STATEMENT

by Assoc. Prof. Evgeniya Kuncheva Dimitrova, PhD

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on a dissertation for the award of the educational and scientific degree of **Doctor (PhD)**
professional field: *Public Health*
doctoral programme: *Public Health Management*

Author: Denitsa Ivanova Dimitrova

Mode of doctoral study: full-time

Department: Social Medicine and Health Care Organisation – Faculty of Public Health, Medical University – Varna

Title: KNOWLEDGE, ATTITUDES AND PRACTICES RELATED TO ANTIMICROBIAL RESISTANCE IN DERMATOLOGICAL CARE

Research supervisor:
Prof. Klara Dokova, MD, PhD

1. General overview of the procedure and the doctoral candidate

The set of materials submitted in hard copy and electronic format **complies** with the Regulations for the Development of the Academic Staff at Medical University – Varna.

Asst. Prof. Denitsa Dimitrova was born on 7.04.1982. She currently has over 20 years of professional experience, including 13 years as a physiotherapist at Medica-Albena Medical Centre – Varna, Angel Face Beauty Salons OOD, Varna, and Skin Line Varna OOD.

Asst. Prof. Dimitrova worked for three years as the manager of Salon Pret A Porter OOD, Varna, and has been the manager of TIP GROUP EOOD, Varna, since May 2016.

In 2004, the doctoral candidate graduated with a Bachelor's degree in Kinesitherapy from the University of Ruse 'Angel Kanchev'. In 2005, she obtained a Master's degree in the same subject from that university. In 2014, she completed a Professional Bachelor's degree in the Medical Cosmetician programme.

Asst. Prof. Dimitrova's interest in teaching has been clearly evident since 2014. Following a competitive selection procedure, she was appointed as a practical training instructor for students in the Medical Cosmetician programme at the Medical College of Medical University – Varna, where she continues to work.

2. Relevance of the Topic

The World Health Organization identifies antimicrobial resistance (AMR) as a priority threat to public health, as infections caused by resistant microorganisms lead to increased morbidity and mortality and longer hospital stays. This increases the financial burden on health systems. Many common skin conditions, such as acne vulgaris, are associated with the use of topical or systemic antibiotics, particularly among adolescents and young adults. Frequent and prolonged antibiotic use can lead to resistant strains and changes in the skin microbiome. These conditions should therefore be considered not only as dermatological and aesthetic concerns, but also as conditions with implications for public health and AMR prevention. Major factors contributing to ineffective antibiotic use include self-medication and inadequate infection

control in cosmetic practice, among others. Data from Bulgaria likewise indicate high levels of antibiotic use and insufficient awareness of how antibiotics work. Furthermore, the current regulatory framework governing beauty salons was developed more than three decades ago and does not adequately reflect contemporary concepts of infection prevention and control, risk management and AMR containment.

3. Knowledge of the Research Problem

Asst. Prof. Dimitrova has a very good understanding of the current state of the research problem and offers an insightful appraisal of the available literature through critical analysis.

The synthesis of evidence on cross-infection in cosmetic and dermatological practice shows that the risk of AMR is not merely theoretical, but is supported by empirical observations of contamination of instruments, products and surfaces. Specific gaps in the knowledge and behaviour of young patients and cosmetic practitioners are also identified. Particular attention is paid to the international dimension of the problem: WHO has adopted a Global Action Plan on AMR, while the European Union implements its own plan, recommending that Member States introduce strict controls on antibiotic sales, national programmes for rational antibiotic use and public awareness campaigns. Bulgaria has adopted a National Programme for Action against AMR (2026–2029), whose first objective is to increase public awareness of issues related to AMR and excessive antibiotic use.

4. Research Methodology

The main aim of the present study is to analyse two aspects of the relationship between AMR and the work of cosmeticians:

- To examine the knowledge, attitudes and behaviour of young people with acne regarding self-medication with antibiotics, with a view to identifying training needs and raising awareness of AMR.
- To examine cosmeticians' knowledge, attitudes and professional practices relating to infection control and the prevention of antimicrobial resistance in dermatological care.

