

STATEMENT

**by Assoc. Prof. Anna Petrova Georgieva, PhD,
Department of Health Care,
Faculty of Public Health,
Medical University - Varna
internal member of the scientific jury**

of the dissertation of Ivelina Dragieva Dobreva

**on "Social-psychological and diagnostic approach of the medical laboratory technician
as part of a multidisciplinary team for the treatment of patients with SARS-COV-2"**

**for awarding of educational and science degree "PhD" in a field of higher education:
7. Health and Sports, professional field: 7.4. Public Health and scientific specialty
"Health Care Management"**

Thesis supervisors:

**Assoc. prof. Emiliya Georgieva, PhD
Assoc. Prof. Tsvetelina Tarpomanova, MD, PhD**

Details of the procedure

I submit this statement as a member of the Scientific Jury appointed by Order No. P-109-51 of 15.02.2024 of the Rector of the Medical University - Varna, for providing a procedure for the defense of dissertation on "Social-psychological and diagnostic approach of the medical laboratory technician as part of a multidisciplinary team for the treatment of patients with SARS-COV-2" by Ivelina Dragieva Dobreva, PhD student at the Department of Health Care, Sliven Branch, Medical University - Varna. At the first meeting of the Scientific Jury I am appointed to present an statement on the dissertation.

By order of the Rector of Medical University - Varna № P-109-303 of 27.07.2022 Ivelina Dragieva Dobreva was enrolled as a PhD student in the independent form of study at the Department of Health Care, Branch Sliven, Medical University - Varna, for the acquisition of the degree of Doctor of Education in the field of higher education 7. Health and Sport, professional field 7.4 Public Health, in the scientific specialty "Health Care Management".

In view of the proposal No 031-17/08.02.24 of prof. Ivan Stoyanov Alexandrov, Ph.D., Director of the Sliven Branch of the Medical University - Varna, by decision of the Academic Council under Minute No. 82/12.02.2024 on the basis of Art. 24, para. 6 and Art. 30, para. 68,

par. Ivelina Dragieva Dobрева was dismissed with the right to defence by Order of the Rector of MU-Varna No. R-109-51 of 15.02.2024.

The submitted administrative documents and materials have been prepared and presented in strict compliance with the Academic Staff Development Act in the Republic of Bulgaria and the Regulations for its implementation, as well as with the Regulations for Academic Staff Development of Medical University - Varna.

Biographical data and career development of the PhD student

Ivelina Dragieva Dobрева was born on 14.05.1971. She acquires the specialty "Medical Laboratory Technician" in 1990 from the Institute for Training Health Personnel in the town of Plovdiv. In 1995 she earned a "Medical Laboratory Technician" degree at the Medical Institute of Plovdiv. She successively improved her education, obtaining a Bachelor's degree at the University of Thrace, Faculty of Medicine - Stara Zagora (2011) and a Master's degree at the Medical University - Plovdiv (2015) in the specialty "Health Care Management". Ivelina Dobрева started her professional career in 1990 as a medical laboratory assistant in the URH Stara Zagora. She started her career in medical diagnostics in 1990. Subsequently, she continued working as a medical laboratory technician at the University Hospital "Prof. St. Kirkovich" – of Stara Zagora (10.1996 - 30.04.2006), "Rhythm" Medical Center (01.05.2006 - 11.02.2011) - Stara Zagora, Bulgaria. Stara Zagora and MC-MK Beroe EOOD Stara Zagora" (from 2012 - till now). In parallel, from 01.03.2011 Ivelina Dobрева started her teaching career at the Medical College of Thracian University in Stara Zagora. "Senior Lecturer" at the Medical College of Thracian University - Stara Zagora, and since 2016 - until now she has been holding the position of "Senior Lecturer" at the Medical College of Thracian University - Stara Zagora. Senior Lecturer at the Department of Medical Education, Trakia University, Stara Zagora. She is a senior lecturer at the University of Stara Zagora. She speaks English, French and Russian. He is the chairman of a trade union organization at the Medical College, a member of a tripartite committee at the Thracian University, of the Academic Ethics Committee at the Thracian University, of the Stara Zagora Lions Club. The numerous publications, participation in scientific forums, projects, international mobility under the Erasmus program are a testimony to the continuous aspiration of Ivelina Dobрева for continuous professional development and improvement.

