

REVIEW

by Prof. Dr. Albena Kerekovska, PhD.

Department of Social Medicine and Health Care Organization
Faculty of Public Health
Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

on a dissertation for the awarding of the educational and scientific degree

„DOCTOR“

in the field of higher education "7. Health and Sports"
professional field "7.1. Medicine"

scientific specialty "**Social Medicine and Organization of Health Care and Pharmacy**"

of **Master in Pharmacy Maria Mitkova Ivanova** - PhD student in a full-time mode of attendance

Theme of the dissertation:

„PROFESSIONAL BURNOUT AND DEVELOPMENT OF THE PHARMACEUTICAL PROFESSION“

Supervisors:

Prof. Dr. Lora Hristova Georgieva, PhD
Assoc. prof. Anna Hristova Todorova, PhD

A rationale for the review: Order No. P-109-316 /26.06.2023 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna for the appointment of the Scientific Jury and Protocol No. 1 / 07.07.2023 of the first meeting of the Scientific Jury.

Details of the procedure

Maria Mitkova Ivanova has undergone training in the doctoral program "Social Medicine and Organization of Health Care and Pharmacy" in the professional field 7.1. "Medicine", a field of higher of education 7. "Health and Sport". The PhD student was enrolled in the full-time mode of attendance by Order No P-109-45 / 31.01.2020 of the Rector of the Medical University - Varna to the Department of Social Medicine and Health Care Organization with supervisors Prof. Dr. Lora Hristova Georgieva PhD and Assoc. prof. Anna Hristova Todorova, Ph.D. with the dissertation on topic "Professional burnout and development of the pharmaceutical profession".

The PhD student has successfully passed the examinations for the minimum criteria for acquiring a PhD degree; she has completed all the activities stipulated in the individual curriculum, has collected the required credits, and has received positive attestation marks. The doctoral studies have been completed in time and the Master in Pharmacy Maria Mitkova Ivanova was deregistered with the right to defense by Order No R-109-316/26.06.2023 of the Rector of Medical University - Varna. Based on the decision of the Departmental Board of the

Social Medicine and Organization of Health Care Department (report ref. No. 104-1462 of 14.06.2023) and the decision of the Faculty Board of the Faculty of Public Health (Protocol No. 207/19.06.2023), a defence procedure before a Scientific Jury was initiated by Order No. R-109-316/26.06.2023 of the Rector of Medical University - Varna.

The candidate has submitted all the necessary documents for the procedure, complying with the requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations on its Implementation and the Regulations for the Development of the Academic Staff of Medical University - Varna.

Brief biographical data about the author of the work

Maria Ivanova was born in 1976 in the city of Varna. In 1997 she graduated from the Medical College – Varna with a degree in Pharmacy Assistant. In 2004 she was awarded a Bachelor's degree in Psychology from the Varna Free University "Chernorizets Hrabar", and in 2005 she obtained a Master's degree in Applied Psychology from the latter university. In the period 2013 - 2018 she studied in the specialty "Pharmacy" at Medical University - Varna and in 2018 she obtained a Master's degree in this specialty.

Maria Ivanova started her work experience in 1999 as a Pharmacy Assistant and worked in the same position in the pharmacy network of the town of Varna until 2010. Between 2011 and 2012 she was employed as a psychologist in the NGO "Mother and Baby". From 2012 to 2018 she continued working as Pharmacy Assistant and from 2018 as a Master of Pharmacy, including in the pharmacy of the Medical University of Varna "Medunipharm 2".

She started her academic career in 2019 as an Assistant at the Department of Organization and Economics of Pharmacy at the Faculty of Pharmacy of MU - Varna. Currently she is an administrative assistant in the same department. She has an intensive teaching activity and conducts practical classes in the courses "Social Pharmacy and Pharmaceutical Legislation", "Pharmacoeconomics", "Medical Devices" to students of the specialty "Pharmacy" and "Pharmaceutical Regulation and Economics" in the Master's program "Technology Transfer and Innovation in Pharmacy".

Assistant-professor Ivanova is on the staff list for the specialty "Organization of the distribution and pharmacy network". She participates in two research projects at the Faculty of Pharmacy: "Current trends and occupational stress in pharmaceutical service" and "Integrated strategies and specific models for prevention of occupational burnout and coping with stress in health professionals".

She has 20 scientific publications in Bulgarian and foreign journals.

