By Prof. Boryana Georgieva Tumanova, Ph.D.

Sofia University “St. Kliment Ohridski”

member of the scientific jury by order of the Rector of Sofia University “St. Kliment Ohridski”, № RD-38-78/08.02.2023, under the procedure for occupying the academic position “Associate Professor” in the professional field of higher education 1.3. Pedagogy of Education in ... (Physical Education and Sports – athletics and conditioning training).

Candidate: Chief Assis. Prof. Ivanka Nikolova Karparova, Ph.D.

***Information about the contest***

The announced contest is for the academic position “Associate Professor” in professional field 1.3.  Pedagogy of Education in (Physical Education and Sports – athletics and conditioning training). Information about it is presented on the website of Sofia University “St. Kliment Ohridski” and is published in the State Newspaper, issue. 100/16.12.2022.

All legal provisions are complied with.

In the contest participates as the only candidate Chief Assis. Prof. Ivanka Nikolova Karparova, Ph.D.

***Brief information about the candidate***

The candidate Chief Assis. Prof. Ivanka Nikolova Karparova, Ph.D., has been working at Sofia University “St. Kliment Ohridski” since 2006. Initially as an Assistant Professor and since 2011 as Chief Assis. Prof. in Physical Education and Sports – athletics at the Division of Individual Sports and Recreation. In the period 2013 – 2021, she was Head of the Division of Individual Sports and Recreation.

She graduated from the National Sports Academy “Vasil Levski” with a Master’s degree (1992 – 1996) with a first specialty - Coach in athletics, and second – Teacher in Physical Education. She started her career at Sofia University in 1996 as a part-time assistant professor. In 2015 she defended her dissertation on the topic “A Model for the development of students’ endurance with the means of athletics running” and acquired a “Doctor” degree in the professional field 1.3 Pedagogy of Education in (Physical Education and Sports – Athletics). She has many years of pedagogical experience as an athletics coach at a student sports school. Since the beginning of her career, as an assistant professor, she has been a coach of the representative team of Sofia University in athletics, and later of the cross-country skiing team. In 2019 she is the leader of the athletics team in the 30th Summer University World Games. She was the head of the Methodical Association in athletics at AUS “Academic” (Association for University Sports “Academic”). She is an active marathon runner and has presented a number of her achievements for the contest.

*Scientific, project, editorial, and public activities:* Chief Assis. Prof. Karparova is a member of over 10 scientific projects, she is a member of the editorial board of the collections books of the International Scientific Conference “Modern Trends in Physical Education and Sports”, and she has been participating with sectional reports in many international and national scientific conferences.

***General characteristics of the presented materials***

The candidate has submitted for participation in the contest for “Associate Professor’ the following documents and a list of publications: 1 monograph, 19 articles in scientific journals (of which 1 is referenced and indexed in world-famous databases of scientific information), CV, diplomas, certificate of work experience, reference for the implementation of MNR, reference for citations, scientific contributions, abstracts of peer-reviewed publications and others. The publications are related to the professional field of the contest. The author's share in the scientific works is expressed in 18 independent publications and 2 in co-authorship. 16 of the works are written in Bulgarian, and 4 in English. The author has been cited in scientific publications 6 times. The lists of scientific publications, abstracts, and references to the contributions present clearly and conveniently the information in the texts with which the Chef Assis. Prof. Karparova applied for the academic position of Associate Professor.

The presented table reference for MNR by a group of indicators for the academic position “Associate Professor” shows that the applicant fulfills the required national minimum of 400 points and participates in the contest with 400 points.

The publications submitted by the candidate are proof of the development of Chief Assis. Prof. Ivanka Karparova, as a chief assistant professor, researcher, and active participant in forums related to Physical Education, Sports, and in particular the adaptation of the learning process in an online environment, optimization of the online learning process in Physical Education and Sports, online pedagogy, and others.