Relevance of the topic

The present dissertation is undeniably topical due to the enormous public health challenges posed by the Covid pandemic. The rapid spread of the coronavirus has put health systems and those working within them under pressure. The steady increase in the number of newly infected, the rise in mortality rates, the lack of specific treatment, widespread media coverage, frontline work, overwork, the shortage or lack of available protective equipment, the perception of inadequate support, fear for patients' lives, and fear of infection have put the mental health of medical staff working with patients with Covid at risk. Therefore, early assessment of the

mental health of medical professionals and consideration of appropriate psychological interventions is vital, on the one hand, in order to protect their health and, on the other, in relation to the need to adequately meet the needs of patients.

All of the above defines the topic devoted to the study of the social-psychological and diagnostic approach of the medical laboratory technician as part of a multidisciplinary team for the treatment of patients with SARS-COV-2, discussed in the thesis, as relevant and significant.

Knowledge of the problem

Ivelina Dragieva Dobreva's theoretical reasoning stems from analyzing 152 sources, 66 of which are in Cyrillic and 86 in Latin. The studied literature has been critically and creatively evaluated, resulting in a thorough analysis of the theoretical propositions. All this logically leads to the conclusion that the PhD student possesses scientific knowledge of the problem she has focused her research interest on.

Characteristics and evaluation of the thesis and contributions

The dissertation has a total length of 160 pages. The content of the dissertation includes: introduction, four chapters, conclusion, conclusions, contributions, references used, 3 appendices. The text is illustrated with 52 figures and 16 tables. The individual chapters of the thesis are chronologically related and meet the structural and content requirements for such a scientific work. The content of the work presents the author as a scientist who can conduct scientific research, form conclusions and substantiated proposals of scientific and applied value.

In the **introduction** the relevance of the chosen topic is substantiated.

The **first chapter** of the dissertation includes a literature review, presented in 43 pages, which is logically structured and systematized. In it, besides very good skills of theoretical analysis, comparison and generalization, the doctoral candidate demonstrates a very thorough knowledge of the researched issues in theoretical and practical terms. In its stylistic parameters, the presentation of the text has all the distinctive features of the scientific style.

The emergence and unfolding of the Covid pandemic and the many public health challenges it posed are examined chronologically. A social-psychological characterization of a patient with Sars-Cov-2 is made, based on a review of multiple studies in different countries of the impact of the Covid pandemic on the mental health of the population. Emphasis is placed on the results of a comparative analysis between Bulgaria and 14 other countries, based on which it is concluded that negative mental health consequences are present both globally and nationally. The impact of the hospital environment on the psyche of patients diagnosed with Covid has been studied. The impact of the pandemic on the mental health of healthcare professionals has been studied. The professional activities and interactions of the medical laboratory technician as part of the interdisciplinary team for the diagnosis and treatment of patients with SARS-COV-2 are examined. The personal qualities of the members of the multidisciplinary team needed when interacting with patients with COVS are outlined. On the basis of the unresolved issues on the studied topic as seen in the literature review, the need for a certain social-

psychological and diagnostic approach of the medical laboratory technician during the care of patients with Covid is highlighted.

Chapter two of the thesis presents the aim, objectives, material and methods of the study.

The aim of the research was to investigate the need for a social-psychological and diagnostic approach of the medical laboratory technician as part of a multidisciplinary team for the diagnosis and treatment of patients with Sars-Cov-2.

The aim and objectives are precisely and clearly defined, aimed at solving the main research problem. The working hypotheses, subject matter, object, persons covered, inclusion criteria, and exclusion criteria are formulated. The location, timing and instrumentation of the study are described. The basic conceptual apparatus, design, organization, and expected benefits of the study are presented. The methods selected and applied for data collection, processing and statistical analysis are relevant to the research objectives.

