OPINION

by Assoc. Prof. Georgi Panov, MD, PhD

University "Prof. Dr. Assen Zlatarov"-Burgas

on the dissertation for the award of educational and scientific degree „**doctor**"

Professional field: Medicine
Doctoral program: Psychiatry
Author: Samuela Georgieva Krasteva, MD
Type of doctoral program: full-time
Department: Psychiatry and medical psychology
Topic: Digital follow-up of patients with substance use disorders
Scientific advisor: Prof. Hristo Vasilev Kozhuharov, MD, PhD

1. Overview of the procedure and the candidate

The presented set of hard copy and electronic materials is in accordance with the requirements of the Law of the Development of the Academic Staff in Republic of Bulgaria and the regulations of the Medical University of Varna. It contains:

- application form to the Rector of MU-Varna
- dissertation
- dissertation summary in Bulgarian and English
- CV of the candidate
- copy of master's degree diploma
- enrollment order
- protocol for passed exams in psychiatry and English
- protocol for department's approval for defense
- public defense order
- declaration for originality
- list of publications related to the dissertation
- copy of publications related to the dissertation
- declaration of authenticity
- declaration of proof for registrations in scientific databases

Dr Samuela Krasteva was born on 18.07.1992 in Stara Zagora, Bulgaria. In 2011 she has graduated from National High School for Ancient Languages and Cultures. In 2017 she has graduated from the Medical University of Varna. In 2017 she started working as a resident physician in Second Psychiatric Clinic at UMHAT Sv. Marina-Varna and in 2018 she has joined

the Department of Psychiatry and Medical Psychology at MU-Varna as teaching assistant. In July 2018 she was enrolled in a full-time PhD program at the same department. Dr Samuela Krasteva is a member of BMA and EPA.

2. Relevance of the topic

The topic of the dissertation is focused on the one hand with the problems related to the continuing care of patients with substance use disorders, and on the other - the opportunities for the use of digital tools for diagnostic purposes in the field of psychiatry. With the development of modern technology, the question of how much they could help in better understanding and control of mental illnesses is becoming increasingly important. Of particular interest is the possibility of targeting patients for whom access to medical services is limited, such as patients with substance use disorders. In-depth research efforts in the field of digital psychiatry could provide a new set of diagnostic and therapeutic methods in routine practice.

3. Knowledge on topic

The candidate demonstrates a very good knowledge of the problem, which is evident from the content of the literature review and discussion of the presented results, especially given the relatively short duration of its discussion worldwide.

4. Methods

The methods used are in accordance with the set goals and objectives. The selection of statistical methods is appropriate regarding the analyzed data. It would be appropriate, when identifying a larger number of predictors, to perform regression analysis, which is fundamental for the creation of digital algorithms.

5. Evaluation of the dissertation and contributions

The dissertation is written on 127 standard pages and is structured in the following sections - introduction; aim and objectives; hypotheses; materials and methods; results; discussion; summary; conclusions; contributions. The text is illustrated with 34 figures and 5 tables. The literature reference contains 258 sources.

The introduction is clear and helps to get into the problem. The literature review is comprehensive, skillfully structured and easy to read. It clarifies the specific terminology, as well as the theoretical foundations for building a conceptual framework of the study.

The aim of the dissertation research is clearly formulated, and 12 logically related objectives are set for its achievement.

The design of the study is adequate and innovative. For its implementation the doctoral student performs significant practical activity aimed at bringing the implemented digital tool into technical readiness for use. The study included 40 patients with a confirmed diagnosis of substance use disorder. The main criticism of the study group is its small number and disparity in terms of sex distribution of participants.

The results are presented clearly and appropriately illustrated by figures and tables. They confirm the need for measures related to the care of patients with SUD given the high relapse rates. They also identify the need for reliable risk assessment tools, including digital ones. The results clearly show the high probability of predicting the dynamics of the characteristics of digital behavior such as engagement and time of activity. Unfortunately, most of the results are negative, which in part could indicate that conventional approaches such as stratification by socio-demographic and clinical data have limited application.

The discussion of the presented results was carried out competently and does not fail to reflect the shortcomings of the study. The analysis and discussion of the results would benefit from future interpretation through the prism of other theories related to behavioral disorders in the studied patient population.

The conclusions from the dissertation correspond to the set objectives. I would recommend merging those that concern technical specifications.

The literature reference contains 258 sources, of which 254 are in English and 4 - in Bulgarian. Most of them are from the last decade, which is understandable given the topic.

I accept the contributions of the dissertation study, which are of original, confirmatory and applied nature. Relapse in patients with addictions is a serious medical, social and economic problem. Efforts to create a standardized approach to it would have a role in limiting its effects at the individual and societal level. The research draws attention to the possibility of using digital methods for assessment and monitoring among the affected patients in our country. It also provides a valuable theoretical and practical basis for further research related to the use of metadata for digital phenotyping and identification of patients at risk. My recommendation is to expand the sample size of the study.

The dissertation can be defined as innovative or perhaps the more precise definition is relevant due to the fact that in almost all spheres of social life it was necessary to move to digitalization and remote-electronic assessment of the condition of patients, pupils, students, officials etc. In this sense, it can be assumed that this scientific development will be followed by others in the direction of digital-remote analysis of certain indicators and their dynamics over time.

6. Evaluation of publications and personal contribution of the candidate

Some of the results of the dissertation are presented in 1 article in Bulgarian in a peer-reviewed journal.

The doctoral student presented 1 participation in an international scientific forum.

I recommend publishing the rest of the results.

7. Summary

The presented summary presents the scientific work in a synthesized form and meets the requirements for layout and content.

CONCLUSION:

The dissertation contains scientific and applied results and meet the requirements for original contribution as per the Law of the Development of the Academic Staff in Republic of Bulgaria and the regulations of the Medical University of Varna. The presented materials and dissertation results fully meet the specific requirements of MU-Varna regarding the application of the national laws.

The dissertation shows that the doctoral student has in-depth theoretical knowledge and professional skills in the scientific specialty of psychiatry, demonstrating skills for independent research.

As a conclusion, I give my positive evaluation for the research presented in the dissertation, the summary, the results and contributions and give my recommendation to the scientific jury to award Dr Samuela Georgieva Krasteva with the educational and scientific degree "doctor" in psychiatry.

Date:

Author: ....

Assoc. Prof. Georgi Panov, MD, PhD