***Scientific and applied achievements of the applicant.***

Chief Assis. Prof. Karparova has presented for her participation in the contest various scientific articles and reports. One group of publications is related to the *biomechanics of running*. The main contributions of the candidate are presented in the Monograph (1) “Biomechanical foundations of running technique and methodological guidelines in training“. The monograph has a logical structure, there is a balance in the presentation of knowledge from the field of education and the methodology of training in athletics. It was published by the University Publishing House “St. Kliment Ohridski” in 2022 and reviewed by two scientific reviewers. With a volume of 134 pages, the text is divided into an introduction, six chapters, and a bibliography. In this work, the author attempts to analyze the characteristics of endurance running, new training approaches from the point of view of bone-joint apparatus, and their relationship with biomechanics. In Chapter One, data on movement as an interest on the part of science are presented. A brief historical overview of scientific quests related to biomechanics is also made. In the Second Chapter of the work, a classification of movements is presented, and important terms in the biomechanics of physical exercise and Newton's laws are described. For the needs of the theoretical material, the forces acting during a run are discussed in detail. The Third Chapter gives a more detailed description of the individual structures of the human body and their reflection in the temporal, kinematic, and dynamic structure of movements. Better knowledge of the anatomy of the body will help to better understand the cycles of the running stride. The individual parts of the technique are described in detail from the biomechanics point of view. Chapter Four is of the greatest practical value because of the detailed consideration of the run-stride from a biomechanical point of view. The role of the run-stride phases and the parameters of the running dynamics are also considered. The running technique is studied to optimize movements, especially when it comes to endurance running – to improve energy consumption. In the text (Chapter 5) a special place is given to the most common “runners” injuries and their connection with the technique of running, and the author believes that good knowledge of the origin of injuries and good technique is a kind of prevention of injuries and a guarantee for sports longevity. The proposed training techniques are related to an adequate interpretation of terminology, describing the types of forces acting on the runner, as well as the interaction between them. This is where the author’s contribution and innovation are – the proposed methodological guidelines and specific training tools. The author’s research experience allows her to present the different methodological guidelines for training in the technique of running, as well as their benefits (Chapter 6). There is sufficient evidence in the monograph to infer the excellent theoretical-methodical preparation of the candidate. Karparova reasonably reaches a rethinking of the opportunities and prospects for the development of training skills. Theoretically, the influence of better knowledge of the anatomy of the lower extremities for a better understanding of the cycles of the running stride is emphasized. Important conclusions for the running technique are made:

This topic finds its place and the following articles: № 2 “Running biomechanics and selection of sports shoes in benefit to amateur athletes” and №4 “Study of some biomechanical indicators of technique in runners with different qualifications”, in which the theory that the increase in running speed is a complex of several factors is advocated. To the question of „Running biomechanics and selection of sports shoes in benefit to amateur athletes” (2), the author points out problems provoked by the possibility of improving athletic performance and preventing injuries when running. Finds that the use of biomechanical analysis of running techniques in training and the selection of suitable shoes for the particular athlete will positively affect athletic performance and help prevent injuries. In the article “Study of some biomechanical indicators of technique in runners with different qualifications” (4) the frequency of the run-stride is studied as one of the indicators of the running technique. Portable smart devices with built-in functionalities for measuring various data during a run and the information that this data provides can serve athletes and specialists to analyze and plan training programs.

The applicant's interest in *athletics (in particular some running disciplines) and increasing physical activity through the use of running athletic disciplines* is sustainable. To the question of their application in the field of secondary and higher education (articles 8, 9, 10, 13, 15), the author studies various solutions for increasing physical activity. The effect of using different solutions is analyzed. The overall role of sport athletics is reviewed, and articles are drawn that prove the effect of increasing the physical activity of those engaged in such physical exercise. Of interest is the tracking of the problem with a shortage of sports facilities and facilities in Higher Education Institutions and the analysis of the competitive calendar in athletics in the field of student sport (№ 8 – “Track and field athletics for the students in Bulgaria - organization of training and analysis of the competition process”). A recommendation has been made to the administering authorities to review the Regulations on the qualification for the National Universiades. From the analysis, it could be summarized that the introduction of a possible change would enable more students to participate in training and competitive student sport. In article № 10, “Kid’s Athletics - a specialized program for the development of track and field athletics for adolescents” the topic of transformations concerning the massiveness, accessibility, popularity, and inclusion of the huge mass of amateurs as part of a community is discussed and in particular, presents a concept of a program for children. The author is one of the two main lecturers in Bulgaria, they make a platform available throughout the country by presenting it in a theoretical form. In the focus of the study in articles № 9, 13, and 15 are made recommended methodological guidelines in favor of training in sport – athletics at the University. In Articles 9 and 15 “Research on the endurance and speed indicators of students from Sofia university “St. Kliment Ohridski” and “Optimizing the activity in athletics with training equipment for preferential loading of the upper half of the body” muscle balance and the interrelationship between motor qualities are studied. Specific recommendations are given for the enrichment and diversification of curricula. Some dependencies in the study of students from the programme “Physical Education and Sport” at the University are traced. To the question “Study of an experimental model for the development of endurance through running” (№ 13) an experimental program has been investigated which allows the author to derive certain physical load parameters. The contributory character here is the creation of the so-called “Motivational diary”.