Chapter 3 presents the results and analysis of the survey conducted among medical laboratory technicians, medical professionals (doctors and nurses) and patients who have suffered from Covid. The demographic characteristics of the respondents were studied. It was found that the majority of medical laboratory technicians and nurses and more than one-third of physicians became infected with coronavirus during the course of their duties. Moderate concerns were shown to exist in all three groups of respondents regarding personal risk of infection with Covid. On the other hand, concerns related to infection of relatives were very strong in medical laboratory technicians and patients, and moderate in medical professionals.

The results of the scientific study reveal a variety of experiences of the surveyed medical laboratory technicians, medical professionals and patients during the pandemic. The majority of all three groups of respondents experienced stress and overwhelm. The vast majority of patients experienced varying degrees of nervousness and uncertainty, while the proportion of medical laboratory technicians and professionals reporting these experiences was significantly lower. The majority of medical professionals reported disturbances in sleep quality, and a third of medical professionals and patients experienced mild depressive states. There was a statistically significant lack of social support in patients.

The data from the patients' opinion survey convincingly show that the establishment of a positive virological status for Covid infection is achieved by a laboratory test conducted in an independent medical diagnostic laboratory (MDL) or in a laboratory that is part of the structure of a medical institution. Of interest is the interaction of the patients with the medical laboratory technicians and medical professionals in reporting the result of the test for positive virological status for Covid infection. More than half of the patients reported that the test result was communicated to them by a medical laboratory technician from their respective laboratory. At the same time, according to the data, each of the medical professionals and one-quarter of the medical laboratory technicians involved in the study had to report a positive result to a patient at one time or another during the Covid pandemic, had a Covid test done, and had witnessed a certain behavioral reaction from the patient (most often fear and tenseness). A significant proportion of patients also reported experiencing anxiety for themselves and their loved ones

upon learning of the positive test result. Most of the medical laboratory technicians and medical professionals took action to minimize this reaction so that the patient could gain security and peace of mind by attempting to reassure the patient, or seeking help from another professional to counsel the patient. The results of the surveyed opinion of the medical laboratory technicians and medical professionals also strongly support the need for the involvement of a psychologist in the multidisciplinary team treating patients with Covid.

In the course of the study, the importance of a multidisciplinary team in the diagnosis and treatment of Covid patients was also highlighted. The results show that the medical laboratory technician is an indispensable and equal member of the multidisciplinary team, with a clearly defined role when dealing with patients with Covid requiring treatment in a hospital setting.

Of interest are the data demonstrating that despite the high rating that most patients gave to all those involved in their diagnosis and subsequent treatment, and despite the high rating of the medical laboratory technician's ability to reduce tension by putting patients at ease or providing additional information, there are also negative patient responses. This proves the need to create new skills in medical laboratory technicians in direct communication with patients regarding the results of medical diagnostic tests. The data from this study prove that it is of utmost importance that every medical professional, including the medical laboratory technician, reporting a positive result, should have the ability to recognize baseline reactions in patients and should have the tools to facilitate the processing of the patient's reaction by providing information, giving hope and reassurance. All the above results of the study logically lead to the conclusion of the need for a specific social-psychological and diagnostic approach of the medical laboratory technician as part of a multidisciplinary team for the treatment of patients with SARS-COV-2, the need for additional training, and the need to include a psychologist in multidisciplinary medical teams working in high-risk environments.

The presented results and their discussion fully meet the hypotheses, aim and objectives. The results obtained are interesting and, where applicable, statistically valid. The tabular and graphical illustrations assist in the easy perception of the data presented. The presentation and discussion of the obtained data present the doctoral student's ability to handle the data from the conducted research, to report them correctly, to apply appropriate methods of analysis and to interpret the obtained results thoroughly.

Chapter four contains approaches developed by Ivelina Dobreva to improve and maintain the mental health of medical laboratory assistants. The first of these is based on the two types of coping strategies (coping strategies), the basis of which is problem-focused and emotion-focused coping. Special attention is paid to the use of social support network resources (emotional, informational and material support), their relevance and applicability.

