

REVIEW

by Dr. Teodora Atanasova Staykova – Professor
at Plovdiv University "Paisii Hilendarski"

of a dissertation for the award of the educational and scientific degree "doctor"

in: field of higher education 4. Natural Sciences, Mathematics and Informatics

professional field 4.3 Biological Sciences

doctoral program GENETICS

Author: Stanislav Ivanov Ivanov

Topic: Phenotypic diversity in humans in a complex of descriptive and behavioral characteristics

Scientific supervisor: Prof. Evgeniya Neshova Ivanova - Plovdiv University "Paisii Hilendarski", Doctor of Biological Sciences.

1. General description of the submitted materials

By order No. PD-22-215 of 28.01.2025 of the Rector of Plovdiv University "Paisii Hilendarski" (PU), I am appointed as a member of the scientific jury for ensuring a procedure for the defense of a dissertation on the topic "Phenotypic diversity in humans in a complex of descriptive and behavioral characteristics" for the acquisition of the educational and scientific degree of 'doctor' in the field of higher education 4. Natural sciences, mathematics and informatics, professional field 4.3. Biological sciences, doctoral program Genetics. The author of the dissertation is Svetoslav Ivanov Ivanov - a doctoral student in full-time study at the Department of Developmental Biology, with a scientific supervisor Prof. Dr. Evgeniya Neshova Ivanova from PU "Paisii Hilendarski".

The set of materials on paper submitted by doctoral student Stanislav Ivanov is in accordance with Art. 36 (1) of the Regulations for the Development of the Academic Staff of the University of Plovdiv and includes the following documents:

- application to the Rector of the University of Plovdiv for the opening of the procedure for the defense of a dissertation;
- CV in European format;
- minutes of the departmental council, related to reporting the readiness to open the procedure and with a preliminary discussion of the dissertation;
- dissertation;
- abstract in Bulgarian and English;
- list of scientific publications on the topic of the dissertation;
- copies of scientific publications;
- declaration of originality of the obtained results and formulated contributions;
- certificate of compliance with the minimum national requirements;
- opinion of the scientific supervisor;
- decision of the faculty.

The doctoral student has submitted 3 publications in journals, refereed and indexed in world-renowned databases, as well as printed material from participation in the fifth Balkan Conference BalkanBio.

2. Brief biographical data about the doctoral student

Stanislav Ivanov graduated from secondary education in 2006 in the town of Straldzha. He obtained a Bachelor's degree in Psychology and a Master's degree in Human Resources Management at the P. Hilendarski University. In February 2021, he was enrolled and began studying in the doctoral program in Genetics at the Faculty of Biology of the University as a full-time doctoral student. On March 1, 2024, he was deducted with the right to defend his thesis. Stanislav Ivanov has worked and is working in the field of social activities and support for people with disabilities, psychological counseling and human resources. The acquired social experience in the field of communication and the emphasized interest in psychology and genetics motivate the doctoral student and provoke the choice of topic for the dissertation.

3. Relevance of the topic and appropriateness of the set goals and objectives

The lack of research on the frequency of occurrence of the selected descriptive and behavioral characteristics among the adult population in the country determines the relevance of the issues

developed in the dissertation. The goal is scientifically justified and presupposes the 7 specifically formulated tasks.

4. Knowing of the problem

The literature review is a comprehensive and in-depth study of research to date and includes a large number of publications (a total of 456 literary sources are cited, 451 of which are in Latin). A large part of them are from the last 10-15 years. Knowledge of the scientific literature on the developed problem enables the doctoral student to compare and interpret the results obtained, to make generalizations and to detect trends.

5. Research Methodology

The methodology includes a complex of different methods such as collecting data on the manifestation of certain descriptive features and the type of blood groups, surveying and statistical methods, which are adequate to the set goal and allow the successful implementation of the specified tasks. A set of technical tools and specialized software for blind researchers was also used, which assisted the doctoral student.

