

## **REVIEW**

**by Acad. Prof. Ivan Gospodinov Milanov, MD, PhD, DSc**

**Executive Director of St. Naum University Hospital for Active Treatment in Neurology  
and Psychiatry, Sofia,**

**Department of Neurology, Medical University of Sofia**

**on a dissertation on the topic**

**"HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH DISC DISEASE"**

**For the award of the educational and scientific degree "Philosophy Doctor"**

**In the field of higher education 7. Health and Sports, the professional field 7.1 medicine  
and the scientific specialty "Neurology",**

of Dr. Rositsa Gancheva Krasteva, doctoral student in the doctoral program "Neurology" (03.01.19), professional field 7.1 Medicine, enrolled with order No. R-109-254/01.08.2019 at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna with scientific supervisor Prof. Dr. Ara Garabed Kaprelyan, MD

Dr. Krasteva was enrolled with Order No. R-109-301/25.09.2024 of the Rector of Medical University - Varna on the basis of a report with No. 102-2213/26.08.2024 by Prof. Dr. Silva Peteva Andonova-Atanasova – Head of the Department of Neurology and Neurosciences by decision under Protocol No. 26/09.09.2024 of the Faculty Council and report with No. 103-4385/11.09.2024 by Prof. Dr. Yoto Trifonov Yotov – Dean of the Faculty of Medicine at the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna.

According to Order No. R-109-102/ 28.01.2025 of the Rector of Medical University – Varna and on the basis of Protocol No. 1/06.02.2025 of the first meeting of the Scientific Jury, I have been appointed as an external member of the Scientific Jury and reviewer, by virtue of which I present this review.

The review was prepared in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of this Law and the Regulations for the Development of the Academic Staff at the MU "Prof. Dr. Paraskev Stoyanov" - Varna.

### **Education and professional qualifications:**

Dr. Rositsa Gancheva Krasteva was born in 1972 in Pavlikeni and graduated from secondary education in Ruse, at the “Geo Milev” Secondary School in 1991.

In 1997, she graduated with very good results from the Medical University - Pleven as a Master in Medicine (Higher Education Diploma "Master", MES No. 000117 series MIEN 97, Reg. No. 003497/1997)

Dr. Krasteva has acquired a specialty in "Neurology" at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna (Certificate of recognized specialty No. 2668, Reg. No. 013603/20.06.2008, Series MUV - 2008). She holds certificates for highly specialized activities in neurology - electroencephalography (2009) and electromyography and ultrasound Doppler sonography (2015).

### **Professional experience:**

Dr. Krasteva began working in 1998 as a physician in the Emergency Medical Service and Emergency Admissions Department at the United Regional Hospital - Ruse. From 2002 to 2013, she worked as a resident physician in the First Neurological Department at the Ruse General Hospital. From 2013 to 2014, she was a resident physician in the Cardiology Department at the Medika Ruse General Hospital, and from 2014 to the present, she is the head of the Department of Neurology at the Medika Ruse General Hospital.

Since 2019, she has been an assistant professor at the "Angel Kanchev" University of Ruse, Faculty of Public Health and Health Care, Department of Health Care.

Dr. Rositsa Krasteva possesses theoretical and practical knowledge in the field of neurology, which she applies daily in her practice as a doctor and in her teaching activities. She demonstrates good leadership, organizational and communication skills.

She is a member of the Bulgarian Society of Neurology and the Bulgarian Medical Union. For two terms (2019 - 2021 and 2021 - 2024) she is a member of the Management Board of the Regional College of the Bulgarian Medical Association - Ruse, for the term 2024-2027 she is the Chairman of the Control Commission of the Regional College of the Bulgarian Medical Association - Ruse. She is a member of the standing committees on Ecology and on Health and Social Policy at the Municipal Council, the city of Ruse for the term 2023 - 2027.

### **Relevance and structure of the dissertation:**

The dissertation submitted to me for review, dedicated to the quality of life related to the health of patients with disc disease, covers an extremely relevant health, social and economic problem for our country. The topic is of interest to both neurologists and a wide range of other medical specialists.

The present dissertation is structured according to the standards adopted in our country for a dissertation for the acquisition of the educational and scientific degree "Philosophy Doctor". It is developed on 178 standard pages, structured as follows: introduction (1 p.), literature review (48 p.), goal, tasks and hypotheses (1 p.), clinical contingent and methods (2 p.), own results and discussion (80 p.), conclusions (3 p.), contributions (2 p.), bibliography (25 p.) and a list of publications related to the dissertation (1 p.). It is illustrated in detail with 94 figures and 31 tables. The bibliography contains 257 literary sources, of which 12 are in Cyrillic and 245 in Latin, with over 80 % of the citations being from the last 10 years.

The dissertation has been discussed and directed for defense by the Department of Neurology and Neurosciences at Medical University-Varna with protocol No. 8/23.08.2024 by the Department Council.

### **Literature review:**

The present dissertation is dedicated to an extremely important health and social problem – the quality of life of patients with disc disease. The review is comprehensive, logically structured and ends with a critical analysis. A detailed review of the etiology, pathophysiology, clinical picture, diagnosis and treatment of disc herniation is made, taking into account the difference in the profiles of patients suffering from non-specific low back pain or neck pain and those with a specific cause of pain due to disc herniations. Special attention is paid to neuropathic pain as a significant factor that can negatively affect the quality of life.

Basic instruments for the study of pain, disability, depression and quality of life are reviewed, as well as their application in this group of diseases, and the importance of studying health-related quality of life for public health is emphasized.

