STATEMENT

From Prof. Dr Klara Georgieva Dokova, MD, PhD
Department of Social Medicine and Health Care Organization
Faculty of Public Health
Medical University "Prof. Dr. P. Stoyanov", Varna

On the dissertation thesis defense for obtaining the educational and scientific degree "Phylosophy Doctor" in the area of higher education 7. Health and Sports, professional field 7.4 Public Health;

Title of the dissertation: **„Effectiveness and perspectives of simulation technologies in the training of students from health specialties"**

By Deyan Grigorov Grancharov

According to Order No P-109-300 /7.06.2023 of the Rector of the Medical University of Varna I was included as an internal member of the scientific jury. According to Protocol 1 from 20.06.2023 of the Scientific Jury meeting I was appointed to prepare a Statement on the procedure for obtaining the educational and scientific degree "Phylosophy Doctor" by Deyan Grigorov Grancharov, a PhD student in an independent form of training in the Programme "Public Health Management", professional filed: 7.4. Public Health, at the Department of Social Medicine and Health Care Organization, Faculty of Public Health, Medical University of Varna,

1. Career development of the candidate

Deyan Grancharov graduated the High School of Mathematics Varna, in 1991, and continued his university education in the Technical University of Varna, from where he obtained a Master's degree with a specialty "Electro Engineering". He passed additional law courses in the same University.

Between 2012 - 2014 D. Grancharov successfully finished his education in "Healthcare Management" and obtained a second Master degree from the Medical University of Varna.

During his education at the Technical university, Deyan Grancharov started his professional career as a computer specialist. After his graduation in 1997 until 2012 he was a general manager of SD Delphin - 3, working in the area of information technology.

From 2012 up to this moment eng. Grancharov works as an Assistant Rector of the Medical University of Varna, responsible for the organization, coordination and management of the administrative and business activities of the university.

From 14.11.2019 he is a PhD student in an independent form of training at the Public Health Management PhD Program at the Department of Social Medicine and Health Care Organization.

He uses English and Russian languages in his work.

2. Relevance of the topic of the dissertation

The topic of the presented dissertation work "Effectiveness and perspectives of simulation technologies in the training of students from health specialties" is a timely work in the context of the rapid development and implementation of technologies into all spheres of life, from which health care and training of health professionals is always cited as a priority.

Simulation technologies have two main, irreplaceable advantages for the training of health professionals, which makes the topic especially important for the management of medical universities, health institutions and patients.

First of all, they aim to ensure patient safety and to minimize the risk of errors in medical practice – a top priority of healthcare today. This is guaranteed by the fact that the future health professionals build and automate their skills working on and with realistic models. The second important aspect of simulation technologies is that they contribute to achieving standardization and quality in the health professional's training and actions.

Simulation technologies are also directly related to the application of information technologies, which is another priority at all levels - international, national and institutional. These are the grounds for the topic of dissertation to be defined as timely, relevant and with an important practical implications.

3. Knowledge of the problem

The dissertation work is presented on 189 pages, of which 71 pages are devoted to the review of the scientific literature on the researched problem. The literature review is well-structured, comprehensive, based on 232 scientific sources. The wide reference list illustrates the broad information of the author, as well as the lack of Bulgarian studies in the researched area.

The literature review reveals the introduction and the growing use of simulation technologies in the education and training in various medical disciplines for a wide range of health professionals around the world. The good knowledge of the literature has allowed the author to define the research problems.

The aim of the dissertation work is clearly formulated and focused on the analysis of the application, effectiveness and prospects of simulation technologies in the training of students from different health specialties.

Five research tasks and three working hypotheses were brought out.

4. Research methodology assessment

A complex methodology was applied for the achievement of the tasks of the dissertation, which include five stand-alone elements.

The first part of the work is aimed at a theoretical study, familiarization and systematization of the results of scientific publications revealing the introduction and application of different types of simulation technologies in the training of students from different health specialties.

The author's own empirical studies begin by conducting a structured survey among medical and dental students to initially assess the experiences and attitudes of students from both areas with the application of simulation technologies. The study is based on a self-developed questionnaire.

The next stage of the empirical work includes the planning, organizing and conducting of an experimental study with a parallel design, assessing the effectiveness of the application of simulation technologies in medicine training, and in particular the effectiveness of the maternal-fetal simulator CAFE Fidelis™ Lucina in the student training for leading a birth. In the methodology section of the dissertation, the stages of the experimental study, the specific characteristics of the intervention in the experimental group, as well as the indicators for the evaluation of its effectiveness, are described in detail.

In the next phase, a structured survey was conducted to assess the opinion and experience of lecturers to work with simulation technologies in the course of student training.

The last qualitative stage of the author's empirical studies is aimed at assessing the barriers and prospects of simulation technologies in training according to experts in the field. Experts-respondents work in various institutions and units related to the development, introduction and application of simulation technologies in medical educational institutions.

The methodology can be characterized as a successful combination of quantitative and qualitative research methods.

4. Characteristics and assessment of the results and contributions of the dissertation thesis

The results of the dissertation work and their discussion are structured according to the defined tasks. The results of the initial survey among medical and dental students, do not find differences between specialties and between Bulgarian/English-language training in access to simulation technologies and the satisfaction from the experience in working with them in the course of the training. The study reveals the potential to expand the application of simulation technologies in medical education, which the author believes contrasts with the results of international research.

The experimental study found slightly better results in performing the practical task by the students in the experimental group who underwent initial training through specialized simulators. Although the differences between the two groups (intervention and control) are not statistically significant there are indications of the effectiveness of learning with simulators, if only because it increases the student's sense of confidence.

I appreciate the importance and scope of the qualitative study of expert opinion on the barriers and potential of simulation technologies in the training of students from health specialties.

This dissertation is an in-depth comprehensive study on a specific problem related to health professionals education with original practical contributions.

6. Publications related to the PhD thesis

Three fulltext publications related to the dissertation topic are presented by the PhD candidate, two of which are in English and one in Bulgarian language.

7. Abstract

The abstract of the PhD dissertation meets the requirements and adequately reflects the content of the work. It is well illustrated with tables and figures.

Conclusion

The presented dissertation thesis has a relevant topic, executed precisely with a complex methodology, providing new data of applied importance for training in the field of healthcare, with an original nature.

The dissertation work proves that Deyan Grancharov demonstrates the qualities and skills for conducting scientific research on his own. The dissertation meets all the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Regulations on the Implementation of the Law and the Rules of the Medical University - Varna.

All of the above, provide grounds for a positive assessment of the presented PhD thesis and a recommendation to the members of the Scientific Jury to award the educational and scientific degree "Philosophy Doctor", to Deyan Grigorov Grancharov in the scientific programme "Public Health Management", in the area of higher education 7. Health and Sports, professional field 7.4 Public Health.

30.08.2023

Reviewer:

Prof. Dr. Klara Dokova, MD, PhD