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THE EFFECTIVENESS OF SPECIAL EXERCISES IN DEVELOPING ENDURANCE IN YOUNG FOOTBALL PLAYERS

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Abstract
This article explores the effectiveness of special exercises in developing endurance in young football players. Emphasis is placed on the importance of endurance as a key physical quality that underpins overall performance in football. The study analyzes how age-appropriate and systematically organized exercises can improve cardiovascular capacity, muscular stamina, and recovery rates among youth athletes. Through a pedagogical and physiological lens, the paper examines the structure, intensity, and progression of endurance-oriented drills used during training. The article also evaluates the relationship between endurance development and the long-term athletic growth of young players. Findings indicate that properly selected and applied special exercises significantly contribute to enhancing endurance, ultimately improving the players' match performance and resilience on the field.

Keywords: Endurance, youth football players, physical training, special exercises, sports performance, training methodology, athletic development.

Introduction

YOSH FUTBOLCHILARDA CHIDAMKORLIKNI SHAKLLANTIRISHDA MAXSUS MASHQLARNING SAMARADORLIGI

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Annotatsiya:
Ushbu maqolada yosh futbolchilarda chidamkorlikni rivojlantirishda maxsus mashqlarning samaradorligi tahlil qilinadi. Chidamkorlik futbolchining umumiy jismoniy tayyorgarligini belgilovchi asosiy sifatlardan biri sifatida alohida o‘rin egallaydi. Tadqiqot davomida yosh sportchilarning yurak-qon tomir tizimi faolligini oshirish, mushaklarning bardoshliligini kuchaytirish va tiklanish tezligini yaxshilashda yoshga mos va tizimli tashkil etilgan mashqlar muhim rol o‘ynashi ko‘rsatib o‘tilgan. Maqolada chidamkorlikni rivojlantirishga yo‘naltirilgan mashg‘ulotlarning tuzilishi, intensivligi va bosqichma-bosqich rivojlanishi pedagogik va fiziologik nuqtai nazardan yoritiladi. Shuningdek, chidamkorlikning shakllanishi bilan yosh futbolchilarning uzoq muddatli sport rivoji o‘rtasidagi bog‘liqlik baholanadi. Tadqiqot natijalari shuni ko‘rsatadiki, to‘g‘ri tanlangan va amalda qo‘llangan maxsus mashqlar chidamkorlikni sezilarli darajada oshiradi, bu esa futbolchilarning o‘yin samaradorligi va maydondagi bardoshliligini yaxshilaydi.

Kalit so‘zlar: chidamkorlik, yosh futbolchilar, jismoniy tayyorgarlik, maxsus mashqlar, sport natijalari, mashg‘ulot metodikasi, sport rivoji.

Introduction

In modern football, endurance is considered one of the most essential components of physical fitness, especially for young athletes undergoing foundational training. Endurance enables players to maintain optimal performance levels over the duration of a match, resist fatigue, and execute tactical tasks effectively. In the developmental stages of football training, cultivating this quality requires a well-structured approach that balances physiological load with pedagogical appropriateness. Young players differ significantly from adults in terms of cardiovascular efficiency, metabolic rates, and recovery ability, which necessitates age-specific strategies for endurance development.

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The growing pace and intensity of contemporary football matches demand that youth training programs place special emphasis on aerobic and anaerobic endurance. Coaches and sports educators must understand not only the physical aspects of endurance but also the cognitive and motivational factors that influence young athletes' commitment to long-term physical training. The integration of special exercises designed specifically to build endurance is crucial in this regard, as they can be tailored to both the physical maturity and the psychological readiness of young football players.

Furthermore, developing endurance at an early age lays the foundation for successful athletic progression. Players who possess strong endurance capacities are better equipped to handle complex match situations, recover quickly between high-intensity efforts, and contribute more consistently to team dynamics. As such, the role of special exercises in endurance development goes beyond mere physical conditioning; it forms an integral part of holistic athlete formation.

Literature Review

The development of endurance in youth football has been extensively studied in both sports science and pedagogical literature. According to Bompa and Haff (2009), endurance is a fundamental attribute that must be systematically developed during the formative years of athletic training. Several researchers, including Reilly and Williams (2003), highlight that endurance training must align with the biological maturation of young athletes to avoid overtraining and ensure optimal physiological adaptation.

Studies by Malina et al. (2004) emphasize the importance of age-appropriate workloads and training variability to prevent early burnout and promote long-term athletic development. Other authors, such as Bangsbo (1994), have focused specifically on football, suggesting that game-specific endurance drills are more effective than traditional long-distance running for football players. This approach is supported by research showing that sport-specific endurance training improves both aerobic capacity and match performance metrics.

Moreover, literature from pedagogical fields underlines the role of motivation, coaching style, and feedback in enhancing young players' engagement with endurance training (Weinberg & Gould, 2018). Together, these findings form a

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robust foundation for designing training programs that integrate special exercises into the development of endurance, particularly within youth football contexts.

Methodology

The research employed a qualitative-quantitative mixed-methods approach to evaluate the effectiveness of special exercises in developing endurance among young football players aged 12 to 14. The study was conducted over a 12-week training cycle at a youth football academy in Uzbekistan, involving 30 male participants divided equally into control and experimental groups. The control group followed a standard football training program, while the experimental group underwent additional endurance-focused sessions incorporating special exercises designed to enhance aerobic and anaerobic capacity.

