

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, Resort Therapy and Rehabilitation"

prepared by
Dr Dafina Velinova Bacheva-Chausheva
Doctoral student at the Faculty of Public Health
Medical University "Prof. Dr. Paraskev Stoyanov," Varna

Dissertation topic:

Rehabilitation in Patients with Lung Diseases in Conditions of Pandemic, Caused by Coronavirus Sars-Cov-2

The basis for drawing up the opinion: By order of the Rector of Medical University, Varna N P-109-124/28.03.24, I am determined to participate with an opinion on the defence of Dr Bacheva.

1. Relevance of the problem

Dr. Dafina Bacheva's dissertation tackles a crucial issue in healthcare, particularly for specialists in physical and rehabilitative medicine. Her work focuses on the challenges of lung diseases caused by the SARS-CoV-2 coronavirus and their subsequent complications.

The course of these diseases is atypical and variable, with a wide range of symptoms ranging from no symptoms at all to severe pneumonia, acute respiratory failure and fatal outcomes. This makes it extremely difficult to formulate generalised rules for a therapeutic approach.

New challenges for specialists in physical and rehabilitation medicine relate to the need to adapt therapeutic methods to each patient's individual needs, carefully assess the risks and benefits of each therapeutic procedure, adhere to strict hygiene protocols, and provide emotional support to patients struggling with the effects of COVID-19.

The pandemic has forced rehabilitation programs to be adapted to ensure the safety of patients and staff. Virtual platforms, remote monitoring, and

personalised approaches tailored to the needs of individual patients have been necessary.

Despite the difficulties, physiotherapy remains an important tool for the recovery of patients who have recovered from COVID-19. Functional testing, rehabilitation programmes, education and support programmes, and collaboration with other professionals are key to improving lung function, mobility, and quality of life for these patients.

The ongoing need for rehabilitation outside of the pandemic is driven by the fact that COVID-19 can cause permanent damage to both the lungs and other organs and systems, even in patients with mild symptoms. The need for rehabilitation outside of pandemics is not diminishing, given the growing number of patients with post-COVID complications. The long-term impact of COVID-19 is expected to affect healthcare systems for years to come. Rehabilitation will play a key role in managing these consequences and improving patients' quality of life.

2. Formulation of the goal and tasks:

The aim of the dissertation is clearly formulated - to evaluate the effectiveness of respiratory rehabilitation in hospitalised patients with COVID-19 pneumonia and respiratory insufficiency in terms of clinical course, impact on quality of life and psycho-emotional status.

The tasks are six in number, clearly and correctly formulated and correspond to the purpose of the study.

The relevance of the problem developed in the dissertation in scientific and scientific-analytical terms is given.

3. Structure of the dissertation:

The dissertation has a traditional format, is 187 standard pages long, and has six appendices in addition to 32 tables and 23 figures for illustration.

4. Literary awareness of the doctoral student:

The literature review of the dissertation is presented on 70 pages and shows the knowledge of the topics covered. The overview ends with logical, precisely formulated conclusions. The bibliography consists of 360 literary sources: 7 in Cyrillic and 353 in Latin.

5. Methodology and design of the scientific study:

The scientific study is prospective. For its purposes, a total of 124 patients with X-ray and computed tomography-confirmed bilateral pneumonia and respiratory insufficiency caused by the Sars-Cov-2 virus were followed. 62 of the patients were included in a group that underwent respiratory rehabilitation in addition to standard treatment—a research group. In parallel, a control group of 62 patients who received standard treatment without respiratory rehabilitation was observed.

All ethical principles and rules for medical research on humans were followed.

Dr. Dafina Bacheva has chosen appropriate modern statistical, descriptive and graphical methods that allow her to obtain an appropriate answer to the tasks set in the dissertation work and to draw valid conclusions and findings.

The survey data were entered and analysed using SPSS, version 25 (IBM, Armonk, USA), Jamovi version 2.4.11, Excel 2010.

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

The author's own results and discussion are presented in 31 pages of well-illustrated tables and figures, which, together with the statistical analyses, track the progress of the tasks. The analysis of the results demonstrates the PhD student's skills in evaluating and analysing the information and data obtained. The dissertation ends with seven clearly and concretely formulated conclusions that logically follow the tasks. The conclusions drawn correctly reflect the analysis of the results and correspond to the objective set.

7. Contributions of the dissertation:

Three theoretical-methodological and three practical contributions of the dissertation are given, which are objective and derive from the results obtained.

The first study in Bulgaria on the effectiveness of respiratory rehabilitation for patients with COVID-19 in the acute phase of the disease under hospital conditions is presented. The need for an early start of rehabilitation for patients with moderate and severe COVID-19 disease has been proven and the implementation of subsequent physiotherapeutic interventions for patients who have suffered severe COVID-19 pneumonia is justified.

For the first time in our country, a structured rehabilitation program for patients with moderate and severe pneumonia caused by COVID-19 has been introduced.

An example method for the rehabilitation of patients in the initial phase of COVID-19 has been developed.

8. Summary:

The summary is clearly presented across 87 pages, providing a comprehensive overview of the results and contributions.

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

In connection with the dissertation, two non-refereed full-text publications are presented, in one of which Dr. Bacheva is the sole author, which covers the necessary quantitative criteria. presented in the dissertation.

10. Critical remarks and recommendations:

I have no critical comments. Recommendation: to maintain a better publication activity, to publish all results related to the dissertation work. To increase the scientific activity of the PhD student in regional, national and international scientific forums with reports, posters or scientific announcements. To make the algorithm created for the rehabilitation of patients in the acute phase of COVID-19 more widely known and to adapt it to patients with other respiratory system diseases that continue with respiratory failure.

II. Personal impressions of the candidate:

Dr. Dafina Bacheva is a colleague with in-depth knowledge in the field of medicine, in particular in the field of physical and rehabilitative medicine, who is able to communicate effectively with patients, gain their trust and provide them with clear and understandable information. She adheres to high ethical standards and always acts in the best interests of the patient. As head of the Rehabilitation Department, she is always responsible for her actions and decisions. She knows how to work as a team with other colleagues and with other specialists, motivating them and ensuring the best treatment for patients. Dr. Bacheva has proven to be a good professional and organiser. She has a number of qualities that make her a valuable member of the team and enable her to provide high-quality medical care.

Conclusion:

The dissertation work presented by Dr. Dafina Velinova Bacheva-Chausheva on the topic "*Rehabilitation of patients with lung diseases in the conditions of a pandemic caused by the SARS-CoV-2 coronavirus*" has clearly formulated objectives, correct and well-founded conclusions and original theoretical, methodological and practical contributions. The research presented is thorough and scientifically sound. Demonstrates the doctoral student's ability to collect and analyse scientific information.

The submitted materials fulfil the requirements of the Law on the Development of Academic Staff of the Republic of Bulgaria and the Rules and Regulations for the Acquisition of Academic Degrees and the Exercise of Academic Positions at the Medical University, Varna.

Based on the above and the evaluation of the dissertation work of Dr. Dafina Bacheva-Chausheva and her complex studies, results and original contributions of scientific and practical importance, I recommend that the members of the esteemed scientific jury award the educational and scientific degree of Doctor" to Dr. Dafina Velinova Bacheva-Chausheva for the dissertation "*Rehabilitation in patients with lung diseases in conditions of a pandemic caused by the SARS-COV-2 coronavirus.*"

20.04.24
Varna

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

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