

REVIEW

By Prof. Vihra Krumova Milanova, MD, PhD

Head of Department of Psychiatry, UMHAT "Aleksandrovska", Sofia
on dissertation for award of educational and scientific degree "Doctor" of psychiatry to
Samuela Georgieva Krasteva, resident physician at Department of Psychiatry at UMHAT "Sv.
Marina"-Varna and teaching assistant at Medical University-Varna

Scientific advisor: Prof. Hristo Kozhuharov, MD, PhD, Department of Psychiatry and Medical
Psychology, Medical University-Varna

Topic: „Digital follow-up of patients with substance use disorders“

Professional field: 7.1 „Medicine“

Specialty : " Psychiatry " - 03.01.20

The review is requested with Order N P-109-508/18.11.2021 by the Rector of Medical Uni-
versity-Varna and based on Protocol N1/25.11.2021 of Faculty Council of Faculty of Medicine at
Medical University-Varna.

Biography and professional experience of the candidate:

Dr. Samuela Georgieva Krasteva was born in 1992. She graduated in medicine in
2017 at the Medical University "Prof. Dr. Paraskev Stoyanov "Varna. Since 2017 she is a
resident physician in psychiatry at the University Hospital "St. Marina ", Varna. Since
2018 she has been a teaching assistant at the Second Psychiatric Clinic, University Hospital
"St. Marina ", where she still works. Since 2018 she has been a full-time doctoral student at
the Department of Psychiatry and Medical Psychology at the Medical University of Varna.
She conducts seminars in psychiatry and medical psychology in for Bulgarian and interna-
tional medical students. Se is a member of the Bulgarian Medical Association and the
European Psychiatric Association.

The concept of digital health dates back to 1995, when J. Kveder, C. Colman and G. Gina published the monograph *The Internet of Healthy Things*. The advantages and possibilities of digital technologies over the traditional ways of medical care such as time, place, personal boundaries are presented. The coined term is e-patient and includes patients who are equipped, committed to health care through digital technology. In recent years, especially since the beginning of the COVID-19 pandemic, digital medicine has become more important and includes technologies such as digital diagnostics, biomarker tests, monitoring devices.

This dissertation is focused on the relationship between potential sociodemographic, individual and digital predictors of relapse and the time to onset in patients with substance use disorders in traditional and digital follow-up.

Analysis of disseration:

The dissertation consists of a literature review, aim and objectives of the study, hypotheses, materials and methods, results of own research, discussion of results, conclusions, contributions, summary, bibliography, presented on 115 pages and illustrated by 7 tables and 34 figures.

Regarding the literature review

The literature review shows a good knowledge of the problem - 258 literature sources are covered. It is divided into two parts: assessment of relapse in patients with addictions and digital methods in psychiatry.

A critical analysis of the current state of relapse assessment in patients with addictions has been made. Special attention is paid to the prevalence and risk factors for relapse. Socio-demographic, individual, metabolic and genetic factors are considered. The chance of achieving prolonged remission increases with the progression of the disease, which can be explained by the accumulation of health and social consequences. Favorable factors are female sex, the type of substance of abuse, as the correlative value is relatively highest for alcohol and low for opioids and stimulants; presence of a partner. High level of education and employment are also favorable factors. Family history, abuse of more than

one substance, addictive traits behavior are unfavorable factors.

Comorbidity between substance use disorders and other mental illnesses occurs in about 50% of cases. The presence of another mental disorder and / or somatic disease is an important factor in the occurrence of relapse.

In the second subsection of the review, dedicated to digital methods in psychiatry, the doctoral student presents digital tools for psychiatric assessment, follow-up and intervention, with a special emphasis on ecological momentary assessments - a method for studying patients with substance use disorders. Ethical and regulatory aspects of the use of digital products for medical purposes are also being discussed.

Critical notes

- The literature review is relatively larger compared to the other parts of the dissertation being half of the dissertation.
- Bulgarian authors are not included (eg T. Stankushev. Drug Addiction, Medicine and Physical Education, 1982; S. Toteva. Affective Disorders and Alcoholism. University Publishing House "Neofit Rilski", 2016; Jasmin Vasileva et al. with publications on neurocognitive studies of impulsivity as new markers of substance use disorders and new target interventions).
- No new publications related to genetic research are cited. In recent years, there has been great interest in genetic research on substance use disorders [Arcos-Burgos et al. ADGRL3 (LPHN3) variants predict substance use disorder. Translational Psychiatry (2019)9:42 <https://doi.org/10.1038/s41398-019-0396-7>].

