METHODS OF IMPROVING STRENGTH QUALITIES THROUGH STATIC EXERCISES IN STUDENTS ENGAGED IN PARALYMPIC SPORTS

Mahmudjonov Asilbek Abduvokhid ugli
Teacher of the Department of Physical Culture and Sports
Namangan State Pedagogical Institute
Email: asilbekmahmudjonov19981126@gmail.com

Abstract: *This article examines the pedagogical and methodological foundations of developing strength qualities in students engaged in Paralympic sports through static exercises. The study analyzes the physical development characteristics of students with disabilities, the isometric mode of muscle activity, and the impact of static exercises on strength performance. Particular attention is given to the safety and effectiveness of static exercises and their integration into the training process. A methodology is proposed that includes individualized exercise selection, regulation of load volume and intensity based on heart rate monitoring (pulsometry), and a phased organization of training sessions. The research results demonstrate that static exercises significantly improve muscle strength, enhance functional capabilities, and increase the overall physical fitness of students. The proposed approach can be effectively implemented in adaptive physical education systems.*

Keywords: *static exercises, strength qualities, Paralympic sport, adaptive physical education, individual approach, pulsometry, isometric exercises, physical fitness.*

МЕТОДЫ ПОВЫШЕНИЯ СИЛОВЫХ КАЧЕСТВ У СТУДЕНТОВ, ЗАНИМАЮЩИХСЯ ПАРАЛИМПИЙСКИМИ ВИДАМИ СПОРТА, ПОСРЕДСТВОМ СТАТИЧЕСКИХ УПРАЖНЕНИЙ

Аннотация: *В данной статье рассматриваются педагогические и методические основы развития силовых качеств у студентов, занимающихся паралимпийскими видами спорта, посредством статических упражнений. В исследовании анализируются особенности физического развития студентов с ограниченными возможностями, изометрический режим работы мышц и влияние статических упражнений на силовые показатели. Особое внимание уделяется вопросам безопасности и эффективности применения статических упражнений, а также их интеграции в учебно-тренировочный процесс. Разработана методика подбора упражнений с учетом индивидуальных особенностей обучающихся, регулирования объема и интенсивности нагрузки на основе пульсометрии и поэтапной организации тренировочного процесса. Результаты исследования показывают, что применение статических упражнений способствует увеличению мышечной силы, расширению функциональных возможностей и улучшению физической подготовленности студентов. Предложенная методика может эффективно использоваться в системе адаптивного физического воспитания.*

Ключевые слова: *статические упражнения, силовые качества, паралимпийский спорт, адаптивная физическая культура, индивидуальный подход, пульсометрия, изометрические упражнения, физическая подготовка.*

PARALIMPIYA SPORT TURI BILAN SHUG‘ULLANUVCHI TALABALARDA STATIK MASHQLAR ORQALI KUCH SIFATINI OSHIRISH USULLARI

Annotatsiya: *Mazkur maqolada paralimpiya sport turi bilan shug‘ullanuvchi talabalarda kuch sifatini statik mashqlar orqali rivojlantirishning pedagogik va metodik asoslari yoritilgan. Tadqiqotda imkoniyati cheklangan talabalarning jismoniy rivojlanish xususiyatlari, mushak faoliyatining izometrik rejimi hamda statik mashqlarning kuch sifatiga ta’siri ilmiy jihatdan tahlil qilinadi. Shuningdek, statik mashqlarning xavfsizligi, samaradorligi va ularni mashg‘ulot jarayoniga integratsiya qilish masalalari ko‘rib chiqilgan. Maqolada individual yondashuv asosida mashqlarni tanlash, yuklama hajmi va intensivligini pulsometriya orqali boshqarish, hamda mashg‘ulotlarni bosqichma-bosqich tashkil etish metodikasi ishlab chiqilgan. Tadqiqot natijalari statik mashqlar yordamida mushak kuchini oshirish, funksional imkoniyatlarni kengaytirish va talabalar jismoniy tayyorgarligini yaxshilash mumkinligini ko‘rsatadi. Shu bilan birga, taklif etilgan metodika adaptiv jismoniy tarbiya tizimida samarali qo‘llanishi mumkinligi asoslab beriladi.*

Kalit so‘zlar: *statik mashqlar, kuch sifati, paralimpiya sporti, adaptiv jismoniy tarbiya, individual yondashuv, pulsometriya, izometrik mashqlar, jismoniy tayyorgarlik.*

INTRODUCTION

Today, the broad involvement of persons with disabilities in health-improving and sports activities within the system of physical education and sports is considered an important socio-pedagogical task. In particular, the development of physical qualities, especially strength qualities, in students

engaged in Paralympic sports is of great importance not only for improving sports performance but also for enhancing their general functional condition (N.G. Ozolin, 2018). Strength quality is one of the main indicators of the muscular system, ensuring the effectiveness of motor activity and determining the athlete's overall level of preparedness (Yu.V. Verkhoshanskiy, 2017).

When organizing the training process for Paralympic athletes, it is necessary to take into account their physiological and psychological characteristics. From this point of view, static exercises (isometric exercises) are considered one of the most appropriate means for students with disabilities. These exercises make it possible to create safe and controlled loads by generating muscle tension in a stationary state (A.A. Guzalovskiy, 2020). In addition, static exercises reduce the risk of injury and provide targeted effects on specific muscle groups.

Although modern scientific studies contain certain findings regarding the effect of static exercises on strength qualities, specially adapted methodologies for students engaged in Paralympic sports have not yet been sufficiently developed. In particular, issues related to individualized load management, monitoring through pulsometry, and systematic organization of the training process remain highly relevant.

Therefore, the purpose of this study is to substantiate effective pedagogical methods for improving strength qualities through static exercises in students engaged in Paralympic sports.

The process of developing strength qualities in students engaged in Paralympic sports is considered a complex pedagogical and physiological system. In this process, static exercises serve as an important means of developing strength through isometric muscle contractions. During isometric exercises, maximum or submaximum tension occurs without changing muscle length, ensuring the active functioning of muscle fibers (Yu.V.

Verkhoshanskiy, 2017). Such exercises are especially distinguished by their safety and effectiveness for students with disabilities [2].

One of the main advantages of static exercises is that they do not require movement amplitude and are therefore convenient even for students with limited mobility. Through these exercises, it is possible to provide targeted effects on specific muscle groups, allowing the purposeful development of strength qualities (N.G. Ozolin, 2018). For example, special static positions are selected for the muscles of the arms, shoulders, waist, and legs and maintained for a certain period of time. As a result, muscle tension increases and strength indicators gradually improve over time [4].

One of the important aspects of applying static exercises is the correct determination of load parameters. According to scientific sources, the holding time during isometric exercises is usually recommended to be within 5–30 seconds, while the number of repetitions should range from 3 to 6 times (A.A. Guzalovskiy, 2020). At the same time, it is important to optimally organize rest intervals between exercises. Excessive load may negatively affect the student's functional condition; therefore, the load should be planned individually [5].

In this process, monitoring based on pulsometry is considered an effective tool. Heart rate indicators are used to determine the load level and regulate training intensity. In practice, the range of 120–140 beats per minute is considered the optimal zone, while indicators above 150 beats are evaluated as a sign of excessive load. This approach plays an important role in ensuring the safety of training sessions for Paralympic athletes.

Furthermore, in order to effectively apply static exercises, it is necessary to develop an Individual Educational Plan (IEP). An exercise complex is designed for each student taking into account their functional capabilities, health condition, and psychological characteristics. At the initial stage, simple

static exercises are applied, and later more complex exercises are gradually introduced. This ensures the consistent development of strength qualities.

As a result, static exercises prove to be an effective, safe, and scientifically grounded means of developing strength qualities in Paralympic athletes.

CONCLUSION

The results of this study showed that static exercises are one of the effective and scientifically grounded means of developing strength qualities in students engaged in Paralympic sports. Isometric exercises ensure muscle tension in a stationary state and create safe and controlled loads, especially for students with disabilities. This is of great importance in optimizing the training process and reducing the risk of injury (Yu.V. Verkhoshanskiy, 2017).

During the study, it was determined that the application of static exercises based on an individual approach, the correct determination of load parameters, and monitoring through pulsometry provide high efficiency in improving strength qualities. In particular, the gradual complication of exercises, planning aimed at specific muscle groups, and consideration of each student's functional capabilities lead to positive results (N.G. Ozolin, 2018).

