

OPINION

by Dr. Doncho Stoyanov Donev, Associate Professor at Burgas Free University

on the dissertation for awarding the educational and scientific degree "Doctor"
in: Field of Higher Education 3. Social, Economic and Legal Sciences.
Professional direction 3.2. Psychology
Doctoral program Positive Psychology

Author: Radoslav Dimitrov Sterev

Topic: The impact of vibro-acoustic stimulation on psychological resilience in patients with chronic pain.

Scientific Supervisor: Professor Dr. Yuriy Yanakiev

1. General Presentation of the Procedure and the Doctoral Candidate

By order No. RD-22-727 of 21.03.2025 of the Rector of Plovdiv University "Paisii Hilendarski" (PU), I was appointed as a member of the scientific jury to ensure the procedure for the defense of the dissertation on the topic "The impact of vibro-acoustic stimulation on psychological resilience in patients with chronic pain." for obtaining the educational and scientific degree "Doctor" in the field of Higher Education 3. Social, Economic and Legal Sciences, professional direction 3.2. Psychology, doctoral program Positive Psychology. The author of the dissertation is Radoslav Dimitrov Sterev, a full-time doctoral student at the Department of Psychology with scientific supervisor Professor Dr. Yuriy Yanakiev.

The set of materials presented by Radoslav Sterev is in accordance with Article 36 (1) of the Regulations for the Development of the Academic Staff of PU, and includes the following documents: The doctoral candidate has attached four publications in scientific journals.

2. Brief Biographical Data of the Doctoral Candidate

Radoslav Shterev completed his secondary education at the Academic K. Popov Mathematics High School, specializing in Informatics. In 1997, he earned a Master's degree in Transport Economics and Management from the University of National and World Economy (UNWE) – Sofia. He has worked in the sales departments of international companies. For the past 15 years, he has been a Sales Manager at Brain Amigo – Plovdiv. His primary responsibilities include technical consulting and training on the use of equipment for neurorehabilitation and mental health support.

3. Relevance of the Topic

The dissertation topic holds significant and fundamental relevance to positive psychology, framing resilience within contemporary technological and instrumental methodologies. This

approach broadens psychology's conventional methodological framework as a scientific discipline.

4. Understanding of the Problem

Shterev exhibits a deep understanding of the theoretical constructs. The work presents a detailed chronological account of psychological resilience, with logical operationalization of all research constructs and clear definition of relevant psychophysiological mechanisms.

5. Research Methodology

The research methodology appropriately addresses the study objectives and enables task completion. The selected methods effectively measure the defined criteria within the target population. The design constitutes a classic two-group experiment with counterbalanced exposure to two levels of experimental conditions.

6. Characteristics and Evaluation of the Dissertation and Contributions

The dissertation's theoretical analysis provides a comprehensive and systematic discussion of all constructs within the research domain. The first chapter of Radoslav Shterev's thesis establishes a theoretical framework for investigating psychological resilience (mental fortitude) and its underlying mechanisms. It examines fundamental definitions and concepts of resilience, tracing its etymology, theoretical models, key mechanisms, and determining factors. Particular attention is devoted to the neurobiological foundations of psychological resilience, including the role of brain structures, neurotransmitter systems, and physiological responses to stress and trauma. The chapter reviews applied methods for assessing and enhancing resilience, incorporating biofeedback, neurofeedback, transcranial stimulation, and other instrumental techniques. Special emphasis is placed on vibroacoustic stimulation as a novel intervention for modulating psychological resilience.

The second chapter details the structure and methodology of the empirical study investigating the effects of vibroacoustic stimulation (VAS) on psychological resilience in chronic pain patients. It presents a clear, rigorous research design encompassing all key methodological aspects. The research components are precisely operationalized. Particularly noteworthy is the doctoral candidate's meticulous development of the vibroacoustic stimulation system, representing in itself a significant innovative contribution. The study cohort comprised 30 participants selected through predefined criteria. While limited in size, this sample enabled robust comparative analysis of different VAS application protocols.

The third chapter presents pre- and post-intervention measurements across experimental conditions (two distinct VAS protocols). Descriptive statistics clearly and systematically present the collected data. Calculated minimum/maximum values, arithmetic means, modes, medians, and standard deviations effectively demonstrate dynamics in the measured parameters. Hypothesis testing employed t-tests to establish statistical significance of

quantitative differences, while regression analysis determined the influence of gender and age on outcome measures. The clear separation between quantitative analysis and qualitative data interpretation is methodologically sound. The study's limitations are appropriately acknowledged.

The dissertation makes an original contribution to positive psychology by expanding the application of instrumental methods for enhancing psychological resilience. The work contains practical applications and inventions worthy of patent consideration, demonstrating both theoretical and applied significance in the field of neurorehabilitation and mental health interventions.

7. Evaluation of Publications and Personal Contribution of the Doctoral Candidate

During his doctoral candidacy, Radoslav Shterev has authored four conference publications, all directly related to his dissertation research. The study's conceptualization, methodology, and data analysis exhibit scholarly originality, with no indications of academic misconduct. The dissertation constitutes genuine intellectual contribution to the field.

8. Critical Remarks and Recommendations

The restricted sample size could constrain the suitability of some statistical approaches for analyzing the results.

9. Abstract

The summary accurately captures the dissertation's theoretical framework and empirical findings in their entirety.

10. Recommendations for Future Use of the Dissertation Contributions and Results

The described audio-acoustic stimulation method (including its technical specifications and application methodology) appears patent-worthy. Further investigation of its efficacy across diverse psychophysiological conditions warrants future research.

CONCLUSION

The dissertation presents findings that constitute an original scientific contribution and fully comply with the requirements of the Law for Development of Academic Staff in the Republic of Bulgaria (LDASRB), its Implementing Regulations, and the relevant statutes of Paisii Hilendarski University of Plovdiv.

The work demonstrates Radoslav Shterev's profound theoretical knowledge and professional competence in conducting independent scientific research. The candidate has exhibited

comprehensive mastery of research methodologies and the ability to generate novel insights in the field of study.

In light of these considerations, I hereby affirm my positive assessment of the research conducted and formally recommend to the distinguished examination committee that the academic degree of Doctor be awarded to Radoslav Shterev. The recommendation pertains specifically to Field 3: Social, Economic and Legal Sciences within the professional domain of Psychology (3.2), under the doctoral program in Positive Psychology.

21.04.2025

Prepared by:

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(Assoc. Prof. Dr. Doncho Donev)