OPINION

by Prof. Ivelina Asparuhova Yordanova-Vasileva, MD, PhD

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On the dissertation submitted by: Denitsa Ivanova Dimitrova

Title: "Knowledge, Attitudes and Practices Related to Antimicrobial Resistance in Dermatological Care" For the award of the educational and scientific degree of "Doctor"

Professional field: 7.4 Public Health; Doctoral Programme "Public Health Management"

By a decision of the Faculty Council of the Faculty of Public Health at the Medical University of Varna, recorded in Minutes No. 266/23 September 2026, and pursuant to Order No. R-109-322/30 September 2026 of the Rector of the Medical University of Varna, I was elected as a member of the Scientific Jury. On the grounds of Minutes No. 1/13 October 2026, I was assigned to prepare this review as part of the procedure for awarding the educational and scientific degree of "Doctor" to Denitsa Ivanova Dimitrova, a full-time doctoral student in the Doctoral Programme "Public Health Management" at the Department of Social Medicine and Healthcare Organisation, Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

The submitted set of documents complies with the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Implementation, and the Regulations on the Development of the Academic Staff at the Medical University of Varna.

Career development of the doctoral candidate. Denitsa Dimitrova graduated with a Bachelor's degree in Kinesitherapy in 2004 from the Angel Kanchev University of Ruse and obtained a Master's degree in the same specialty in 2005. Between 2011 and 2014, she completed her studies at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, where she obtained the Professional Bachelor's degree in Medical Cosmetology. In 2023, she was enrolled as a full-time doctoral student in the Doctoral Programme "Public Health Management" at the Department of Social Medicine and Healthcare Organisation of the Medical University of Varna, with a dissertation entitled "Knowledge, Attitudes and Practices Related to Antimicrobial Resistance in Dermatological Care". Since 2014, she has held the position of Practical Training Lecturer at the Medical College – Varna, part of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna. In this role, she leads practical classes and pre-graduation internships and actively participates in the development and updating of curricula and teaching materials. She has also participated as a researcher and as the administrative and financial coordinator of a research project on the subject of her dissertation.

Relevance of the topic. One of the most serious challenges facing contemporary healthcare is antimicrobial resistance (AMR), which represents a growing threat to public health. Current scientific

research indicates that theoretical knowledge about antimicrobial resistance is not always sufficient to ensure the development of appropriate behaviour. At present, there is a lack of comprehensive studies that simultaneously analyse knowledge, attitudes and practices related to the use of antibiotics for skin conditions, as well as infection prevention and control in cosmetic practice and the limitation of AMR. The relevance of the dissertation is determined by the widespread use of antimicrobial agents in the treatment of dermatological diseases, therapeutic difficulties, increased morbidity, prolonged hospital stays, and the need to improve health literacy among medical personnel.

Structure, characteristics and assessment of the dissertation. The submitted dissertation comprises 165 pages in total, including: literature review – 50 pages; aim, objectives, research hypotheses, materials and methods – 11 pages; results of the original studies – 34 pages; discussion and synthesis of the results and conclusions – 25 pages; conclusion, recommendations and contributions – 7 pages. The dissertation is illustrated with 8 tables and 26 figures and includes two appendices. The bibliography contains 188 references in Latin script.

In the literature review, the author addresses antimicrobial resistance as a global and national threat. Self-medication, unnecessary antibiotic prescribing, and environmental pollution caused by wastewater from hospitals and pharmaceutical manufacturing facilities containing antibiotic residues and resistant microorganisms create conditions conducive to the development of resistant microbial strains. Particular attention is paid to skin care and common dermatological conditions such as acne vulgaris, cross-infections in beauty salons, and the risks of bacterial, fungal and viral infections, including hepatitis B and C associated with procedures that disrupt the skin barrier. The working environment in beauty salons and the close contact between professionals and clients may also create conditions for the transmission of airborne infections. Special attention is given to the products used for environmental disinfection, which have a direct impact on the resistance of the skin microbiota. The doctoral candidate's examination of regulatory differences in the implementation of standard precautionary measures applicable to beauty salons in different countries is noteworthy. Despite substantial differences among national regulatory models, the requirements for beauty salons show a clear convergence around the universal principles of standard precautions established by the World Health Organization (WHO). In her review, the author also highlights the Bulgarian regulatory framework governing infection prevention and control in beauty salons. A large body of literature from scientific journals relating to knowledge, attitudes and everyday practices has been analysed in depth, demonstrating the doctoral candidate's very good command of the subject.

