EMPOWERMENT OF CHINESE BOXING PRACTITIONERS UNDER EARLY TRAINING

CAPACITAÇÃO DE PRATICANTES DE BOXE CHINÊS SOB TREINAMENTO PRECOCE

POTENCIACIÓN DE PRACTICANTES DE BOXEO CHINO CON UN ENTRENAMIENTO TEMPRANO

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ABSTRACT

Introduction: Early special training has been widely used to improve athletic performance in young Chinese boxing athletes. For athletes to make better use of training time and accumulate maximum special competitive skills, intensive training is required from their youth. Objective: Study the competitive ability of Chinese boxing athletes under strengthening through early physical training. Methods: Through literature method, experimental methods, and mathematical statistical analysis, the athletes' body composition and their performance in specific and functional physical activities were analyzed. Results: Young athletes significantly differed in BMI, height, and limb length (P<0.05). There was no significant difference in height, the distance between fingers, Achilles tendon length (P>0.05). No significant difference was found in flexibility and sensitivity among volunteers (P>0.05). Conclusion: The athletes participating in early training are uniformly matched, the level of tactical ability of the athletes under training has a differential that can directly impact future sports performance, and this practice is recommended to improve the athletes' sports performance. ***Level of evidence II; Therapeutic studies - investigation of treatment outcomes.***

Keywords: Boxing; Physical Education and Training; Early Intervention, Educational.

RESUMO

Introdução: O treinamento especial precoce tem sido amplamente utilizado visando melhorar o desempenho atlético em jovens atletas de boxe chinês. No intuito dos atletas aproveitarem melhor o tempo de treino e acumular o máximo de habilidades competitivas especiais, é requerido um treinamento intensivo desde sua juventude. Objetivo: Estudar a capacidade competitiva dos atletas de boxe chinês sob o fortalecimento através do treinamento físico precoce. Métodos: Através do método de literatura, métodos experimentais e análise estatística matemática, analisou-se a composição corporal dos atletas, seu desempenho em atividades físicas específicas e funcionais. Resultados: Houve diferenças significativas no IMC, altura e comprimento de membros entre os jovens atletas (P<0,05). Não houve diferença significativa na altura, distância entre os dedos, comprimento do tendão de Aquiles (P>0,05). Não foi encontrada diferença significativa na flexibilidade e na sensibilidade entre os voluntários (P>0,05). Conclusão: Os atletas participantes do treinamento precoce são uniformemente equiparados, o nível de habilidade tática dos atletas sob capacitação nesse treinamento tem um diferencial que pode impactar diretamente sobre o desempenho esportivo futuro, sendo recomendada essa prática para melhorar o desempenho esportivo dos atletas. ***Nível de evidência II; Estudos terapêuticos - investigação dos resultados do tratamento.***

Descritores: *Boxe; Educação Física e Treinamento; Intervenção Educacional Precoce.*

RESUMEN

Introducción: El entrenamiento especial temprano se ha utilizado ampliamente con el objetivo de mejorar el rendimiento deportivo en los jóvenes atletas de boxeo chinos. Para que los deportistas aprovechen mejor su tiempo de entrenamiento y acumulen el máximo de habilidades competitivas especiales, es necesario un entrenamiento intensivo desde su juventud. Objetivo: Estudiar la capacidad competitiva de los atletas chinos de boxeo bajo fortalecimiento a través del entrenamiento físico temprano. Métodos: Mediante el método bibliográfico, los métodos experimentales y el análisis estadístico matemático, se analizó la composición corporal de los atletas y su rendimiento en actividades físicas específicas y funcionales. Resultados: Hubo diferencias significativas en el IMC, la altura y la longitud de las extremidades entre los jóvenes atletas (P<0,05). No hubo diferencias significativas en la altura, la distancia entre los dedos y la longitud del tendón de Aquiles (P>0,05). No se encontraron diferencias significativas en la flexibilidad y la sensibilidad entre los voluntarios (P>0,05). Conclusión: Los atletas que participan en el entrenamiento temprano están uniformemente emparejados, el nivel de habilidad táctica de los atletas en entrenamiento tiene un diferencial que puede impactar directamente en el futuro rendimiento deportivo, siendo recomendada esta práctica para mejorar el rendimiento deportivo de los atletas. ***Nivel de evidencia II; Estudios terapéuticos - investigación de los resultados del tratamiento.***

Descriptores: *Boxeo; Educación y Entrenamiento Físico; Intervención Educativa Precoz.*