The second of the approaches is the Mental Health Prevention Model for Medical Laboratory Technicians, which is notable for its originality and substantial contribution. The implementation of the Medical Laboratory Workers' Mental Health Prevention Model goes through seven main stages. In the first stage, it is planned to study the motivation of all working medical laboratory technicians, starting with their induction and subsequently developed during

their professional career. The data obtained should serve as a basis for comparison with subsequent motivation and satisfaction surveys during the course of employment. The next, second stage, is based on conducting surveys related to motivation, anxiety, depression and burnout periodically during the course of work, using a specific assessment tool- the HADS self-assessment questionnaire to identify intense anxiety and depressive states, the Maslach Burnout Inventory - MBI- a questionnaire on professional burnout and other validated and standardized questionnaires.

Particularly valuable are the preventive measures proposed by the doctoral student, described in the third stage, which are identified on the basis of the results obtained from the survey and observation for each specific case. Such measures include changing and/or optimizing the work regime and training for communication skills; supporting the psycho-emotional state of employees through the formation of training and focus groups, team building, and in the presence of burnout and/or anxiety-depressive states, behavioral disorders, aggressive manifestations, it is necessary to refer the employee for consultation with a psychologist / psychiatrist and specialized training. In stage four, a decision is made to implement a specific preventive measure and in stage five the specific preventive measure is implemented. In the sixth stage, the results of the applied preventive measure are measured, and in the seventh and last stage, the necessity of changing the preventive measure is assessed, depending on the results obtained.

The third of the presented approaches to improve and maintain the mental health of medical laboratory technicians is the Medical Laboratory Technician Training Model, in which the PhD student proposes the inclusion of "Clinical Laboratory Constellations in Covid" in the training of medical laboratory technician students in medical colleges. At the level of postgraduate training, the graduates are offered training on the following topics: 'Emotional resilience during a health crisis', 'Organizational behavior and burnout', 'Current trends in professional communication', 'Brief interventions and motivational techniques when working with patients', 'Clinical and laboratory indicators and their changes in different stages of patients and survivors of Covid'. Specific programs are also outlined for all topics. It is proposed that the training should be within a maximum of 3 days, at convenient times for those working.

The conclusions of the study have been reduced to six and reflect the results of the study and the achievement of the research objective.

The contributions of the dissertation are presented in eight points. Five of them are of theoretical-cognitive nature and three of practical-applied nature. I accept the main contributions of the dissertation as stated in the elaboration.

The formulated recommendations are valuable and with precise addressees - the Ministry of Education, the Guides of the specialty "Medical Laboratory Technician" in the Medical Colleges, the Bulgarian Association of Health Care Professionals and the Medical Universities.

All instruments used in the course of the study are included in the three **annexes**.

The submitted abstract meets the regulatory requirements. It accurately and clearly outlines the content of the dissertation.

In connection with the dissertation two publications were made, presented as scientific communications at the XXXIX International Scientific Conference The power of knowledge 16-18. December 2022 and published in Knowledge International Journal.

The dissertation contains significant contributions in theoretical and practical aspects, which will improve the activity of medical laboratory technicians as part of the multidisciplinary team for the treatment of patients with SARS-COV-2. The overall work of Ivelina Dobreva is a proof of her ability to carry out independent scientific activity.

Conclusion

Ivelina Dobreva's dissertation work is relevant and innovative. It has all the characteristics of a complete, in-depth academic study of an established problem and meets the requirements for an independent scientific work, according to the provisions of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations for the Development of Academic Staff of the Medical University - Varna.

In conclusion, **considering the merits of the presented dissertation and taking into account the unquestionable authorship and the mentioned contribution points, I confidently give my positive vote and propose to the esteemed members of the Scientific Jury to vote positively for the award of the educational and scientific degree "Doctor" to Ivelina Dragieva Dobreva in the scientific specialty "Health Care Management, field of higher education 7. "Health and Sport", professional field 7.4. "Public Health".**

22.04.2024.
Varna

Prepared the opinion:
Assoc. Prof. Anna Georgieva, PhD

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