6. Characteristics and evaluation of the dissertation work

The dissertation work submitted for review is 202 pages long, including a list of the doctoral student's publications and participation in scientific forums (2 pages). The main text of the dissertation includes 37 tables and 38 figures in the form of diagrams, which reflect the reported results. The content of the dissertation work is structured as follows:

- Introduction (2 pages), which briefly presents basic postulates in the field of genetics, anthropogenetics, population genetics and psychogenetics, as well as the reasons for the existence of population polymorphism, which also includes individual personality and psychoemotional differences.
- Literature review (44 pages), summarizing information presented in a large number of literary sources regarding research on morphogenetic characteristics, basic personality characteristics and their geographical distribution, diseases with a genetic component. Attention is also paid to studies related to musical talents and other creative characteristics of the personality, genetic predisposition and the influence of the

environment. Historically, the creation and further development of the so-called 5-factor model for studying personality characteristics in humans, which is also used in the current dissertation work, is traced.

- Aim and objectives (1 p.) – the aim is clearly formulated, and the objectives are related to the necessary specifics.
- Material and methods (12 p.) – a heterogeneous sample of 945 individuals in a fairly wide age range, mostly women, was studied. The main method used for data collection is the survey method. Through it, information on descriptive signs and basic personality characteristics was collected. Statistical data were processed using the IBM SPSS Statistics software package, version 22.0. A set of technical tools and specialized software for blind researchers was also used.
- Results and discussion (87 pages) – the phenotypic variations of the selected descriptive traits with monogenic, polygenic control, and multifactorial conditioning, as well as the basic personality characteristics, are presented. The established percentage of decay among the studied sample is well visualized through the presented diagrams. The doctoral student skillfully compares his own results with those established by other authors. A significant contribution of the study is the analysis and the established statistical dependencies between descriptive traits and basic personality characteristics and creative manifestations. Data on the relationship between the frequency of occurrence of creative manifestations and the gender and age factor of individuals are presented in a table. Considering the lack of similar studies in the Bulgarian population, the comparative analysis carried out and the established dependencies between the various traits are original in nature.
- Conclusions and inferences (2 pages) – a brief summary of the results is presented with respect to the studied traits and the established dependencies. 7 conclusions have been formulated, which correspond to 5 of the tasks set (from the 3rd to the 7th). The doctoral student demonstrates the ability to analyze and interpret scientific results.
- Contributions (2 pages).
- References (44 pages).

7. Contributions and significance of the work for science and practice

The presented dissertation work is based on a well-planned and well-implemented scientific study, during which interesting results and dependencies were established, which outline contributions of an original scientific, methodological, applied and confirmatory nature of the work. The presented data on the phenotypic variations of selected monogenic, polygenic and multifactorial traits in the Bulgarian population, as well as the frequencies of their occurrence and the relationship of some of them with the sex and age of individuals, are original, since they are reported for the first time. A relationship between the Rh blood group factor and the emotional stability of individuals has been established, which is reported for the first time not only for the Bulgarian population, but in general. For the first time, the creative potential among the studied population of Bulgaria is related to the basic characteristics of the personality, and the used model of complex studies opens up prospects for future research in the field of psychogenetics. The established trends and dependencies between the analyzed descriptive, immunological and multifactorial signs on the one hand and psychological characteristics on the other, outline the complex phenotypic profile of the Bulgarian population, which also carries an element of originality.

The results in the presented doctoral dissertation confirm the distribution of some of the studied immunological signs and diseases with genetic predisposition among the Bulgarian population, and the relationship of the latter with the age and gender of individuals, which I consider as a contribution of a confirmatory nature.

The developed dissertation thesis is a real challenge for the doctoral student and his scientific supervisor. In this regard, the complex of statistical methods used, as well as technical means for blind researchers, represent a methodological contribution.