To the same topic but with a profile aimed at athletics as a competitive sport I refer the publications under № 7, 12, 14, 16, 19, 20: “Marathon and ultramarathon competitions in Bulgaria - past, present, and future”; ”Influence of some factors on the athlete's body during endurance loads”; “Ultramarathons”, “In the name of records”; “Study of regularities in the development of the world record in running 10,000 m – men”, and “Optimizing the distribution of effort in running 10,000 m – men”. The publications look at some trends in long-distance running disciplines in Bulgaria. A retrospective analysis of the most popular long and ultra-long-distance races is made. A recommended scheme for hydration during prolonged loads is presented.

To the same group of publications I refer the articles (3 and 18) “Methodological guidelines for the training of recreational runners with flat feet” and “Disorders during the aerobic exercise of athletes with a low level of functional capabilities”, united by the theme “Endurance running as the most affordable aerobic activity in the field of amateur sport”. The topic of the serious anatomical disadvantage – flatfoot – is addressed. Recommendations for prevention are given, as well as methodological guidelines that can be of use to runners. Summarized and grouped according to their nature are the most significant factors influencing the progress in endurance sports.

In another subject area, I look at articles 5, 6, 11, and 17 - “Intensity ratio and duration parameters in the training of runners with different qualifications”; “Application of strength exercises in endurance training”; “Endurance factors and their relationship with aerobic capacity”, and “Interval and uniform method for the development of quality endurance and their application in sports”. In them, Karparova formulates ideas for *the methodology* of training. She analyzes the impact of training effects on amateur aerobic sports (running), which are of different intensities and duration. She presents a thesis about sport achievement in endurance training, based on a complex interaction between physiological, biomechanical, biochemical, psychological, etc. factors. A comparative analysis of two of the most commonly used methods in endurance training is made – interval and even. An overview is made of the best achievements in the running of competitive athletics – the official running disciplines.

***Assessment of candidate contributions***

The results of all studies have a comprehensive analysis and correct conclusions and recommendations for theory and practice are made. The style in which the works are written is readable and at the same time precise from a scientific point of view. Summarizing their review, I can conclude that Karparova made a successful attempt to analyze the characteristics of endurance as a physical quality by examining runners with different qualifications - from recreational athletes to runners in competitive sports. The contributions contained in the publications and presented in the contest for the academic position “Associate Professor” are in the field of Pedagogy of Education in Physical Education. They have a theoretical, methodical, and practical nature. The theoretical and methodological character is expressed in the resulting specific goals of Physical Education. Theoretical and practical formulations based on the peculiarities of physical activity and the search for balance between the different components of the physical load are systematized and outlined. The essence of exercise patterns for different muscle groups, important for running as physical activity, is studied.

The practical importance of the studies is evidenced by the training programs for students and athletes (especially in the field of amateur sport), as well as empirical data and statistical results from a large number of surveyed persons who prove the important role of regular physical activity, and in particular running, for people of different ages.

***Conclusion***

The scientific contributions of Chief Assis. Ivanka Karparova Ph.D. are presented in her publications, which are within the scope of Pedagogy of Education in Physical Education and Sports. The ongoing process of changing the focus of education to innovative methods of modern technologies necessitates the need for a complex and balanced attitude to its theoretical and practical dimensions. The basis on which she stands and methodically develops. All this speaks of a high level of theoretical, teaching, and research experience. The submitted reviewed production does not duplicate the works of other authors and there is no plagiarism. Considering all the above and as a reviewer and member of the scientific jury, I strongly suggest to the members of the esteemed scientific jury to vote for Ivanka Nikolova Karparova to be awarded the academic position of *“Associate Professor*” in professional field 1.3. “Pedagogy of Education in... (Physical Education and Sports – athletics and conditioning training),

28 March 2023 Prof. Boryana Tumanova, Ph.D.