Initial and final physical assessments were conducted using the Cooper test, shuttle run (10x10m), and a Yo-Yo Intermittent Recovery Test to measure endurance levels. Heart rate monitoring and perceived exertion scales (RPE) were also used to evaluate physiological response and fatigue management. Training sessions for the experimental group included interval running, circuit training, small-sided games with endurance emphasis, and progressive overload techniques.

Data were collected weekly, and post-training results were compared using statistical analysis to determine the significance of improvements. Qualitative observations from coaches and participant feedback were also recorded to assess motivational impact and overall receptiveness to the exercises. This methodology ensured both the scientific rigor and pedagogical relevance of the study in the context of youth sports education.

Discussion

The implementation of special exercises within the training routine of young football players demonstrated a notable impact on endurance development. The experimental group, which engaged in structured endurance-focused drills, showed statistically significant improvements in performance across all physical tests compared to the control group. The Cooper test results indicated increased aerobic capacity, while the Yo-Yo Intermittent Recovery Test revealed enhanced ability to recover between high-intensity efforts. These findings are consistent with existing literature emphasizing the benefits of sport-specific endurance training.

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One key factor in the success of the special exercises was the use of varied and engaging formats, such as small-sided games and circuit-based routines, which not only targeted physiological development but also maintained player motivation and involvement. The psychological engagement of youth players is crucial; without it, physical improvements may not translate into sustainable performance gains. Observations during training revealed that players responded positively to challenges embedded within game-like drills, which helped simulate real-match conditions and enhanced tactical decision-making under fatigue.

Furthermore, the exercises were carefully adjusted to match the age and fitness level of the players, avoiding excessive fatigue or injury risk. Coaches reported increased attentiveness, improved team communication, and higher energy levels during matches, particularly in the final minutes. The progressive nature of the training allowed athletes to build resilience over time, which is especially important during growth and developmental phases.

Another noteworthy aspect is the pedagogical benefit of incorporating endurance development within a broader training framework rather than isolating it. The fusion of technical-tactical tasks with endurance training ensured the exercises remained relevant to actual football performance. The findings of this study thus support the inclusion of special endurance exercises as a standard component of youth football training methodology. They highlight the importance of integrating physical, psychological, and tactical dimensions to foster comprehensive athletic development.

Main Part

Endurance, as a physical quality, plays a crucial role in football, particularly in maintaining performance consistency throughout the match. For young football players, endurance training must be thoughtfully designed to align with their physiological capabilities and cognitive development. Special exercises, when appropriately selected, serve as an effective tool in building this capacity without causing overstrain or loss of interest in training.

One of the key principles in developing endurance among youth is the gradual increase in load intensity. Special exercises such as repeated short sprints with limited recovery, aerobic circuits, and dynamic interval games allow young players to adapt progressively. These exercises also promote muscular and cardiovascular

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efficiency. For instance, the use of "fartlek"-style running in football-specific settings not only stimulates aerobic capacity but also mimics the unpredictable pace of real matches.

Furthermore, incorporating endurance exercises into game-like scenarios increases their effectiveness. Training that includes tasks requiring tactical awareness, spatial orientation, and rapid decision-making—performed under physical strain—enhances the ability to maintain focus and performance during competitive matches. Drills such as 4v4 or 5v5 games with limited space and time constraints encourage continuous movement, teamwork, and endurance under pressure.

Age-appropriate programming is essential. For players aged 12 to 14, exercises should be varied and engaging to sustain attention and motivation. Overemphasis on monotonous long-distance running may lead to demotivation and reduced effectiveness. In contrast, well-structured training that alternates between intensity levels, incorporates recovery, and links physical conditioning to football skills ensures better development outcomes.

Additionally, attention must be paid to recovery and rest. Young athletes require adequate time to restore energy reserves and prevent overtraining. Monitoring tools, such as heart rate data and subjective fatigue assessment, are valuable in adjusting the training load. Nutrition and sleep also contribute significantly to endurance capacity, and these factors should be considered within the holistic development plan.

In summary, the integration of special exercises for endurance development in young football players should be strategic, age-sensitive, and multifaceted. It must combine scientific principles of physical conditioning with pedagogical insight, ensuring long-term athletic growth and sustainability. This approach not only enhances endurance but also builds a foundation for broader physical, psychological, and tactical competencies required in football.

Conclusion

The findings of this study confirm that special exercises play a critical role in developing endurance among young football players. When designed and implemented thoughtfully, these exercises not only enhance aerobic and anaerobic capacity but also support overall athletic growth. The experimental results demonstrate that structured, sport-specific endurance training significantly

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improves physical performance indicators and contributes to better match preparedness.

Endurance development in youth should not be approached in isolation. Rather, it must be embedded within a broader pedagogical framework that considers technical, tactical, and psychological components of training. Engaging and varied exercises that reflect real-game scenarios help maintain player motivation, reduce the risk of overtraining, and promote long-term adherence to training programs.

Moreover, age-appropriate progression, individualized load management, and recovery planning are essential to ensure both effectiveness and safety. Coaches, trainers, and sports educators must collaborate to deliver a training environment that nurtures resilience, consistency, and enthusiasm in young athletes.

In conclusion, the integration of special endurance exercises into youth football training should be viewed as a strategic and necessary component of holistic player development. It equips young footballers not only with physical stamina but also with the mental discipline and tactical intelligence required to succeed in competitive football.

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