REVIEW

Of a dissertation on topic: "Rehabilitation in patients with lung diseases in conditions of pandemic caused by coronavirus SARS-COV-2" presented for public defense before a scientific jury for the awarding of the educational and scientific degree "Doctor of Medicine", professional direction 7.1 Medicine, scientific specialty: "Physiotherapy, resourt therapy and rehabilitation"

Author of the dissertation: Dr Dafina Velinova Bacheva- Chausheva, assistant at the Department of Physiotherapy, Rehabilitation and thalassotherapy at the Medical University - Varna; doctoral student of an independent form of study.

REVIEWER: Prof. Dr. Zhaneta Georgieva Tyaneva, MD, MU Varna
member of the Scientific Jury, confirmed by order of the Rector of the University of Varna, R-109-124/28.03.2024

Biographical data:

Dr. Bacheva was born on 22.09.1979. She graduated from the High language school in Varna. In 2004, she completed her higher education in medicine at the Sofia Medical University. Until 2009, she was a post-graduate student in physical rehabilitation medicine at the clinic of physiotherapy and rehabilitation at MPHAT "St. Marina" Varna. Since 2015 she has been an assistant at the Department of Physiotherapy, Rehabilitation and thalassotherapy at the Varna Medical University. Since 2016 she has been enrolled on free doctoral studies.

The dissertation work:

"Rehabilitation in patients with lung diseases in conditions of a pandemic caused by the SARS - COV -2 coronavirus"

The scientific work is standardly structured on 187 pages and illustrated with 32 tables, 23 figures and contains 6 appendices. 360 literary sources are cited, of which 7 are in Cyrillic and 353 are in Latin.

The goal of the dissertation is precisely formulated. The set **tasks** correspond to the purpose of the study. The doctoral student aims to evaluate the effectiveness of respiratory rehabilitation in hospitalized patients with COVID-19 pneumonia and respiratory failure in terms of clinical course, impact on quality of life and psycho-emotional status. The tasks are clearly formulated and strictly performed.

Presented for the first time in the country is a study about the efficiency of respiratory rehabilitation for patients with COVID-19 in the acute phase of the disease in hospital settings. For the purpose of the study, 124 patients were examined, 62 with the underlying disease and 62 control group.

Results:

The literary review has been written thoroughly, shows detailed familiarity with the literary sources and competent attitude to the so far published data concerning the problem. A comparative analysis was made of the functional status of the cardiovascular and respiratory system and tolerance to physical activity in patients during rehabilitation in hospital conditions. Assessment was made of health-related quality of life, measured by EQ-5D-3L - self-assessment of patients with COVID - 19 admitted for inpatient treatment in the Department of thoracic surgery of the MHAT "St. Marina", Varna.

The results **are** convincing and precise and have a scientific value with a contributing character. An essential part is the comparative results between patients with COVID -19 and controls. Respiratory exercises and etc. Types of physiotherapy, conducted in the acute phase of this disease, represent a promising therapeutic strategy to improve the physical condition of these patients. The dissertation student accepts that the application of rehabilitation in the treatment of this category of patients can be considered an effective therapeutic tool, which should be applied after thorough assessment of the possibilities and the accompanying diseases. A highlight in Dr. Bacheva's work is the created algorithm for the rehabilitation of patients with C ovid -19 pneumonia in the acute phase of the disease with a precise examination of the patient from the somatic status, laboratory and imaging tests, functional status and finally determining the quality of life and psycho emotional status. This acute stage rehabilitation program enables optimal functional recovery for patients with Covid-19.

I agree with the conclusions drawn and the reference for the dissertation student's contributions. With the research done, the dissertation student reports the effectiveness of the implemented rehabilitation program in relation to the results of the blood gas analysis in the group of patients with severe pneumonia and in the subgroup of the men. The author recorded a reduction in the subjective feeling for breath shortness among the patients carrying out rehabilitation in the acute phase of COVID-19. A positive influence was established of the applied complex of respiratory exercises on the physical capacity of the patients. A persistent deficit in

physical capacity after discharge is indicative of the need for continued rehabilitation after the acute period for patients with severe course of COVID-19. A sustained reduction in complaints was noted in each of the EQ -5D health test measures used, as well as corrective influence of the implemented rehabilitation program with a reduction in anxiety and depression indicators.
Presented is the first study in Bulgaria for efficiency of respiratory rehabilitation for patients with COVID-19 in the acute phase of the disease in a hospital setting. The need for an early start for the rehabilitation of patients with moderate and severe course of the disease COVID-19 has been proven. Motivated is the conduct of subsequent physiotherapy interventions for patients, having survived severe COVID-19 pneumonia. For first time in our country a structured program was introduced for rehabilitation in patients with moderate and severe course of pneumonia caused by COVID-19. Created is an exemplary algorithm for rehabilitation of patients in the acute phase of COVID-19.
All statistical analyzes were performed using a state-of-the-art SPSS software program. Descriptive statistics was used with analysis of quantitative and qualitative variables and graphical representation.

Dr. Bacheva has 2 full-text publications on the dissertation work, 1 of which abroad. She is the first author in these publications.

Conclusion:

Dr Dafina Velinova Bacheva- Chausheva, significantly covers the necessary scientometric criteria for the awarding of the scientific and educational degree "doctor" according to LDAS and the Regulations of the Medical University of Varna. The dissertation is up-to-date and precisely executed. I believe that the work has important original and confirmatory contributions and I will give a positive vote for awarding the scientific degree "doctor".

22.04.2024
Varna

Reviewer:
Prof. Dr. Zh. Georgieva, MD: