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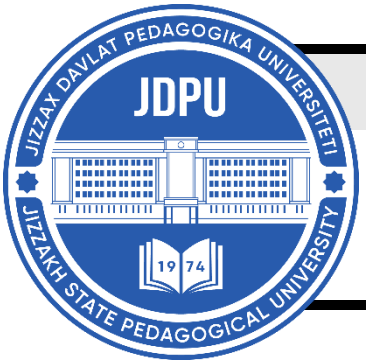

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TEACHING TAEKWONDO SPORT TO YOUNGER CHELDREN

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ABOUT ARTICLE

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Abstract: We know that traning young children in every sport caous problems and difficulties.Teaching them a sport requires a lot of time to keep them in order. Terefore,it is recommended to use following methodes when working with them.Depending on the height,weigiht and ebility oh the child, flexibility ,the length of the leg end arm.With this indicator,it is possible to determine how quickly the cheldern`s ability to achieve results will change, and it will depend on the ability.It plays a very important role in the sport of taekwondo.Taekwondo is especially suitable for cheldren with long arms and legs.Flexibility is also very important because flexibility is the main weopen in this sport.And it is important to select these children from the beginning by using the result with the childthe way to reach becomes easier.

INTRODUCTION

Ton approach is required when teaching children martial arts. A coach should look to join in with more sets and reps of techniques with the children, rather than just showing the odd technique. Children are often more visual learners and will be keen to keep up with their role models, for the child it will often turn into a bit of fun healthy competition between them and the coach.

Tip 2 – Games and Drills – Children have a shorter attention span compared to adults. A coach should look to break the session up into smaller sections, by including numerous drills and martial arts related games. Children love games, so if a coach can take a particular

technique and make a game out of it, maybe with some kind of points or scoring system you will often find the children have Tip 3 – Don't Punish Children with Exercise – Disciplining a child with exercise with only assist in their dislike for exercise. If you are going to discipline a child for disrupting the class a better option would be a time out. No doubt the child in question will soon be eager to join in again when they see their classmates. Tip 4 – Motivation– Martial arts coaches are renowned for constantly picking up on what the child needs to improve on, however children love praise and to hear how well they are doing. As a coach you should offer children motivation as well as constructive criticism. If you try and give a fair amount of both you will soon find you have an engaged learne having fun.ot of fun partaking in this.

Tip 5 – Impower advanced learners – In a martial art setting use higher graded children to demonstrate techniques in front of the lower grades, this will give the higher grades a sense of achievement and hopefully create a bond between fellow students.

Conclusion, any last thoughts about this topic? Keep the classes fun, engaging and create a bond between child and coach. Children get bored easily, so as a coach you need to constantly adapt your methods to keep the children entertained.

Attending class, completing homework, studying more efficiently, and learning important life skills are just some of the benefits that Taekwondo provides children in the realm of academics.

School is a pivotal part of children's lives and is crucial to their development and future. Taekwondo helps children thrive academically and improves their cognitive and academic performance. Through Taekwondo, children stay physically active, which keeps the brain healthy by boosting cognitive performance, facilitating the growth of new neurons, and improving concentration and memory.

Students from Jadir Taekwondo Association (AJTKD), a charity supporting youth from underprivileged areas in Brazil, learn and memorize various moves, techniques, skills, and philosophies to train. These skills and experiences can improve memory to help children learn and remember their school content.

However, succeeding in school does not only mean thriving academically. Taekwondo is a sport that helps young individuals strengthen and reinforce positive lifestyle choices, offering new pathways to learn skills that they carry on into school, life, and work. Through Taekwondo, children develop social and leadership skills.

AJTKD helps provide opportunities for children where they learn together through group activities and form bonds with one another. AJTKD's students learn how to set goals together, work towards their goals, and achieve them through teamwork. Similarly, these

important life skills are applied in school where children socialize with others and work in groups. Additionally, Taekwondo can help with conflict resolution where children settle disputes with respect and peace rather than violence and aggression. Peers may encourage their friends as they participate in drug use, and saying no to drugs isn't always easy. At some point in their lives, children will be exposed to drugs and their temptations – this is particularly an issue for youth in socially vulnerable situations, who are more susceptible to drug use. The foundation of Taekwondo is grounded in two elements – discipline and respect. These two pillars are the foundations on which students reach a new level of Taekwondo graduation and achieve a new belt colour. Specifically, dedication and movement repetition is required to improve martial art movements. Through these activities, children develop self-discipline and self-restraint, traits and values that they instil in their own lives. Consequently, youth learn how to resist the urges to give in to peer pressure, and get involved in substance use and violence. For 20 years, AJTKD has been using Taekwondo to support children and young people at social risk for drugs. Through AJTKD's primary drug prevention work in the Fight Against Drugs Program that began in 2002 as well as their events on the International Day to Combat Drugs, the association has been educating youth about the dangers of drugs. Keeping our distance from others, covering our faces with masks, and not being able to do regular things in our daily lives that we were so accustomed to has become our new reality. The COVID-19 pandemic has had catastrophic impacts on the mental health and well-being of young people all over the world. Through Taekwondo, AJTKD has been helping youth improve their physical and mental health, giving them opportunities and abilities to improve their lives, especially during these difficult times. Taekwondo helps kids become more physically active and helps the body in various ways, such as improving flexibility, cardio, and improving blood circulation. Additionally, physical activity releases dopamine, a hormone that enhances positive emotions, which can help the mental health of kids. Particularly, through the COVID-19 pandemic, Taekwondo can be an outlet for stress for kids, alleviating the pressure they may be feeling. In sports as in life, there is a gender divide between men and women, where women are often stereotyped as weaker and less competent. However, girls in self-defence and martial arts programs such as Taekwondo continue to disprove and debunk these harmful perceptions of gender norms. Taekwondo breaks down barriers, empowers girls to become the leaders of their own lives and spread their impact to their communities. At AJTKD, gender equality and women's empowerment are at the forefront of many programs. AJTKD empowers young girls from underprivileged communities by providing them with knowledge and skills as well as opportunities for self-development. Taekwondo and self-defence classes become a safe

and inclusive space that is always available to young girls. AJTKD has been leading their “Fight for Women Project” where they provided young girls from underprivileged communities opportunities to engage in physical activity and self-defence classes to live healthier and safer lives. From the skills, knowledge, resources, and lessons learnt from Taekwondo and AJTKD, young girls become empowered and are inspired to transform this world into a place where true equality exists.

MATRERIALS AND METHODS**.**

The following criteria were used to select the articles to be included in the review: (1) original scientific articles; (2) all studies that dealt with martial arts; (3) articles written in English; (4) articles where the participants in the sample were children of preschool and school age (between 4 and 18 years of age).

2.2. Exclusion Criteria

The following criteria were used to select the articles to be excluded from the research: (1) review studies; (2) studies in which the subjects were children younger than 4 years of age and older than 18 years of age; (3) articles with research in which the experimental groups of children were not subjected to martial arts training programs; (4) articles in which the results or investigated parameters were not adequately presented for further analysis.

Search Strategy and Study Selection

Electronic database searches were performed using Google Scholar, Pub Med, and Web of Science. The search terms covered the areas of the influence of martial arts training on physical fitness and martial arts programs for preschool and school children using a combination of the following keywords: “martial arts”, “physical fitness”, “children”, “motor skills”, “cardiorespiratory fitness”. The results of a search of articles written in English and published between January 2006 and April 2021 were analyzed. Articles from the database list that were clearly not relevant were removed before assessing all other titles and abstracts using our predetermined inclusion and exclusion criteria. Inter-reviewer disagreements were resolved by consensus opinion or arbitration by a third reviewer. Reference lists of the selected manuscripts were also examined for any other potentially eligible articles.

.4. Assessment of Bias

Two independent reviewers assessed the risk of bias. The agreement between the two reviewers was evaluated using k full-text screening statistics and an assessment of relevance and the risk of bias. When there was disagreement over the risk of bias, the third reviewer checked the data and formed the final decision. The agreement rate for k among reviewers was k = 0.95. Inter-observational reliability and agreement were calculated using

the interclass correlation coefficient and Cohen's kappa test with values interpreted as follows: 0—no agreement; 0.01–0.20—slight agreement; 0.21–0.40—good agreement; 0.41–0.60—moderate agreement; 0.61–0.80—significant agreement; and 0.81–1.0—almost perfect agreement.

We collected 159 studies through a database search in Google Scholar, PubMed, and Web of Science. Three more studies were found from other sources; thus, the total number of collected studies was 162. Next, we excluded 63 duplicate studies (duplicate search or publication of the thesis in a journal). After reviewing the research titles and abstracts of the 99 remaining selected studies, an additional 26 studies were excluded that included children with diseases and children older than 18 years of age. Another 10 studies were excluded because they included martial arts that were not classified as budo martial arts. In addition, seven other studies were excluded because full texts were not available. Therefore, we selected 67 studies after excluding 32 studies. We reviewed the full text of the 67 selected studies and classified them according to the PICOS criteria. After that, 24 studies with no control groups, seven studies with unclear statistics, and 18 studies with uncertain training durations were excluded. Therefore, we finally included 16 studies (8 studies included only male participants, 1 study included only female participants, and 7 studies included both sexes) The data selection method is presented within the following flow diagra. The study included 16 original research articles that tested the effects of martial arts programs in children aged between 4 and 13 years of age. The articles are presented in tabular form by year of publication from 2006 to 2021, respectively. There were no control groups in four articles. The youngest participant was 4.5 years old and the oldest participant was 13 years. The total number of participants was 1615. The sample sizes of the studies were analyzed and ranged from 10 to 721 children. In seven studies, both genders were included. In eight studies, the participants were only male children, while one study included only girls.The longest experimental treatment lasted two years and the shortest only lasted a week. Frequently, the duration of the sessions in all martial arts programs was 60 min .Eight studies included experimental treatments of karate,four studies included judo treatments,in two articles taekwondo treatments were employed and two studies included experimental aikido treatments.Legend: M—male; F—female; E—experimental group; C—control group; wk—week; m—month; ND—not defined; PE—physical education; B—boys; G—girls; B/N—boys of normal weight; G/N—girls of normal weight; B/O—overweight boys; G/O—overweight girls; Ob—obese; NOb—non-obese; PH—physical; HW—healthy weight; OW