Assist-prof. Ivanova is a member of the Bulgarian Pharmaceutical Union.

Relevance and Significance of the Dissertation

The topic of the dissertation is focused on an exceptional area in healthcare - professional burnout in medical professionals and opportunities for its prevention. The specific research focus is on the pharmaceutical profession and the challenges related to its contemporary development, a prerequisite for professional burnout of pharmacists - a significant and understudied problem in our country.

The development of the pharmaceutical profession, the changing legal framework in the pharmaceutical sector, and the dynamic working environment with innovations in the organization

and working methods of the pharmacist in modern society, face new challenges. Heavy workloads and extreme stress, especially in the context of the Covid-19 pandemic, are a prerequisite for a high level of professional burnout among Pharmacists. Burnout negatively affects their effective communication with other health professionals and with patients, leading to a deterioration in the quality of pharmaceutical care provided.

This is the first scientific study in the country, to cover in full the problem related to occupational burnout in pharmacists, its recognition, predisposing factors, and opportunities for prevention. Investigating the factors in the pharmacy work environment and regulatory changes in the pharmaceutical sector that influence the occurrence of burnout, and developing guidelines for detecting occupational stress manifestations and recommendations for addressing them, are of great practical importance for preventing occupational burnout in pharmacists and for improving the quality of pharmaceutical care and services provided.

Structure and content of the dissertation

The presented dissertation has a total length of 156 pages and is illustrated with 20 tables and 21 figures. Its structure is logically laid down and balanced and includes Introduction, Chapter One, Literature Review; Chapter Two, Aim, Objectives, Material and Methods; Chapter Three. Results and Discussion; Chapter Four. Conclusions and recommendations; Conclusion; Contributions; Bibliography and one appendix. A list of abbreviations used is placed at the beginning of the dissertation and a list of publications related to the dissertation is placed at the end.

The literature used is accurately described in the bibliographic reference. 216 references are cited, of which 53 in Cyrillic and 163 in Latin.

The **literature review** is focused, thorough, and well-structured. The dissertation demonstrates a broad and up-to-date awareness, as well as the ability to summarize, systematize, bring out significant issues, and thoroughly analyze and interpret the scientific literature in the field under study.

A historical overview of the development of the pharmaceutical profession worldwide is presented, with a specific focus on the development of pharmaceutical education and the legislative regulation of the pharmaceutical profession in Bulgaria. The role of the pharmacist and its development in modern society is fully presented. Emphasis is placed on the development of the concept of pharmaceutical care and the benefits of their proper conduct.

Special attention is paid to occupational burnout - physical signs, behavioral manifestations, dimensions, consequences, dynamics of course, and etiology of occurrence. Results from studies of occupational burnout in health professionals, including pharmacists, are summarized. The literature review concludes by outlining trends in the development of the pharmacy profession, the associated challenges facing the contemporary master pharmacist, and factors contributing to occupational stress and burnout. The lack of sufficient research on professional burnout among pharmacists in Bulgaria is highlighted and the need to investigate its prevalence and the factors of the professional environment contributing to its manifestation is outlined.

The **objective** of the scientific work is clearly and precisely defined - "To analyze the current scope of activity of the pharmaceutical profession, the associated occupational stress and the factors that affect it".

There are seven **main tasks** aimed at achieving the main objective. They are logically coherent and cover the problem fully. The three working hypotheses formulated are consistent with the set objectives.

The **methodology** of the research, which includes documentary and sociological (survey) methods, as well as the assessment of the professional burnout of master pharmacists practicing in pharmacies servicing the population in the city of Varna, is presented in detail.

The research toolkit is described in detail. The questionnaire for the survey of Master Pharmacists was developed by the doctoral candidate for the purpose of the research and included three groups of questions - related to the demographic characteristics of the respondents; related to the specifics of working in a pharmacy to recover contemporary challenges, and questions related to the problems of Master Pharmacists in the context of the COVID-19 pandemic. Assessment of professional burnout was accomplished using a validated tool to assess burnout among healthcare professionals, the Maslah Burnout Inventory. Appropriate statistical methods were applied to ensure the validity and reliability of the results obtained.

In all phases of the study Ass. Ivanova demonstrated a very good level of mastery of the methodology for conducting scientific research.

The **limitations of the study** outlined by the doctoral candidate at the end of Chapter Two are very good.