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INTRODUCTION

In order to improve the athletic performance of young Wushu Sanda athletes, so that athletes have more time and opportunities to develop and accumulate special competitive ability, early special training has been widely used in training practice.[1] Monteiro J believes that early specialization training means that after the specialization is determined, the early training aimed at laying a solid foundation for special training.[2] Elkilany A believes that the early training of basic ability training suitable for children's physical and mental development and the characteristics of the sensitive period of movement for certain sports needs.[3] According to Al-Mutair A S, early specialization refers to "in early childhood or adolescence, in order to target a specific sport, do preparatory training for the improvement of special ability in the future, it is an early talent selection and training project".[4] Scholars such as Jin F pointed out that early adolescent specialized training refers to high-intensity training around a specific sport before puberty.[5] Abdelhamid Y A, in the comparative study of the characteristics of the competitive ability of the representative events of the confrontation group, believes that: In Sanda sports, the importance of different energy metabolism systems is ranked, anaerobic metabolism is the most important energy supply, mixed metabolic energy supply is second, and aerobic metabolism is the second.[6] Whether the tactical ability of Sanda athletes can be used freely in actual combat, the impact on athletic performance plays a crucial role. Therefore, the author focuses on the analysis of the composition and influencing factors of the tactical ability of Sanda athletes, aiming to provide some reasonable suggestions for improving the sports performance of Sanda athletes.

METHOD

Research object

A sports school affiliated to a sports college, 17 young male Wushu Sanda players were selected.

Method

Documentation method

In CNKI database, the subject words such as "Martial Arts Sanda" and "Physical Form" were used for retrieval, and the retrieval time was all years. Search the Elsevier database with competitivetaekwondo as the keyword; Searching with Sanda as the key word, reading relevant literature in the research process, and conducting statistics, sorting and inductive analysis, provides a lot of theoretical basis for the author's research.[7]

Selection basis of test items

① Refer to the test indicators of the "Iron Man Basic Physical Fitness Test Plan" launched by the General Administration of Sports of China in preparation for the Tokyo Olympics.

②Basic physical fitness includes body shape, functions of various organ systems of the body, basic life ability, and corresponding sports abilities such as running, jumping, crawling, throwing, and climbing for various sports. Therefore, basic physical fitness should include basic qualities such as flexibility, strength, speed, endurance, and agility, as well as basic movement patterns such as running, jumping, and squatting. Sitting forward flexion tests flexibility and agility.

③ Refer to the material selection index of Wushu Sanda project, Wushu Sanda physical training, basic physical training and other related literature.

Mathematical statistics

Using spss20.0 statistical software, the test results of Wushu Sanda athletes are tested positively, check whether it conforms to the normal distribution. If it conforms to the normal distribution, use the independent sample T test to analyze the M, T, and P values, if it does not conform to the normal distribution, a nonparametric test is used, with $P<0.05$ as the significant level. Results were expressed as mean ± standard deviation (M ± SD).[8]

Ethical Compliance

Research experiments conducted in this article with animals or humans were approved by the Ethical Committee and responsible authorities of Henan Technical College of Construction following all guidelines, regulations, legal, and ethical standards as required for humans or animals.

RESULTS

Analysis of physical characteristics of young male Wushu Sanda athletes

Body shape refers to the morphological characteristics inside and outside the human body, different sports have different requirements for the morphological characteristics of athletes, at the same time, body shape is closely related to sports performance. Table 1 shows the results of independent sample t-test on the body shape data of small-level athletes and large-level athletes in the two events, the P values of height, finger distance, sitting height, upper limb length, lower limb length, and calf length are greater than 0.05, indicating that there is no significant difference in several test indicators between small-level athletes and large-level athletes; The P values of body mass index (BMI) and Achilles tendon length were less than 0.05, indicating that there were significant differences in BMI and Achilles tendon length between small-level athletes and large-level athletes.

The test data between the overall athletes, small-level athletes, and large-level athletes of the two events are compared, and the results are shown in Table 2, the average BMI of the overall Wushu Sanda athletes was 22.2±2.5kg/m2, the average BMI of small-level Wushu Sanda athletes is 20.2±1.6kg/m2, the average BMI of large-scale Wushu Sanda athletes is 24.0±1.5kg/m2, the average length of lower limbs of small-level and large-level Wushu Sanda athletes were 89.7±4.3cm and 91.9±5.3cm, respectively, there was no significant difference in lower extremity length among major athletes; The average upper limb length of the overall Wushu Sanda athletes was 75.1±6.9cm, and the upper limb length of the overall competitive Taekwondo athletes was significantly greater than that of the overall Wushu Sanda athletes.

Table 1. The results of the comparison of body shape performance between small-level athletes and large-level athletes in the two events (M±SD) N=17.

Test items	Small level	Big level	P
BMI (kg/m2)	19.4±2.9	22.9±2.7	<0.05
Height (cm)	173.4±6.7	178.9±10.2	>0.05
Finger distance (cm)	175.8±7.6	174.3±25.7	>0.05
Sitting height (cm)	109.3±19.5	115.1±19.5	>0.05
Upper limb length (cm)	75.7±7.0	829±29.1	>0.05
Lower limb length (cm)	93.5±6.5	91.5±19.9	>0.05
Calf length (cm)	39.7±2.5	44.9±14.0	>0.05

Table 2. Test results of sitting forward flexion of young male Wushu Sanda athletes (M±SD) N=17.

