JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205

Volume 15 Issue 10, October 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

ORGANIZING SPORTS AND HEALTH-IMPROVING ACTIVITIES IN DESERT AREAS

Nuriddinov Axrorjon Bahodir ugli
Asia International University
Lecturer at the Department of Physical Education
nuriddinovaxrorjonbahodirugli@oxu.uz

Abstract: A large part of the territory of Uzbekistan consists of desert and semi-desert areas, and organizing sports and health-improving activities in these extreme conditions is an important task from pedagogical, physiological, and social perspectives. The study analyzes the physiological, biomechanical, and hygienic factors related to organizing training in desert conditions and highlights the opportunities for developing exercise complexes that accelerate the process of heat adaptation (acclimatization). From a historical perspective, since ancient times, physical activities such as walking, horseback riding, archery, and wrestling have been an integral part of desert life, while in the 20th century, special training programs were developed, and today this experience is being enriched through international ultramarathons and sport-tourism practices. From a sociological standpoint, such activities are an important factor in strengthening public health, engaging youth in social activity, and contributing to the development of the local economy. Innovative approaches emphasize the importance of mobile sports facilities, smart devices, VR/AR technologies, and the integration of sport and tourism. Recommendations have been developed for creating special training programs for desert regions, organizing international sport-tourism marathons, and establishing innovative sports infrastructure. These approaches make it possible to effectively organize sports activities in desert conditions and to widely promote physical education and a healthy lifestyle.

Keywords: health-improving activities, extreme conditions, physiological factors, plyometric exercises, sports tourism, mobile sports facilities, smart technologies (wearable devices), psychological resilience

Introduction

About 60 percent of the territory of Uzbekistan consists of desert and semi-desert zones. In vast areas such as the Kyzylkum and Karakum, climatic features are among the main factors influencing the way of life of the population. Under extreme conditions—high temperatures, dry air, and water scarcity—the effective organization of sports and recreational activities is important not only from a pedagogical perspective but also from social and public health standpoints.

From a scientific perspective, physiological, biomechanical, and hygienic factors are regarded as the main foundations in organizing sports training in desert regions.

Physiological aspects: Exercising under high temperatures increases the load on the cardiovascular system and the respiratory process. Therefore, training sessions are recommended to be conducted in the early morning or evening, under optimal microclimatic conditions.

Biomechanical aspects: Performing exercises on sandy surfaces creates additional resistance for the musculoskeletal system, which in turn develops endurance and strengthens the leg muscles.

JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 10, October 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

Based on this, a set of specialized exercises (such as running on sand, plyometric jumps, and gymnastics on sandy surfaces) can be developed.

Hygienic aspects: Maintaining water balance, sun protection, breathable clothing, and controlling body temperature during training intervals are considered essential. Scientific research has shown that exercises performed in desert environments accelerate the process of acclimatization to heat for athletes.

Historical perspective: Physical activity in desert regions has long been an integral part of human life.Ancient times: Activities such as long-distance walking along caravan routes, horse riding, archery, and wrestling were the primary forms of physical activity in desert life. 20th century: During the Soviet period, special physical training programs were developed for expedition participants, geologists, and military personnel operating in the Kyzylkum and Karakum regions.

Present day: International ultramarathons held in desert regions (such as the Marathon des Sables in the Sahara Desert) serve as significant experiences. In Uzbekistan as well, there are opportunities to develop events that combine tourism and sport in desert areas.

Sociological perspective. Organizing sports and recreational activities in desert regions contributes to several aspects of community well-being:Improvement of public health: Physical activity strengthens the cardiovascular and respiratory systems, thereby enhancing the overall health level of the population.

Efficient use of leisure time: Such activities help organize free time productively, diverting young people from harmful habits.Socio-economic impact: Desert-based sports directions (eco-marathons, sport tourism) positively influence tourism and the local economy, as they attract foreign visitors.In addition, training sessions in desert environments serve as an important means for young people to develop psychological resilience, cultivate volitional qualities, and strengthen collective solidarity.

Innovative perspective. In modern conditions, innovative approaches play an important role in the effective organization of sports and recreational activities in desert regions:

Mobile sports facilities: Prefabricated sports halls, shaded mini-fields, and exercise machines equipped with solar panels.Smart technologies: Wearable devices (smart bracelets, sensor-based clothing) that monitor athletes' heart rate, body temperature, and water balance.Virtual training: Modeling safe desert training sessions through VR and AR technologies.Integration of sport and tourism: Combining desert-based health-oriented activities such as trekking, cycling, and sand marathons with tourism initiatives.

During exercise in hot climates, the activity of the cardiovascular system sharply increases, respiration accelerates, and perspiration intensifies. The loss of water and salts can lead to dehydration, which in turn causes a decline in physical performance and the rapid onset of fatigue. At the same time, through the process of adaptation, the body's tolerance to heat gradually improves.

High temperatures also affect the human psyche. Athletes may experience decreased concentration, increased irritability, and reduced motivation for training. However, consistent and well-controlled exercise helps to develop psychological stability and strengthens volitional qualities.

During training in hot conditions, there is a risk of heat stroke, muscle cramps, dizziness, and even loss of consciousness. To prevent such outcomes, it is essential to restore water balance, schedule rest intervals, and use breathable clothing. Although hot weather complicates the

JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 10, October 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

organization of sports training, with a proper methodological approach it can be transformed into an effective means of strengthening the athlete's body. Conducting training sessions in the early morning or evening, monitoring water and electrolyte balance, and applying protective clothing and technologies accelerate adaptation to heat. Thus, exercise in hot climates plays an important role not only in promoting health but also in developing endurance and psychological resilience.

Conclusion.

Organizing sports and recreational activities in desert regions requires a specific methodology. Scientific analysis shows that exercise under desert conditions strengthens the body, while historically, physical activity in these areas has developed as a tradition. From a sociological perspective, such training improves public health and expands opportunities for tourism. Innovative approaches, in turn, allow these processes to be organized effectively and safely with the help of modern technologies.Key directions include:Developing specialized training programs tailored to desert environments. Organizing international sport-tourism marathons in Uzbekistan's desert regions. Creating mobile sports infrastructure and integrating smart technologies. Preparing methodological guides for adapting students and athletes to desert conditions.

References:

1. Bartlett, R. "Performance Analysis in Sport." Routledge, 2019.
2. FIFA Innovation Programme Reports. - Zurich, 2022.
3. O'zbekiston Respublikasi Prezidentining "Sportni rivojlantirish to'g'risida"gi PQ-6079-son Qarori. – Toshkent, 2020.
4. InStat Football Reports, 2023.
5. UEFA Big Data in Football. – Nyon, 2022.
6. Nuriddinov, A. (2023). THE ROLE OF FAIR PLAY IN PHYSICAL EDUCATION. Modern Science and Research, 2(10), 244-250.
7. Nuriddinov, A. (2023). A study of the aggressive status of football fans. American Journal Of Social Sciences And Humanity Research, 3(11), 73-80.
8. Nuriddinov, A. (2024). EVALUATİON OF BASİC FOOTBALL PRİNCİPLES AND STRATEGİES. Modern Science and Research, 3(2).
9. Nuriddinov, A. (2024). PHYSİOLOGICAL CHARACTERISTICS AND ENDURANCE IN FOOTBALL. Modern Science and Research, 3(2).
10. Nuriddinov, A. (2024). FUTBOLDAGI ASOSIY VA YORDAMCHI MOTORIK XUSUSIYATLARI.