The research methodology provides for a comprehensive sociological study using questionnaire surveys, documentary analysis and statistical methods. The primary data were entered and prepared for analysis in MS Excel, while statistical processing was performed using IBM SPSS Statistics, version 23. MS Excel was used for the graphical presentation of the results.

The proposed methodology is appropriate to the aims of the study and may enable the working hypotheses formulated in the dissertation to be addressed.

5. Characteristics and Assessment of the Dissertation and Its Contributions

The dissertation, entitled Knowledge, Attitudes and Practices Related to Antimicrobial Resistance in Dermatological Care, is structured in accordance with the requirements for this type of academic work. It comprises 165 pages and is illustrated with 8 tables, 26 figures and 2 appendices.

In Chapter One, Literature Review, the doctoral candidate critically analyses the available literature on the subject. She defines the key concepts used in the dissertation and convincingly establishes the relevance of the problem worldwide, including in Bulgaria. She identifies the main causes of the emergence of AMR and demonstrates that it is a complex problem requiring an integrated, unified approach—One Health—which recognises human, animal and environmental health as interconnected. She examines in detail the global initiatives and recommendations of WHO, the UN and the European Union for combating AMR. The Bulgarian regulatory framework has also been studied in depth, including the National Action

Plan against Resistance and the current National Programme for Combating Antimicrobial Resistance. The doctoral candidate also examines the relationship between AMR and skin care, particularly in acne, focusing on young people and their behaviour in response to the condition, including self-medication with antibiotics and the desire for rapid results because of the condition's considerable psychosocial impact. Substantial attention is devoted to cross-infection and antimicrobial resistance in beauty salons. On the basis of the literature reviewed, the doctoral candidate establishes that infection control and AMR in the cosmetic sector constitute an interdisciplinary problem at the intersection of public health, professional ethics, regulation and quality management. She describes both international requirements and recommendations for infection prevention and control in beauty salons and the Bulgarian regulatory framework, providing a critical analysis of regulatory differences in the application of standard precautions in countries such as the Netherlands and the United Kingdom. In conclusion, the doctoral candidate demonstrates that AMR is globally recognised as one of the greatest threats to public health in the twenty-first century.

Chapter Two, 'Aim, Objectives and Research Methodology', provides a detailed account of the methodology of the study, including its aim, objectives, hypotheses, design and stages.

In Chapter Three, 'Results and Discussion', the doctoral candidate presents the findings of her studies in 5 subsections.

Asst. Prof. Dimitrova examines knowledge and attitudes, as well as the frequency and patterns of self-medication with antibiotics for skin conditions among young people in Bulgaria. The study includes 234 participants aged 18 to 35 years, whose sociodemographic characteristics are described. She establishes a statistically significant association between self-reported skin type and acne status among the young people participating in the study. She demonstrates the psychosocial consequences of the condition and identifies statistically significant relationships between the presence of acne and anxiety levels, and between the presence of acne and feelings of loneliness, suggesting that acne is a likely cause of impaired quality of life in the target group.

In the second part, the doctoral candidate examines cosmeticians' knowledge, attitudes and practices relating to infection control and AMR in beauty salons in Bulgaria. The study includes 256 practising cosmeticians from across the country, whose sociodemographic characteristics are described. Asst. Prof. Dimitrova also examines cosmeticians' awareness of the risks of infection and AMR associated with their professional activities. The assessment of the target group's awareness reveals high self-rated awareness alongside gaps in theoretical knowledge that are directly relevant to practice.

The doctoral candidate pays particular attention to cosmeticians' attitudes towards compliance with the rules of asepsis, disinfection and instrument handling in their practice, and to their knowledge and correct use of disinfectants and personal protective equipment. Of particular concern is the finding that more than half of the respondents (53.8%) have not been vaccinated against hepatitis B, placing them at increased risk of occupational infection following incidents involving exposure to blood and other potentially infectious biological materials. The examination of professional practices relating to AMR prevention also deserves particular attention.