Results

The results of the self-study are presented comprehensively in several parts and are well structured according to the objectives.

The results reveal a variety of challenges facing pharmacists in modern society related to: access to pharmaceutical services and medicines; legislation; filling prescriptions paid for by the - National Health Insurance Fund (NHIS); technical difficulties in their work; the organisation of the working environment and the provision of pharmaceutical care. These predispose to the development of a high level of professional burnout. The most serious problems identified by pharmacists are in the filling of prescriptions paid for by the NHIF, related to frequent changes in regulations and administrative difficulties in processing prescriptions.

Survey data showed that 75% of pharmacists surveyed had at least one scale associated with high burnout, and 53% had two or all three scales associated with high levels of professional burnout. The largest proportion of those surveyed (51%) scored high on the scale associated with depersonalization. Research suggests that male respondents are more susceptible to developing occupational burnout. Young age and work experience of up to 5 years are predisposing factors for occupational burnout. The position held and the place of work (chain pharmacy or independent pharmacy) do not significantly influence the level of professional burnout.

When analyzing the factors related to the specifics of the pharmacist's work environment, the high level of professional workload (in 50% of those surveyed), the shortage of staff (30%), the large flow of patients (31%) and the wide range of medicinal products (28%).

Working with prescriptions paid for by the NHIS shows a significant impact on the burnout rate. Administrative difficulties in processing prescriptions, frequent changes in legal frameworks, lack of prior information about changes in the way medicines are dispensed, lack of precise instructions and the time taken to process prescriptions are factors hindering master pharmacists and contributing to their professional burnout.

Lack of opportunity to implement pharmaceutical care is a prerequisite for a high level of professional burnout. Lack of time, motivation, and employer incentive to perform pharmaceutical care were identified as problems by the pharmacists surveyed and were associated with high rates of emotional exhaustion and depersonalisation and low rates of professional achievement.

Valuable results obtained in the study revealed the impact of communication problems with other health professionals and with patients on the level of burnout in pharmacists. A very large proportion of the pharmacists surveyed experienced conflicts in communicating with other medical professionals (73%) and with patients (98%). The results revealed a statistically significant influence of communication difficulties on emotional exhaustion and depersonalization in respondents.

The relationship between professional burnout through its three dimensions (high emotional exhaustion, high depersonalization, and low professional performance values), patient communication, and quality of pharmaceutical care is examined. Elevated levels on the emotional exhaustion and depersonalization scales were associated with an increase in the frequency of conflict with the patient, responsively with a deterioration in the quality of pharmaceutical care, which is essential for an increase in therapy errors, a decrease in compliance, an increase in medication-related problems, and an increase in health care costs.

Of considerable practical importance are the results revealing problems related to access to pharmaceutical services and medicines. Current significant problems mentioned by respondents are: the shortage of medicines in the pharmacy network (48% of the surveyed persons), access to pharmaceutical services in small settlements (44%). A large percentage of pharmacists (49%) stated that they would work in a small locality for motivating pay. The low availability of 24-hour pharmacies was identified as a problem by 24% of pharmacists surveyed, with a large proportion (72%) expressing a willingness to work night shifts.

Particular attention is paid to the serious problems in patient services and in the drug supply process during the Covid-19 pandemic. The problems that made the work of pharmacists most difficult during this period were: a tendency to overstock over-the-counter medicines, nutritional supplements and personal protective equipment due to panic among patients; shortages of certain medicines; lack of disinfectants and personal protective equipment; and technical difficulties in handling NHIS prescriptions when switching to electronic format. The role of the pharmacist in countering the infodemic during the epidemic of Covid-19 is presented in detail.

The doctoral student's synthesis of results regarding factors related to the organizational environment, communication difficulties, and pharmaceutical care constraints that impact the three scales (dimensions) of burnout, with the revealed relationships presented graphically are very valuable.

Based on the survey, a brochure on the recognition and prevention of burnout among pharmacists has been developed, presenting the symptoms, stages, and ways to prevent burnout.

Conclusions and recommendations

Seven conclusions are drawn, which are clearly formulated and logically follow from the results obtained.

The findings categorizing the challenges of pharmacists working in pharmacies to serve the population, such as legislative changes and administrative difficulties related to changes in the legal framework and requirements concerning the dispensing of medicines paid by the NHIF; shortages of essential medicines and lack of availability in the pharmacy network, as well as the lack of time

to provide pharmaceutical care due to a shift in focus from counseling to administrative duties, are of practical value.

