



EFFECT OF JUDO TRAINING ON PHYSICAL FITNESS AND FUNCTIONAL PREPAREDNESS OF UNIVERSITY STUDENTS

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Abstract. *This study examined the effect of judo training on the physical fitness and functional preparedness of university students. The increasing prevalence of sedentary lifestyles and insufficient physical activity among students necessitates the implementation of effective forms of physical education that contribute to comprehensive physical development and health improvement. Judo is characterized by diverse motor actions, dynamic movements, strength-based techniques, and high physical demands, making it an effective means of developing physical qualities and improving functional capacities. The study involved 64 university students aged 18–20 years who participated in a 16-week pedagogical experiment. The experimental group engaged in judo-oriented training sessions, while the control group followed the traditional physical education curriculum. The results demonstrated significant improvements in physical fitness and functional preparedness among students involved in judo training. Positive changes were observed in strength, endurance, coordination, and cardiovascular efficiency. The findings confirm that judo training can be effectively integrated into university physical education programs to enhance students' physical development and functional health.*

Keywords: judo, university students, physical fitness, functional preparedness, physical education, strength, endurance, coordination, health promotion.

Introduction. The preservation and enhancement of students' health remain among the primary objectives of modern higher education. Contemporary university students are increasingly exposed to factors that negatively affect their physical condition, including prolonged sedentary behavior, intensive academic workloads, insufficient motor activity, and irregular participation in physical exercise. These conditions contribute to a decline in physical fitness, deterioration of functional health indicators, and reduced adaptive capacities of the organism.

Scientific evidence suggests that regular physical activity plays a crucial role in maintaining health, preventing hypodynamia, and improving the functional state of the cardiovascular, respiratory, and musculoskeletal systems. Consequently, higher education institutions are actively seeking effective forms of physical education that not only improve physical preparedness but also promote long-term engagement in healthy lifestyle behaviors.

Combat sports occupy a special place among the means of physical education due to their comprehensive influence on physical and personal development. Among them, judo is recognized as one of the most effective forms of physical training. Developed as both a sport and an educational system, judo combines physical, technical, tactical, and psychological components. Training sessions involve throwing techniques, balance

control, gripping actions, movement coordination, and strength-based exercises that require considerable physical effort and concentration.

Regular judo practice contributes to the development of strength, endurance, flexibility, coordination, agility, and reaction ability. In addition, judo training improves body control, movement efficiency, and functional adaptation to physical loads. The diverse and dynamic nature of judo exercises stimulates multiple physiological systems simultaneously, creating favorable conditions for comprehensive physical development.

Beyond its physical benefits, judo possesses substantial educational value. The principles of respect, discipline, self-control, perseverance, and responsibility are fundamental elements of judo practice. These characteristics contribute to the formation of positive personal qualities and encourage students to maintain active participation in physical education activities.

Previous studies have reported positive effects of judo training on physical fitness, motor performance, and health-related indicators. Researchers have identified improvements in muscular strength, aerobic capacity, coordination abilities, and overall physical preparedness among individuals engaged in regular judo practice. Nevertheless, further investigation is required to determine the effectiveness of judo training in improving both physical fitness and functional preparedness among university students.

In the context of modern higher education, increasing students' interest in physical activity has become an important pedagogical challenge. Traditional physical education programs do not always provide sufficient motivation for regular participation in exercise, which

necessitates the use of more engaging and practice-oriented forms of training. Judo offers a unique combination of physical conditioning, technical skill development, and personal growth, making it particularly attractive for young adults. Its educational and health-promoting potential allows it to be considered not only as a sport but also as an effective means of improving students' overall physical and functional preparedness.

Therefore, the purpose of this study was to examine the influence of judo training on physical fitness and functional preparedness of university students.

Materials and Methods. The study involved 64 university students aged 18–20 years. The participants were divided into two groups: a control group ($n = 32$) and an experimental group ($n = 32$). All participants were medically cleared for physical education classes and voluntarily participated in the study.

