

OPINION

By Assoc. Prof. Dr. Evgenia Petrova Dimova, MD
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regarding

dissertation work for the acquisition of the educational and scientific degree
"Doctor" in area 7. Health care and sports, professional direction 7.1. Medicine,
in the scientific speciality "Physiotherapy, Resourt Therapy and
Rehabilitation",",

prepared by

Dr. TSVETOMIR YANKOV YANKOV
PhD student at the Faculty of Public Health
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Dissertation topic:

“Study on the Combined Use of High-Energy Laser and Manual Therapy in Patients with Functional Thoracic Spine Disorders”

The basis for drawing up the opinion: By order of the Rector of MU-Varna N P-109-639/21.12.23, I am determined to participate with an opinion on the defense of Dr Yankov.

1. Significance of the problem

Dr Tsvetomir Yankov's dissertation focuses on the functional obstructions in the thoracic spine. It explores the potential of using high-energy laser radiation and manual therapy together to influence these obstructions.

Pain and restricted range of motion along the spine often result from functional problems in the thoracic area. They refer to conditions where there is reversible dysfunction in the joint but no structural alterations in the joint mechanism. Their significance and prevalence outweigh structural diseases and degenerative changes, especially among individuals who are young and physically active. Analysing motions in the thoracic spine is a diagnostic challenge in this pathology.

In addition, the complex anatomy of the thoracic segment and the presence of multiple structures that can cause pain increase the difficulty in differentiating functional disorders in the thoracic region. This often leads to unnecessary drug treatment and chronicity of the condition.

All these factors emphasise the need for a systematic and thorough approach to the problem and the preparation of effective protocols for diagnosis, treatment and prevention of functional disorders in the thoracic spine.

The combination of manual therapy and high-intensity laser treatment presents an integrated approach for addressing functional disorders originating from the thoracic region. This opinion is formed based on the expected synergies between the distinctive therapeutic mechanisms of high-intensity laser treatment and the biomechanical benefits of manual therapy. Combining these two modalities may achieve a multifaceted approach to correcting the physiological and biomechanical aspects of thoracic spine dysfunction, resulting in improved outcomes.

Furthermore, integrating high-intensity laser therapy with manual therapy recognises the need for a holistic and patient-centred approach and the adaptation of therapeutic models to the patient's needs. Functional disorders of the thoracic spine can vary widely among patients, requiring a personalised treatment plan. Combining high-intensity laser treatment with manual therapy can provide this personalised and patient-centred strategy and provide more precise and effective physical therapy treatment.

2. Formulation of the goal and tasks:

The dissertation's objective is clearly stated: to investigate the impact of combining manual therapy with high-energy MLS laser treatment on patients suffering from functional disorders affecting the thoracic region.

There are five tasks, all of which are plainly and accurately formulated and correlate with the research objectives.

The issue formulated in the dissertation possesses scientific and scientifically applied significance.

3. Structure of the dissertation:

The dissertation has a classical structure, contains 143 pages and is illustrated with 24 tables and 42 figures. 16 apps are included.

4. The doctoral student's knowledge and understanding of literature:

The dissertation's literature review is set out on 39 pages and shows knowledge of the issues discussed. The overview ends with logical, precisely formulated conclusions. The bibliography consists of 166 literary sources, of which 18 are in Cyrillic and 148 in Latin, most of them published in the last five years.

5. Methodology and design of the scientific research:

The scientific investigation is designed to be prospective, randomised, and parallel. A total of 82 patients with functional problems in the thoracic area were included in the study. They were separated into two groups: group "A" received treatment by manual manipulations, while group "B" received treatment through a combination of manual therapy and high-energy MLS laser therapy.

Strict adherence to ethical standards and regulations governing medical research involving humans was ensured.

The doctoral student has selected appropriate contemporary statistical descriptive and graphic methods, enabling the acquisition of relevant answers to the objectives outlined in the thesis and formulating accurate conclusions.

Despite the research limitations caused by the pandemic, the study's findings demonstrate that the combined use of high-energy laser radiation with two different pulses (MLS-laser) and manual therapy is an effective approach for alleviating symptoms of functional disorders in the thoracic region of the spine. No local or general side effects from the therapeutic interventions were observed. The acute symptoms did not worsen after the procedures.