In addition, in the context of the COVID 19 pandemic, the lack of personal protective equipment, the trend for irrational use of medicines, the infandemic and panic among the public, as well as the administrative regulations and prevention measures of COVID-19 add to the challenges facing pharmacists.

Dynamic legal changes and administrative workload, large numbers of patients served, inadequate staffing, and limitations on the delivery of pharmaceutical care were highlighted as the factors most influencing professional burnout among pharmacists.

Valuable findings address the impact of professional burnout on pharmacists' impaired communication with other health professionals and with patients, which further impairs the quality of pharmaceutical care provided in pharmacies.

Pharmacists' dissatisfaction with working in a pharmacy and the reasons for it are highlighted.

Based on the results obtained in the research, recommendations for specific actions to the legislator and the professional organization of pharmacists in Bulgaria to reduce professional burnout among pharmacists and create conditions for better pharmaceutical care for patients are formulated. Leading among them are: allowing more time in putting into practice the new regulatory requirements and informing and training pharmacists in advance; improving access to pharmaceutical care in small settlements by providing incentives to pharmacists to work there; taking measures for administrative relief of pharmacists; introducing training programs for patients (to improve rational drug use and prevention of infodemia in crisis situations); introductory training for young professionals to raise the communication skills, building successful strategies for stress management and conflict resolution. Trainings aimed at team managers to optimise the organisation of the working environment, prevent professional burnout and increase staff motivation.

Contributions of the thesis

The contributions are predominantly original in nature - having theoretical-cognitive and practical-applied importance.

An in-depth theoretical analysis of the role of the pharmacist in contemporary society is made and the challenges faced are identified. The difficulties in the working environment of pharmacists practicing in community pharmacies during the COVID-19 pandemic are analyzed. For the first time, the factors influencing the level of professional burnout of pharmacists in the country are examined. For the first time, the attitudes of pharmacists to working in 24-hour pharmacies and small towns, which is essential for population access to medicines and pharmaceutical care in these areas, were examined.

An original contribution with great potential for practical applicability is the discovery of burnout factors among pharmacists, which would serve to streamline the process of administering and processing documentation in pharmacies and free up resources for the efficient delivery of pharmaceutical care.

Of practical relevance is the original brochure developed by the doctoral student for the prevention of professional burnout of practicing pharmacists.

Publications on the dissertation problems

In connection with her dissertation, the doctoral student submitted three full-text publications, one of which was published in an international journal. Two participations in scientific conferences in the country, one of them international are also noted.

Evaluation of the paper

The paper has been prepared as required and in synthesized form fully reflects the content of the thesis. It is developed in a volume of 55 pages, very well illustrated with highly informative figures and tables. It is accompanied by a list of publications related to the dissertation topic.

Conclusion

The dissertation of Ass. Maria Ivanova " Professional burnout and the development of the pharmaceutical profession" is an up-to-date, complete, and thorough scientific work. It is well structured, with clearly defined aim and objectives. The design of the research is adequately selected. The methodology is complex and competently applied. The results are presented correctly and comprehensively. The conclusions are clearly formulated and form the basis of the dissertation's contributions. The contributions are predominantly original and have a high potential for practical applicability. The thesis shows that the candidate possesses in-depth theoretical knowledge in the scientific field and the ability to carry out independent scientific research.

The dissertation fully meets the requirements of the Academic Staff Development Act of the Republic of Bulgaria, the Regulations for its Application, and the Regulations for the Development of the Academic Staff of Medical University - Varna for the Acquisition of the Educational and Scientific Degree "Doctor".

Focusing on a significant but understudied problem in our country, this paper represents an important step toward uncovering the factors leading to professional burnout in pharmacists and opportunities for its prevention, which is a prerequisite for improving pharmaceutical care for patients.

The topical subject matter, the in-depth nature of the conducted research, the applied complex methodology, the obtained results, the drawn conclusions, and the contributions of a mostly original and applied nature, give me reasons to give a positive assessment of the dissertation work and to confidently propose to the Scientific Jury of As. Maria Mitkova Ivanova to be awarded the educational and scientific degree "Doctor" in the scientific specialty " Social Medicine and Organization of Health Care and Pharmacy " in the professional field 7.1. "Medicine".

01. 08. 2023
Varna

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