

## **REVIEW**

By

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Regarding

The dissertation of Dr. Vilislava Robert Ivanova on the topic:

“PROPHYLACTIC ULTRASOUND EXAMINATION -METHOD  
FOR DETECTION OF ASYMPTOMATIC PATHOLOGIES  
IN GYNAECOLOGY”

The acquisition of the scientific and educational degree of "Doctor" by Dr. Vilislava Robert Ivanova, in the field of higher education 7. Public health and Sports, professional direction 7.1 Medicine, and scientific specialty "Obstetrics and Gynaecology"

This review has been prepared in accordance with the regulations of the Medical University of Varna, Faculty of Medicine, and is in line with the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria and its implementation rules, as well as the regulations for the application of these rules at the Medical University of Varna.

In the procedure for the defense, Dr. Vilislava Ivanova has submitted all the necessary materials.

Biographical Data of the Candidate:

Dr. Vilislava Robert Ivanova was born on February 15, 1983, in Varna, Bulgaria. She completed her medical education at the Medical University of Varna in 2012 and later specialized in obstetrics and gynaecology. Since 2016, she has worked as an assistant professor at the Department of Obstetrics and Gynaecology at the same university. Dr. Ivanova has actively pursued further professional development through various qualification courses and has contributed as an author and co-author to several publications in her field.

Structure of the Dissertation

Dr. Vilislava Ivanova's dissertation focuses on the current issue of gynaecological prevention, specifically investigating and attempting to define the role of preventive ultrasound (US) examinations in detecting asymptomatic gynaecological pathologies. The chosen research topic is highly relevant, given the increasing number of late diagnoses and the near-complete lack of preventive measures in Bulgaria.

The topic of the dissertation is well-suited for academic research and makes a significant contribution to the clinical practice of gynaecologists, both in hospital and outpatient care.

The dissertation consists of 116 typed pages and is illustrated with 27 tables and 5 figures. The bibliography includes 228 references, of which 9 are in Cyrillic and 219 in Latin script.

The dissertation has been discussed and directed for public defense by the Departmental Council of the Department of Obstetrics and Gynaecology at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, in accordance with Article 24, paragraph 6, and Article 30, paragraph 3 of the PPZRASRB and Article 68, paragraph 1 of the Regulations for the Development of the Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna. This is based on a report with entry number 102-2060/23.07.2024 by Prof. Dr. Emil Georgiev Kovachev, DSc, Head of the Department of Obstetrics and Gynaecology at MU-Varna, and a decision of the Faculty Council of the Faculty of Medicine as per protocol No. 25/29.07.2024 and report No. 103-3752/30.07.2024 by Prof. Dr. Yoto Trifonov Yotov, Dean of the Faculty of Medicine at MU-Varna.

The dissertation is written in correct literary Bulgarian language in a strict scientific style.

#### The literature review

The literature review includes 228 references, of which 9 are in Bulgarian. From the comprehensive literature review, which utilizes both foundational and contemporary sources, a well-rounded understanding of the studied issue is gained. It also becomes evident that no similar studies have been conducted in Bulgaria, which adds further significance and relevance to the current dissertation.

#### **Aim and Objectives:**

Based on the data from the literature and the accumulated research experience on the studied problem, Dr. Ivanova clearly formulates the aim of the study, which is to investigate the diagnostic value of pathological ultrasound findings of the female reproductive system in asymptomatic and symptomatic women.

#### **Objectives:**

1. To analyze the frequency of gynaecological diseases diagnosed by transvaginal ultrasound (TVU), with or without clinical symptoms.
2. To track the frequency of specific complaints reported by the patients.
3. To examine the age distribution of patients with gynaecological diseases.
4. To investigate the frequency of past illnesses and surgical interventions in patients with gynaecological diseases.
5. To analyze the frequency of comorbidities in patients with gynaecological diseases.
6. To establish the relationship between identified gynaecological diseases in patients and their mode of delivery.

The objectives are well-chosen and appropriately structured to achieve the defined aim.

### **Materials and Methods:**

The presented dissertation analyzes retrospectively the results from the clinical study of 564 patients who underwent examination at SBAGAL "Prof. Dr. Dimitar Stamatov" – Varna EOOD between September 1, 2020, and September 30, 2022. This study was conducted as part of a free screening program for women within the joint initiative with the Municipality of Varna titled "Women's Health Prevention - Transvaginal Ultrasound."

### **Materials and Methods:**

In 2020, a total of 397 patients aged between 22 and 86 years were examined, while in 2022, 167 patients aged between 22 and 76 years were examined. After taking the medical history, routine clinical and imaging diagnostic methods were applied.