The aim of the dissertation is correctly formulated, and five objectives have been defined to achieve it. Six research hypotheses have also been developed for the purposes of the study. The materials and methods have been designed in a methodologically appropriate manner. A systematic review of scientific publications and official documents issued by health institutions, professional organisations and regulatory authorities was conducted. Searches were performed in English and Bulgarian in the PubMed and Google Scholar electronic databases. Two original studies were conducted to address the stated objectives:

Between September and November 2025, a descriptive cross-sectional study was conducted to examine the knowledge, attitudes and behaviour of young people aged 18–35 years regarding the

prevalence of acne, self-medication and the use of antimicrobial agents. The inclusion and exclusion criteria for the study were clearly defined. A questionnaire consisting of 58 questions, structured into six thematic sections, was developed.

Between June and August 2025, a descriptive cross-sectional study was conducted among practising cosmeticians in Bulgaria to assess their knowledge, attitudes and practices related to infection control in their professional work, as well as their views on AMR. The questionnaire comprised 45 questions, structured into six thematic sections. No similar studies had previously been conducted in Bulgaria. Appropriate statistical analysis methods were used, with the analyses performed using IBM SPSS Statistics, version 23. The results were presented graphically using MS Excel. The methods were selected in accordance with the research objectives, are informative and are described in detail.

Results and discussion. The results of the studies provide clear answers to the stated objectives. They are accurately illustrated in tables and figures, explained in detail and statistically substantiated. The studies examined knowledge and attitudes, as well as the frequency and patterns of antibiotic self-medication for skin problems among young people. The studies included a sufficient number of participants. Socio-demographic characteristics, the frequency and severity of acne, sources of information, awareness of the causes and factors affecting the course of the disease, attitudes towards treatment options, and views on self-medication were examined. The findings indicate that self-medication for acne is widespread, accompanied by gaps in antibiotic literacy and the presence of risky behavioural patterns. The study among professional cosmeticians reveals a discrepancy between high levels of self-assessed competence and actual knowledge and implementation of some infection-control measures. The results support the research hypotheses to varying degrees. The synthesis of the findings shows that preventing AMR requires simultaneous action targeting individual behaviour, professional practice and the regulatory environment. Improving antibiotic literacy, developing national guidelines for infection control in cosmetic services, and introducing structured continuing education for professional cosmeticians on infection control and reducing the risk of AMR are identified as key priorities.

Conclusions and contributions to practice. Eleven conclusions and five contributions have been formulated, providing an overview of the scientific and research work carried out at all stages of the studies. I accept the contributions identified by the candidate. The recommendations developed by her have practical value and are addressed to the following groups: legislators; professional organisations and educational institutions; the Ministry of Health; Regional Health Inspectorates; professional cosmeticians; beauty salons; healthcare institutions; and public health specialists. These recommendations could be used in updating the regulatory framework and developing training programmes and educational initiatives. Two full-text publications in Bulgarian scientific journals have been submitted in connection with the dissertation.

Conclusion. The dissertation submitted by Denitsa Ivanova Dimitrova fully meets the criteria set out in the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Implementation, and the Regulations on the Development of the Academic Staff at the Medical University of Varna for the award of the educational and scientific degree of "Doctor" in professional field 7.4 Public Health. Her research makes a clearly identifiable contribution to Public Health

Management in the Republic of Bulgaria. The candidate's contributions are scientific, applied scientific, methodological and educational in nature. All of the above provides me with grounds to vote in favour and to confidently recommend that the esteemed members of the Scientific Jury give their positive assessment and award the educational and scientific degree of "Doctor" to Denitsa Ivanova Dimitrova.

Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
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Pleven, 2 November 2026

Prof. Ivelina Yordanova-Vasileva, MD, PhD