The pedagogical experiment lasted for 16 weeks. Students in the control group attended traditional physical education classes that included general physical exercises and conditioning activities. Students in the experimental group participated in judo-oriented training sessions integrated into the physical education program.

The judo training program included basic throwing techniques, falling techniques, gripping exercises, movement drills, coordination exercises, strength-oriented tasks, and educational sparring activities. Particular attention was given to the development of strength, endurance, agility, and coordination. Training sessions were conducted twice a week and lasted 90 minutes.

During the training process, the difficulty and intensity of exercises were gradually increased according to the participants' level of preparedness. Educational sparring and technical-tactical exercises were systematically incorporated into the sessions to improve students' motor skills and physical performance. The training content was designed to ensure balanced development of the major physical qualities required in judo practice.

The effectiveness of the program was evaluated through the assessment of physical fitness and functional preparedness before and after the experimental period. Physical fitness indicators included strength, endurance, agility, and coordination abilities, while functional preparedness was assessed through indicators reflecting cardiovascular and respiratory efficiency. The obtained results were analyzed to determine the influence of judo training on the investigated indicators among university students.

Results and Discussion. The analysis of the experimental data demonstrated that participation in the judo training program had a positive effect on both physical fitness and functional preparedness of university students. Although improvements were observed in both groups after the 16-week intervention, the changes recorded in the experimental group were more pronounced.

Students who participated in judo-oriented training showed noticeable progress in strength, endurance, agility, and coordination. The regular performance of throwing techniques, gripping exercises, movement drills, and sparring activities contributed to the development of muscular strength and movement efficiency. The dynamic nature of

judo training also enhanced students' ability to perform complex motor actions under varying conditions.

Improvements in functional preparedness were also observed among students in the experimental group. Regular participation in judo exercises promoted better adaptation of the cardiovascular and respiratory systems to physical loads. Students demonstrated increased exercise tolerance and improved recovery following training sessions, indicating positive functional adaptations of the organism.

The positive changes identified during the study can be explained by the specific characteristics of judo training. Unlike many traditional forms of physical education, judo combines aerobic and anaerobic exercise with technical and tactical tasks, requiring continuous physical and mental engagement. Such training conditions stimulate the development of multiple physical qualities simultaneously and contribute to comprehensive physical improvement.

The findings of the present study are consistent with previous research emphasizing the effectiveness of combat sports in enhancing physical preparedness and functional health. Researchers have reported that regular judo practice contributes to improvements in muscular strength, coordination abilities, aerobic capacity, and overall physical performance. The results obtained in this study further support the use of judo as an effective means of physical education for university students.

From a pedagogical perspective, judo training provides not only physical benefits but also valuable educational outcomes. Participation in judo activities encourages discipline, self-control, perseverance, and responsibility. These qualities can positively influence students'

attitudes toward physical education and promote long-term involvement in physical activity.

Overall, the results indicate that the integration of judo-oriented training into university physical education programs can contribute significantly to improving students' physical fitness and functional preparedness. The comprehensive nature of judo makes it a valuable tool for enhancing both health-related and performance-related aspects of physical development among young adults.

Conclusions. The study demonstrated that judo training is an effective means of improving physical fitness and functional preparedness among university students.

Regular participation in judo-oriented training contributed to the development of strength, endurance, agility, and coordination, while also promoting positive adaptations of the cardiovascular and respiratory systems. Students involved in judo training showed greater improvements in physical and functional indicators compared with those participating in traditional physical education classes.

The findings confirm that judo can be successfully integrated into university physical education programs as a means of enhancing students' physical development and overall functional health. The comprehensive influence of judo training makes it an effective educational tool for promoting active lifestyles and improving physical preparedness among higher education students.

Future research may focus on investigating the long-term effects of judo training on health-related fitness, psychological well-being, and academic performance of university students.

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