FOYDALANILGAN ADABIYOTLAR

1. Azizov, S. V., Azizova, R. I., Mahmudjonov, A., & Tuxtaboyeva, N. (2024). SPORTCHILARDA O 'YIN JARAYONINI YUQORI DARAJADA IDROK QILISH QOBILIYATINI SHAKLLANTIRISH INTELLEKTUAL TAYYORGARLIKNING ASOSIY VAZIFASI. *Экономика и социум*, (9 (124)), 82-86.

2. Azizov, S. V., Mahmudjonov, A. A., & Oripov, A. F. (2024). Sprinterlarni tayyorlashda psixologik tayyorgarlikning ahamiyati. *Экономика и социум*, (6-2 (121)), 85-90.

3. Jo'rayev, T. T., Mahmudjonov, A. A., & Shamsitdinova, M. F. (2024). THE EFFECTIVENESS OF USING NATIONAL ACTION GAMES IN DEVELOPING SPORTS ELEMENTS. *MASTERS*, *2*, 29-33.

4. Shamsitdinova, M. F. (2022). UMUMTA'LIM MAKTABLARI O 'QUVCHILARINING JISMONIY TAYYORGARLIGIGA BASKETBOL SPORT TO'GARAKLARINING TA'SIRI. *INTERNATIONAL CONFERENCE ON LEARNING AND TEACHING*, *1*(9), 208-212.

5. Костикова, О. В., Азизов, С. В., Болтобаев, С. А., Азизова, Р. И., & Махмуджонов, А. А. (2025). Развитие у юных баскетболистов скорости и точности броска. *Физическая культура, спорт-наука и практика*, *2*, 109-114.

6. Makhmudovich, G. A., & Abduvokhid o'g'li, M. A. (2024). THE ROLE OF SPORTS IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS. *INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 8.036*, *13*(01), 13-15.

7. Makhmudovich, G. A. (2024). MOVEMENT SKILLS OF YOUNG GYMNASTS AND THE LAWS OF ITS FORMATION. *INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY*, 751-754.

8. Makhmudovich, G. A. (2024). METHODS OF MONITORING THE PHYSICAL DEVELOPMENT OF HIGH SCHOOL STUDENTS THROUGH GYMNASTICS. *INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY*, 735-739.

9. Makhmudovich, G. A. (2024). THE IMPORTANCE OF SPECIAL METHODS IN INCREASING THE EFFICIENCY OF SPORTS EXERCISES. *INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY*, 730-734.

10. Mahmudjonov, A. A., Izatullayev, A. M., & Ergashaliyev, D. N. (2024). THE IMPORTANCE OF GENERAL PHYSICAL FITNESS IN INCREASING THE EFFICIENCY OF SPORTS TRAINING IN PRIVATE SCHOOLS. *INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY*, 755-759.

11. G‘ofirjonova, A. I. (2022). MILIY HARAKATLI O ‘YINLARNI SPORT ELEMENTLARINI O‘ZLASHTIRISHDA QO‘LLASHNING SAMARADORLIGI. *INTERNATIONAL CONFERENCE ON LEARNING AND TEACHING*, *1*(9), 171-176.

12. O‘g‘li, E. D. N. (2026). YOSH GANDBOLCHILARNI TEXNIK USULLARGA O ‘RGATISH VA ULARNI NAZORAT QILISH. *Research Focus*, *5*(2), 88-93.

13. Makhmudovich, G. A., & Abduvokhid o‘g’li, M. A. (2024). THE ROLE OF SPORTS IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS. *INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 8.036*, *13*(01), 13-15.

14. Makhmudovich, G. A., & Makhmudovich, G. A. (2023). STUDY OF FUNCTIONAL INDICATORS OF YOUNG SWIMMERS. *INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & INTERDISCIPLINARY RESEARCH ISSN: 2277-3630 Impact factor: 8.036*, *12*(10), 29-31.

15. Butabayev, A. X., & Ergashaliyev, D. N. (2024). GANDBOLCHILARNI HUJUM VA HIMOYADAGI SHAXSIY TAKTIK HARAKATLARINI SAMARADORLIGINI OSHIRISH USULLARI. *Экономика и социум*, (6-1 (121)), 160-166.