Regarding the “Aim, objectives, hypotheses”

The aim and objectives and the hypothesis of the dissertation are formulated. The aim is to investigate the relationship between potential predictors of relapse and the time to onset in patients with substance use disorders in conventional and digital follow-up. To achieve the aim the author has set 12 objectives. Hypotheses presented in the scientific work are also presented.

Critical notes

The first of the set objectives is part of the Inclusion criteria (p.4).

Regarding "Materials and methods"

The author used a set of tools: a demographic data sheet; medical records; screening diagnostic tool (PHQ-9 |) to assess the presence and severity of depressive symptoms; screening diagnostic tool (GAD-7) to assess the presence and severity of anxiety symptoms; screening diagnostic tool (GAF) to assess the degree of personal and social functioning.

Modern statistical methods are applied. The positive side is the application of non-parametric analysis, where possible. On the other hand, these tests are not "strong" enough. Parametric analysis was also performed, eg for the indicator "days to relapse".

Critical notes

- The downside is the small number in the experimental group - only 20 patients. Significantly more patients are needed for statistical analysis.
- In the "Exclusion Criteria" in p. 1 the presence of comorbid mental illness is noted, but the results assess the presence of depressive and anxiety symptoms within the clinical characteristics.

Regarding "Results"

The "Results" section presents data on the studied group of patients, a total of 40: descriptive statistics, correlation analysis between socio-demographic characteristics and relapse, correlation analysis between clinical characteristics and relapse, correlation analysis between digital characteristics and relapse.

Critical notes

- The "Results" section is relatively small in size - only 21 pages, about 17% of the dissertation text.
- There is a lack of guiding explanations and interpretations of the data. Most of the results are illustrated mainly with figures (27 figures and 5 tables). One of the socio-demographic characteristics - marital status shows a strong correlation with the indicator - risk of relapse and time to its occurrence. There is no interpretation in the text of either the mentioned correlation or the marital status indicator.
- Figure 34 lacks a slash to reflect the relationship between age and days of activity.

Regarding the "Discussion"

The section "Discussion" outlines one of the most important characteristics predictive for relapse of the studied patients and aspects of digital behavior as an indirect marker of intrinsic motivation and self-efficacy. Given the results, it is possible not only to identify patients at risk, but also to predict the treatment outcome, ie it is possible for early intervention. The patient's assessment of low activity is a sign of relapse.

Regarding the "Conclusions"

The doctoral student made 14 conclusions, the first 4 of which are technically oriented. According to their significance and practical value, they need to be arranged in the appropriate order.

Critical notes

- According to the results and especially the very small number of patients in the study group, the conclusions are conservative, cautious and interpretive. Eg From the descriptive analysis it is established....
- The conclusions follow from the correlation between the variables and after p. 7 are the conclusions!
- There are no data on the type of substance use of the studied group of patients - alcohol, other psychoactive substances?

Regarding the "Contributions"

There are four contributions: two are theoretical contributions of an original nature; one with theoretical contribution of confirmatory character; one of applied character.

Critical notes

Contributions are rather established trends, without having a definite weight due to the very small number of patients studied.

Conclusion

The topic of the dissertation presented for review is contemporary and modern and

with perspective. The positive aspects of the dissertation are undoubted. Its purpose is specifically formulated. The stages of the research are presented as separate tasks.

For future research, as a continuation of the current one, I would recommend expanding the study group of patients, with the possibility of subgrouping according to diagnostic and other clinical criteria, analyzing the results and formulating more factors with predictive value for a more favorable course, outcome and prevention of relapse.

The dissertation summary reflects in a concise and generalized form the dissertation. The research and its description in the dissertation itself, in scientific activities and an article and in the abstract are the candidate's own work.

Dr. Krasteva has 1 publication closely related to the topic of the dissertation and 1 scientific presentation.

The scientific work of Dr. Samuela Georgieva Krasteva on "Digital follow-up of patients with substance use disorders" covers the requirements for qualitative and quantitative criteria of the LDAS for awarding the educational and scientific degree "Doctor" in the field of higher education "7. Health and Sports "in the professional field" 7.1. Medicine "and scientific specialty" Psychiatry ".

I give my positive assessment of the conducted research, the achieved results and contributions and I suggest to the esteemed scientific jury to vote positively for Dr. Samuela Krasteva, full-time doctoral student in psychiatry.

Sofia, 20.12.2021r

Signature:



Prof. Vihra Krumova Milanova, MD, PhD, DSc