Test items	Overall	Wushu sanda small level	Big level
BMI (kg/m2)	22.2±2.5	20.2±1.6	24.0±1.5
Height (cm)	174.7±6.8	172.0±6.6	177.1±6.3
Finger distance (cm)	177.3±6.3	175.0±7.3	179.4±4.6
Sitting height (cm)	126.5±11.1	124.3±12.1	128.4±10.5
Upper limb length (cm)	75.1±6.9	75.9±9.6	74.3±3.2
Lower limb length (cm)	90.9±4.8	89.7±4.4	91.9±5.3
Calf length (cm)	41.7±2.5	41.0±1.7	42.2±2.9
Achilles tendon length (cm)	26.5±2.7	24.6±5.1	27.5±2.5

Note: * means p<0.05.

Analysis of the characteristics of flexibility and quality of young male Wushu Sanda athletes

Sitting forward flexion mainly tests the degree of trunk bending, this test method has high safety, accuracy and authenticity, it can measure the flexibility of the superficial back muscles, the back of the thighs and the buttocks muscles, it is also a commonly used method for testing flexibility.[9] In the process of sports, flexibility is of great significance for the coordination of movements, increasing the range of motion, and preventing or reducing injuries to athletes, in addition, the flexibility quality also has a certain influence on other qualities. For example, the good performance of strength quality and speed quality requires flexibility quality as the basis.

The test data between small-level athletes and large-level athletes are compared, and the results are shown in Table 3, overall, the average scores of young male Wushu Sanda athletes and high-level athletes in sitting forward bending were 10.5±8.3cm and 13.1±8.6cm, respectively, overall, there is no significant difference in the performance of Wushu Sanda athletes and high-level athletes in sitting forward bending, the average performance of small-level Wushu Sanda athletes sitting forward bending is 7.6±7.5cm.

Analysis of the characteristics of sensitive qualities of young male Wushu Sanda athletes

Sensitive quality refers to the athlete's ability to perform under various sudden changes, the ability to perform movements with speed, coordination, and accuracy. The agility quality is based on the athlete's strength, speed (reaction speed, action speed), endurance, flexibility and other abilities.[10]

The test data between small-level athletes and large-level athletes are compared, and the results are shown in Table 4, the average T-run test scores of the small-level and large-level Wushu Sanda athletes were 11.4±0.7s, 11.0±0.7s, and 11.8±0.5s, respectively, with no significant difference.

There is no significant difference in the agility quality of the overall, small and large athletes in the speed quality and between the sports between small-level athletes and large-level athletes in Wushu Sanda, the description attaches great importance to the development of sensitive qualities.

Table 3. Test results of sitting forward bending test for young male Wushu Sanda athletes (M±SD) N=17.

	Overall	Wushu sanda small level	Big level
Sitting forward bend (cm)	10.5±8.3	7.6±7.5	13.4±8.6

Table 4. T-run test results of young male Wushu Sanda athletes (M±SD) N=17.

	Overall	Wushu sanda small level	Big level
T-run(s)	11.4±0.7	11.0±0.7	11.8±0.5

Note: * means p<0.05.

DISCUSSION

The reason for the significant difference in aerobic capacity may be that Wushu Sanda belongs to flexible tactics and fast transition of attack and defense, the stalemate time of Wushu Sanda in the competition will be much shorter, and the output time of high-intensity technical movements will be more, the small-level athletes are not very different in the transition of offense and defense and the rhythm of the game, however, there is a big gap between the game rhythm and the transition time of offense and defense among the big players, studies have shown that high-intensity interval training can significantly improve anaerobic and aerobic exercise endurance, Wushu Sanda athletes have more opportunities to improve high-intensity anaerobic endurance and intermittent aerobic capacity, ultimately, the intermittent aerobic performance of high-level Wushu Sanda athletes is better than that of high-level competitive Taekwondo athletes.

CONCLUSION

Overall comparison, there were significant differences in BMI, sitting height, upper limb length, and lower limb length of young male Wushu Sanda athletes (P<0.05), there was no significant difference in height, finger distance, calf length and Achilles tendon length (P>0.05). There was no significant difference in the flexibility and agility of young male Wushu Sanda athletes (P>0.05). Strengthen the basic technical ability training of athletes, pay attention to the cultivation of athletes' offensive and defensive awareness and the long-term accumulation of tactical knowledge, improve the overall quality of athletes, it will definitely play a positive role in promoting the rational use of athletes' tactical abilities, thereby improving their sports performance.

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