The survey data are inputted and analysed using IBM SPSS Statistics for MAC v. 29.0.1.0(171), and its graphical representation is created using Microsoft Excel for Mac Version 16.69.1, 2019.

6. Consistency between the objective, results, and conclusions:

The results and discussion are presented comprehensively on 44 pages, including well-illustrated tables and figures, which, together with the statistical analyses, follow the course of the tasks set. The analysis of the results demonstrates the doctoral student's skills in evaluating and analysing the information and the data obtained. The dissertation ends with six clearly and concretely formulated conclusions, logically following the set tasks. The conclusions accurately represent the analysis of the results and correspond to the set goal.

7. Contributions of the dissertation work:

The dissertation highlights four theoretical-methodological and three practical-applied contributions, which are objective and derived from the achieved outcomes. A novel study was conducted to compare the effects of manual therapy as monotherapy and its use together with a high-energy laser in patients with functional disorders in the thoracic spine. The study proved the superior short-term and long-term therapeutic effectiveness of the combined application of manual therapy and high-energy MLS laser. The proposed is a novel therapeutic approach for treating patients with functional impairments in the thoracic region, which involves the use of manual therapy and high-energy MLS laser. Protocols have been established for performing manual therapy utilising a pistol approach to manipulate thoracic motor segments in patients with functional disorders in the thoracic region, as well as for administering MLS laser therapy to patients with functional problems in the same area.

8. Abstract:

The abstract is written on 59 pages, sufficient in volume to summarise the content of the dissertation, as well as the achieved results and contributions.

9. Publications and participation in scientific events on the dissertation work:

In connection with the thesis, 3 non-refereed full-text publications that fulfil the required quantitative criteria are presented.

10. Critical notes and recommendations:

I have no critical remarks. Recommendations – to maintain a good publication activity and to publish all results related to the dissertation work. It is recommended that the scientific activity of the doctoral student should be

increased by participating in national and international scientific forums with reports, posters, or scientific announcements.

11. Personal evaluation of the candidate:

I have known Dr Tsvetomir Yankov since he was a student when he declared his first interest in physical and rehabilitation medicine. He graduated with honours from his higher medical education and has almost ten years of medical experience. He actively participates in the therapeutic and scientific activity of the Clinic of Physical and Rehabilitation Medicine of the University Hospital in Varna, where he has been working since 2016. A proven professional, Dr Yankov is highly dedicated to both his clinical and teaching work, demonstrating abilities to integrate patient care with a commitment to training the next generation of healthcare professionals, distinguished by his dedication to providing high-quality clinical services while sharing his knowledge, skills and experience with students or colleagues. As a colleague, Dr. Yankov has proven his high competence, correctness, and collegiality, as well as his skills for conflict-free teamwork.

Conclusion:

The thesis presented by Dr. Tsvetomir Yankov Yankov on the topic *"Study on the Combined Use of High-Energy Laser and Manual Therapy in Patients with Functional Thoracic Spine Disorders"* has clearly defined goals and objectives, accurate and well-supported conclusions and original theoretical, methodological, and practical contributions. The research presented is comprehensive and methodologically rigorous. Exhibits the PhD student's ability in collecting and evaluating scientific data.

The presented materials comply with the requirements of the Law for the Development of the Academic Staff of the Republic of Bulgaria and the Regulations and the order for acquiring scientific degrees and holding academic positions in the Medical University – Varna.

Based on the above, and after evaluating Dr Tsvetomir Yankov's dissertation work and his complex studies, results, and original contributions of scientific and practical significance, I recommend to the members of the esteemed scientific jury that Dr Tsvetomir Yankov Yankov be awarded the educational and scientific degree "Doctor" for his dissertation work *"Study on the Combined Use of High-Energy Laser and Manual Therapy in Patients with Functional Thoracic Spine Disorders."*

13.01.24
Varna

Assoc. Prof. Dr. Evgenia Vladeva, MD, Ph.D.

Заличено на основание чл. 5,
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