The diagnostic methods include detailed medical history and transvaginal ultrasound (TVU) using the MyLabTM X6 ultrasound system. The most common anamnesis data are as follows: genital bleeding; lower abdominal and lumbar pain similar to menstrual pain; abdominal swelling; anxiety and sweating in menopausal patients; irregular menstrual cycles; and vaginal discomfort, including dyspareunia, vulvar dysuria, various types of vaginal discharge, and pruritus vulvae. During the TVU examinations, the guidelines and recommendations of the Bulgarian Society of Obstetrics and Gynaecology are adhered to.

In the statistical analysis of the data, both Pearson's chi-square test and descriptive, variance (Student-Fisher) tests, as well as graphical analysis, are applied. Statistical significance according to Student-Fisher's t-test is considered at a significance level of  $p < 0.05$

### **Results from the Study**

I find the results obtained by the doctoral candidate to be significant and scientifically meaningful. Among the numerous results from Dr. Ivanova's study, I would like to highlight the findings related to the detection of pathology in asymptomatic patients. The most frequently identified conditions were uterine fibroids (15.16%), endometrial polyps (5.94%), and adnexal formations (4.71%).

Additionally, among symptomatic patients, the most commonly found pathologies were endometrial polyps (19.74%), uterine fibroids (17.11%), and adnexal formations (15.79% of cases). Pathological findings on transvaginal ultrasound (TVU) were absent in 47.37% of symptomatic patients and 74.18% of asymptomatic women.

It is important to emphasize that the proportion of asymptomatic patients exceeds that of symptomatic patients for the three conditions studied. This difference is most pronounced for uterine fibroids and is statistically significant ( $t = 6.541$ ;  $p < 0.001$ ).

In her study, the doctoral candidate also found that the most common gynaecological conditions throughout the period were uterine fibroids, endometrial polyps, cysts on the right and left ovaries, and polycystic ovary syndrome.

Notably, the doctoral candidate also describes the performed ultrasound diagnostics of rarer gynaecological conditions, such as endometrial hyperplasia, cystocele, primary infertility, and stress urinary incontinence.

## Conclusions:

The conclusions accurately reflect the results obtained, which the doctoral candidate summarizes in five points, logically following the set objectives:

1. Modern ultrasound diagnostics contribute to the identification of a large number of gynaecological conditions, both in symptomatic and asymptomatic patients.
2. The three most common gynaecological conditions diagnosed using TVU are uterine fibroids, endometrial polyps, and adnexal formations.
3. Clinical examination of the women reveals a significant number of complaints, accompanying and past conditions, and surgical interventions performed.
4. There is a significant predominance of female reproductive system disorders in the active and productive age range between 40 and 49 years.
5. No statistically significant correlation is found between the identified pathological ultrasound findings and the method of delivery.

The second conclusion is particularly impressive, as it identifies the three most common gynaecological conditions diagnosed through TVU: uterine fibroids, endometrial polyps, and adnexal formations.

## Recommendations:

In terms of the substance and structure of the dissertation, I have no further comments. Considering the future development of the candidate, I recommend:

1. **Promotion of the Results:** Disseminate the findings of the current research in international and peer-reviewed scientific journals listed in global databases.
2. **Publication of a Monograph:** Publish a monographic work based on the current study, which will further popularize the obtained results.

## Conclusion:

The scientific work presented by Dr. Vilislava Ivanova addresses a current and significant issue in modern medicine. The dissertation is a comprehensive study on the role of preventive ultrasound examination as a method for detecting asymptomatic pathologies in gynaecology. The research has an original and contributory nature in this field. The data are meticulously collected and properly processed. The conclusions and final results, many of which are innovative and contributory, are well-formulated and are likely to be widely cited by other researchers working on the issue in the near future.

Dr. Vilislava Ivanova is a promising scientist and clinician with solid theoretical and methodological preparation and original scientific ideas. I am confident that the results of her research will be recognized by our scientific community.

With this review, I express my firm belief that Dr. Vilislava Robert Ivanova's dissertation, "PROPHYLACTIC ULTRASOUND EXAMINATION-METHOD FOR DETECTION OF

ASYMPTOMATIC PATHOLOGIES IN GYNAECOLOGY” fully meets the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its Implementation at the Medical University of Varna, and deserves to be publicly defended.

I recommend that the esteemed members of the specialized scientific jury vote positively for the award of the academic and educational degree of ‘Doctor ’to Dr. Vilislava Robert Ivanova based on her dissertation.

Prepared by:

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