with 33 figures, 20 tables and 10 appendices. The structure is according to the requirements specified in the Regulations for the Development of the Academic Staff of MU-Varna.

The scientific work has the following structure: "Relevance of the problem" - 2 pages, "Literature review" - 44 pages, "Aim and tasks and hypotheses of the research" - 2 pages, "Materials and methods" - 10 pages, "Results" - 31 pages, "Discussion" - 11 pages, "Conclusion" - 2 pages, "Deductions" - 1 page, "Contributions of the scientific work" - 1 page, "Scientific publications and announcements related to the dissertation" - 1 page.

The bibliographic reference is up-to-date and covers 279 sources, of which 7 are in Cyrillic and 272 are in Latin.

Three full-text publications presented by Dr. Detelina Damyanova Nedyalkova-Petkova in periodical scientific publications are related to the topic of the scientific work.

Literature review

The etiology, pathogenesis, classification and clinical picture of talocrural joint distortion are discussed in detail in the literature review.

Presented are the currently known methods of treatment with the main emphasis on the factors of physical medicine.

The studies available to date on the effect of deep oscillation therapy in patients with ankle pathology are systematized.

The main characteristics of the DO methodology are comprehensively described and the application and clinical experience in medical practice are presented

Purpose and aims

The dissertation work is based on a clearly formulated goal - To make a comparative assessment of the effect of an electrostatic field using the deep oscillation method, the "PRICE" protocol and their combined application in early rehabilitation in patients with talocrural joint distortion.

The tasks are logically formulated according to the preliminary studies and subordinated to the set goal.

Material and methods

A total of 120 individuals of both sexes, aged between 18 and 50 years, with clinical manifestations of ankle joint distortion with a duration of symptoms of no more than 7 days, who meet specific inclusion criteria, were included in the study. The patients were randomly divided into three groups, each with 40 people. Patients were followed immediately before the start of treatment, at the end of treatment (day 7th) and on day 21st. To achieve the set goals, the necessary data was studied and analyzed: anamnestic data (pain, swelling, stiffness, etc.), functional status (examination, palpation, specialized manual tests, centimetry, goniometry), patients fill in a short form of the questionnaire The Foot and Ankle Disability Index and assess pain on the Visual Analog Scale.

The postgraduate student has chosen appropriate statistical methods giving a complete and reliable assessment of the data, in accordance with the purpose of the presented study.

The results correspond to the tasks set. The Dissertation student has well synthesized, visualized with tables and figures the distribution of patients in the three groups and the results obtained.

From the analysis of the initial values of the indicators, it can be seen that there is no difference between the three groups, which leads to their homogeneity with respect to each other.

The obtained results of this study show that DO therapy in combination with standard care "PRICE" provides comprehensiveness from the earliest stage of treatment of the condition to the 21st day. The obtained values are statistically significant and proven by examining the set follow-up parameters.

The discussion on the obtained results highlights their significance by comparing them with other studies in the world literature.

In conclusion, the most important results of this study were summarized.

Results and discussion

The results correspond to the tasks set. The Dissertation student has well synthesized, visualized with tables and figures the distribution of patients in the three groups and the obtained results.

Before therapy, there was no statistically significant difference between the observed and compared groups regarding the monitored parameters. From the analysis of the initial values of the indicators, it can be seen that there is no difference between the three groups, which leads to their homogeneity with respect to each other.

The obtained results of the study show that DO therapy in combination with standard care "PRICE" provides comprehensiveness from the earliest stage of treatment of the condition to the 21st day. The obtained values are statistically significant and proven by examining the set follow-up parameters.

The discussion on the obtained results highlights their significance by comparing them with other studies in the world literature.

In conclusion, the most important results of the study are summarized.

Conclusions and scientific contributions

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

Abstract and scientometric indicators

Three full-text publications presented by Dr. Detelina Damyanova Nedyalkova-Petkova in periodical scientific publications were related to the topic of the scientific work.

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

Critical notes and recommendations

Examining the materials thus duly provided to me, I find no omissions or inaccuracies and have no particular remarks or recommendations.

Conclusion

The submitted for opinion dissertation work of Dr. Detelina Damyanova Nedyalkova-Petkova is methodologically precise, with a clearly formulated goal and tasks, with specific and well-founded conclusions and an up-to-date contribution to science.

The provided materials meet all the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of the LDASRB and the Regulations of MU – Varna

On the basis of the above mentioned presentation, I give my positive assessment and propose to the Honoured Scientific Jury to also vote positively and award Dr. Detelina Damyanova Nedyalkova-Petkova Educational and Scientific Degree "Doctor" in the scientific specialty "Physiotherapy, Spa Treatment and Rehabilitation".

Date: 21.05.2024

Varna

Review was drawn up by:

(Prof. Dr. Dimitar Raykov, MD)

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