The presented phenotypic profile of the studied Bulgarian population could serve as a basis for solving problems in the field of education, personal self-improvement and well-being, which opens up a perspective for using the results of the doctoral dissertation and represents a contribution of an applied nature.

8. Assessment of publications on the dissertation work

The doctoral candidate has submitted a list of seven publications. Four of them are related to the dissertation work, and the other three are additional. Copies of the first four are also attached, three of

which have been published in journals with scientometric indicators (Q3 and Q4), and one was presented as a report at the conference with international participation BalkanBio in 2021. In one of the mentioned publications, Stanislav Ivanov is the first author. It is these publications that the doctoral candidate has included in the provided statement of compliance with the minimum national requirements. The three additional publications have also been published in journals with Q3 and Q4 indexed and referenced in world-renowned databases. Stanislav Ivanov has also demonstrated great activity in terms of popularizing the results of his research activities by participating in scientific forums during his studies as a doctoral candidate, and before that. He has submitted a list that certifies his participation in four forums (international and national with international participation) with six materials. The doctoral student did not provide a list of citations, but one of the additional publications was cited.

The doctoral student's scientific activity shows that Stanislav Ivanov is a researcher with strong interests in the field of genetics and psychogenetics, and fully meets the requirements for obtaining the ONS "doctor".

9. Personal participation of the doctoral student

As a member of the teaching unit, I can state that the described results and the contributions formulated in the dissertation are a consequence of the doctoral student's hard work under the expert guidance of his scientific supervisor. This is confirmed by the "Declaration of Originality and Authenticity" signed by the doctoral student, as well as the plagiarism check I performed in the Strike Plagiarism.com system.

10. Abstract

The abstract presented by S. Ivanov in Bulgarian and English is structured according to the requirements of the PRASPU, Art. 36 (1), in a volume of 32 pages, reflecting the main dissertation results and contributions.

11. Critical remarks and recommendations

The remarks I have are not significant and are mainly of a technical nature, such as:

- In the "Results and Discussion" section, there is a certain discrepancy in the terminology used in the text and in Fig. 2 regarding the shape of the face - oval and round.

- The list of conference participations does not indicate the format of participation for some of them - report or poster.

I also have the following specific questions for the doctoral student:

1. What is the reason for the sample studied to be mainly women (nearly 71%)?
2. Can you clarify what "data collection carried out with consultation and under the control of a lead researcher" means and who plays the role of "lead researcher"?
3. How would you explain the established statistically significant relationship between the manifestation of "other talents" and the age category between 16 - 25 years?
4. How do you see the applicability of the results of this study and in which parts could it be continued and further developed?

12. Personal impressions

As a member of the teaching unit and the examination committees for the disciplines from the doctoral student's individual plan, I can share my personal satisfaction with his excellent performance in the exams.

13. Recommendations for future use of the dissertation contributions and results

I would recommend that the data from this study be supplemented and enriched by expanding the spectrum of characteristics and the sample studied.

CONCLUSION

The dissertation work proposed for review contains scientific and scientifically applied results that represent an original contribution to science and meet the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADSRB), the Regulations for the Implementation of the ADSRB and the Regulations for the Academic Staff of the Plovdiv University "Paisiy Hilendarski"..

The dissertation work shows that the doctoral student Stanislav Ivanov Ivanov possesses in-depth theoretical knowledge and professional skills in the scientific specialty Genetics, demonstrating qualities and skills for independent conduct of scientific research.

Due to the above, I confidently give my positive assessment of the conducted research, presented by the above-reviewed dissertation work, abstract, achieved results and contributions, and I propose to the esteemed scientific jury to award the educational and scientific degree of 'doctor' to Stanislav Ivanov Ivanov in the field of higher education: 4. Natural Sciences, Mathematics and Informatics, professional field 4.3. Biological Sciences, doctoral program "Genetics".

14. 02. 2025

Reviewer:

(Prof. Dr. Teodora Staykova)