### **Hypothesis, goal and tasks:**

The goal of the dissertation is clearly and precisely formulated - to study the health-related quality of life of patients with disc disease and its relationship with disability, pain and depression, and to achieve it, four specific tasks have been set:

1. To study the health-related quality of life, pain intensity, degree of disability and level of depression in patients with disc disease using self-assessment scales.
2. To study the influence of some demographic factors - gender, age and place of residence.
3. To study the influence of the localization of disc pathology on the health-related quality of life, degree of disability, pain and depression.
4. To determine the relationship between depression, pain, disability and health-related quality of life.

The author has put forward the following hypotheses:

1. The localization of the herniated disc, age, gender and place of residence affect the quality of life differently
2. Disability in patients with herniated disc is related to the localization of the hernia, gender, age and place of residence.
3. Depression affects all factors determining the quality of life.
4. There is a relationship between pain, depression and disability

### **Clinical contingent and methods:**

To achieve the stated goal, a total of 120 patients with proven disc herniation or disc protrusions in the cervical or lumbar region on CT or MRI were included in the study, aged 18 to 65 years. For the purposes of the study, the patients were divided into groups by gender (64 men and 56 women), age (5 age groups), place of residence (70 urban and 50 rural residents)

and localization of the disc herniation (76 with disc herniation in the lumbar region and 44 - in the cervical region). A survey method was used with a total of seven questionnaires for self-assessment of pain, disability, depression and health-related quality of life.

The materials and methods are sufficient to derive reliable and representative results. All data have been processed with appropriate and modern statistical methods, which is a basis for accepting the results obtained from the study and the conclusions drawn.

The conduct of the study was approved by the Research Ethics Committee at MU - Varna with Protocol/Decision No. 135/28.09.2023.

### **Own results and discussion:**

The results of the study are grouped into six sections. The first section presents the sociodemographic characteristics and analysis of the study population, the second to fourth sections consistently reflect the results of the studies on pain intensity, depression level and disability level. The fifth section presents the results for the individual domains of health-related quality of life, studied using the SF-36 questionnaire, and the sixth section presents the summarized correlation analysis of the results.

All results are analyzed in detail and comprehensively illustrated with 87 figures and 31 tables.

In the discussion, the doctoral student makes a critical analysis of his own research and results, comparing them with the latest literature data.

### **Conclusions and contributions:**

The dissertation work has made several main conclusions.

- The localization of the herniated disc has a strong statistically significant relationship with gender, with cervical herniated disc being more common among women. Lumbar herniated disc is more common among the rural population, but the established statistical relationship is weak.

- Disability has no statistically significant relationship with the localization of the herniated disc, as well as with the other studied factors - gender, place of residence and age.

- A strong statistical relationship of depression with the place of residence of the studied population and higher levels of depression in rural residents is established.

- A strong statistical relationship of gender with the perception of pain is proven. Women with cervical and lumbar herniated disc have higher levels of pain compared to men, regardless of the other studied factors.

- A strong statistical correlation of pain with depression is established, as well as a strong statistically significant relationship of disability and General Health with pain and with depression.

- Gender, age, localization of disc herniation and place of residence affect different domains of mental and physical health, and do not affect some domains. The localization of

disc herniation affects physical functioning, which is worse in those studied with lumbar disc herniation, gender also affects this domain of quality of life, which has lower values in men. Role limitation due to emotional problems is more negatively affected in women, older participants and those with cervical disc herniation, as we found a statistically significant relationship of this domain with gender, age and localization of disc herniation. Women have worse indicators in terms of energy and fatigue and there is a statistically significant relationship of gender with this domain. Age has a strong impact on the General Health domain, which is significantly worse in older respondents.

- In terms of health-related quality of life, pain and depression are found to have a strong negative impact on all individual domains of mental and physical health.

The doctoral student's self-assessment includes the following contributions from the dissertation work: scientific - theoretical, original and confirmatory.

1. For the first time in our country, a study of the health-related quality of life of patients with disc disease among the Bulgarian population has been conducted

2. For the first time in our country, a comparative analysis of the individual domains of the health-related quality of life, as well as pain, depression and disability in individual groups of patients depending on the localization of the disc herniation and on some sociodemographic factors such as age, gender and place of residence has been made.

3. It is proven that disc disease has a negative impact on the health-related quality of life, with a greater impact on physical than on mental health.

4. It is confirmed that cervical disc herniation is more common among women.

5. It is proven that women have a lower pain threshold and a correlation of pain intensity with gender has been established.

6. A negative correlation of age with General Health and with the development of depressive symptoms in patients with disc herniation is established.

7. The strong correlation between depression and pain is confirmed, which together and separately influence disability and all indicators of health-related quality of life to the greatest extent.

On the topic of the dissertation, the doctoral student has presented three full-text scientific publications in periodical scientific publications from 2021 to 2024. In two of them, he is the second author, and in one, he is the first author.

The abstract is presented on 118 pages, with a larger volume of requirements and reflects in detail the main results achieved as a result of the scientific work.

## CONCLUSION:

The dissertation "Health-related quality of life in patients with disc disease" is an original work of the author and represents a theoretical and practical contribution to Bulgarian neurology. It covers all the scientometric requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of this Law and the Regulations for the Development of the Academic Staff at the MU "Prof. Dr. Paraskev Stoyanov" – Varna for the acquisition of the educational and scientific degree "Philosophy Doctor".

The doctoral student possesses the necessary theoretical knowledge and professional skills in neurology, as well as the ability to independently conduct scientific research.

Based on the above, I give my positive assessment of the presented dissertation and propose to the members of the esteemed Scientific Jury to vote positively for awarding the educational and scientific degree "Philosophy Doctor" to Dr. Rositsa Gancheva Krasteva - doctoral student at the Department of Neurology and Neurosciences of the Faculty of Medicine at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

23.02.2025

Sofia

Reviewer: .

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

Acad. Prof. Ivan Milanov, MD, PhD, DSc