Overall, cosmeticians' practices demonstrate a high level of commitment to hygiene and antiseptic measures, while also revealing limited access to structured training in antimicrobial resistance.

In the third part, the doctoral candidate analyses the findings of her own studies. She supports her findings with similar results from studies conducted in the Balkan region, Western Europe, countries of the Eastern Mediterranean, the Middle East and elsewhere. The findings of the present study indicate that AMR remains insufficiently covered in cosmeticians' training and knowledge assessment, both in Bulgaria and internationally. The gaps identified suggest that some cosmeticians lack the foundations needed to assess the relationship between inappropriate antimicrobial use, infection control and public health risk. The detailed description of practices relating to infection control and AMR in beauty salons, together with the recommendations of WHO and CDC, deserves particular attention.

The systematic review of international and national documents in the next part shows that infection prevention and control in cosmetic services increasingly rely on an integrated, risk-based approach combining hygiene requirements, professional competence, organisational standards and regulatory oversight. Despite differences in national approaches, the international guidelines examined consistently emphasise the importance of standard precautions and practitioner training.

In the final part, Asst. Prof. Dimitrova provides an in-depth account of the main limitations and strengths of her study, including the absence of a register of cosmeticians in Bulgaria and the use of self-report questionnaires. A major strength of the study is its comprehensive nature, combining a systematic review of the scientific literature, international recommendations, official documents and national legislation with two separate quantitative studies among key target groups: young people and professional cosmeticians. Another strength is the integrated approach to the problem, which brings acne prevalence, self-medication with antibiotics, infection control in cosmetic services and antimicrobial resistance together within a single research framework.

Chapter Four, 'Conclusions, Contributions and Recommendations' – I agree with the 11 principal conclusions drawn by the doctoral candidate at the end of the dissertation.

Recommendations are addressed to the legislature, higher medical education institutions and the Bulgarian Association of Health Care Professionals (BAPZG), the Ministry of Health and Regional Health Inspectorates, health education institutions and professional cosmeticians, as well as health institutions and public health specialists. These recommendations could enhance the effectiveness of cosmeticians' continuing education in Bulgaria and improve the safety of patients using their services.

I agree with the principal theoretical and practical contributions of the dissertation identified in the work.

6. Assessment of the Publications and the Doctoral Candidate's Personal Contribution

Asst. Prof. Dimitrova has submitted 2 publications relating to the dissertation: 1 in Social Medicine 2023; 31(1): 11–19 and 1 in Scripta Scientifica Salutis Publicae. 2026; 12. The articles meet the requirements for scientific publication activity.

Asst. Prof. Dimitrova's work as a whole demonstrates her ability to conduct independent scientific research. In preparing her dissertation, the doctoral candidate demonstrates conscientiousness, purposefulness and impartiality in conducting the study and observing the principles of research ethics.

Following a thorough analysis of the dissertation, I have no critical remarks concerning the doctoral candidate.

7. Dissertation Abstract

The dissertation abstract is structured in accordance with the requirements, comprises 68 pages and reflects the principal findings of the dissertation.

CONCLUSION

The dissertation contains scientific, applied research and practical findings that constitute an original contribution to knowledge and meet all the requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations of Medical University – Varna.

The dissertation demonstrates that the doctoral candidate, Denitsa Ivanova Dimitrova, possesses in-depth theoretical knowledge and professional skills in the scientific specialty of Public Health Management, and shows the qualities and skills required to conduct independent scientific research.

In view of the above, I confidently give a **positive assessment** of the research presented in the dissertation and dissertation abstract reviewed above, and of the findings and contributions achieved, and **recommend that the esteemed Scientific Jury award the educational and scientific degree of Doctor (PhD)** to Asst. Prof. Denitsa Ivanova Dimitrova, a doctoral student in the doctoral programme in Public Health Management.

26.10.2026

Statement prepared by:

Заличено на основание чл. 5, §1, б. „В“ от Регламент (ЕС) 2016/679

(Assoc. Prof. E. Dimitrova, PhD)