RESULT AND DISCUSSION

This study examined the effects of various martial arts programs on children's physical fitness. Based on the main findings, karate, judo, taekwondo, and aikido programs showed positive effects on physical fitness components. According to the results, the effects of these programs showed significant differences between the initial and final measurements of most of the examined experimental programs, but also when compared to the control groups. Cardiorespiratory fitness, speed, agility, strength, flexibility, coordination, and balance were used to assess physical fitness, while other parameters, such as body composition, mental conative, and cognitive capacities, were excluded. Cardiorespiratory fitness as a parameter of physical fitness was represented in only three studies. After a 24-month karate program, Kyrpenko at all found a large statistically significant improvement the cardiorespiratory endurance parameter in the EG of karatekas, while in inactive children in the CG, this was not the case. The 1000 m test is a middle-distance running test that gives participants the opportunity to increase their cardiorespiratory fitness at the expense of muscle strength and to improve their running technique, unlike running for 20 m, 30 m, and 100 m, where the type of muscle fibers, despite the training, plays a major role. Since the treatment in the EG lasted 24 months, it was no wonder that there was a significant improvement in the final measurement, given that the subjects had enough time to increase their strength and improve their running technique. In addition, Brasil et al. assessed the cardiorespiratory ability of obese and non-obese children after participating in a 12-week judo program. The authors concluded that there was a decrease in the VO2peak parameter in the obese children and statistically significant differences in HR at the VO2peak between non-obese and obese children. Given that obese children have an excess of inefficient adipose tissue that leads to accelerated fatigue, it was no wonder that HRs at the VO2peaks were higher in the obese children. Pop et al. Examined cardiorespiratory endurance, where the EG, in addition to regular classes of physical education, was subjected to an eight-month aikido program, while the control group attended only physical education classes. Testing was performed using the 20 m beep test, and, on that occasion, it was concluded that there were no statistically significant differences between the EG and the CG in the final measurements. The shuttle run agility test has been the main tool to test this motor ability in many studies in which agility as a parameter of physical fitness was presented specifically, using the nine-month judo program, Sekulic et al. found statistically significant differences in the final measurements of the 4 × 1.98 m shuttle run agility test in an experimental group of subjects composed of boys. This was in correlation with the findings of Krstulović et al. Who also found statistically significant differences using the same test as the judo program of the

same duration in female participants. In addition, using a six-month karate program, Boguszevski and Socha used the 4 × 5 shuttle run test to assess agility, concluding that progress had been made in the final measurements, but they remained statistically insignificant. This was not correlated with Ma and Qu who used the same 4 × 5 shuttle run test to identify the effects of a two-month karate program. They found a statistically significant difference in the final measurement of the EG that correlated with the results obtained by Top et al.And Kyrpenko et al.Who tested the agility of the 4 × 9 shuttle run test using a two-year karate program and found a statistically significant improvement.in the EG compared to the CG.

Padulo et al. Used frontal/side jumps in a quadratic agility assessment test to compare the effects of a one-week high- and low-intensity karate program. They found a statistically significant improvement in the EG. They also found a statistically significant difference between the EG and the CG in favor of the EG on the final measurement. Speed was one of the monitored parameters of physical fitness in five articles. Various running speed tests were used to measure speed as a parameter of physical fitness. Sekulic et al.Concluded that the change in speed in boys did not occur in the initial and final EG measurements. This correlated with the findings of Krstulovic at all

Who applied almost the same program for 9 months in female participants; however, this was not correlated with the findings of Demiral, whose research showed statistically significant differences between the EG and the CG in the 20 m sprint test. Perhaps the reason was that Demiral's study lasted 3 months longer than the previously mentioned studies, where the participants were subjected to experimental treatment for a longer period of time. A study conducted by Pop et al.Used 20 m sprint tests, while Alesi et al. Applied a transfer-running test to check the speed skill of participants and also found statistically significant differences between the EG and the CG in favor of the EG.

Flexibility was one of the parameters for assessing physical fitness in 10 articles. The most common flexibility assessment test used in as many as five articles was the "sit and reach" test. The results of this test showed statistically significant differences in flexibility between the EG and the CG in the final measurements in two articles by Krstulović et al, and Sekulic et al, in which 9-month judo programs were conducted. This was partially in line with the findings of Rutkowski et al.Who, by applying a 10-week karate program, found a statistically significant decrease in flexibility in normal-weight boys, while in normal-weight girls, there was a statistically significant difference. In addition, this did not correlate with the results of Pathare et al.And Ma and Qu in these studies no statistically significant improvement in flexibility was observed. In addition, the author Mrockowski used a nine-

month aikido program, where the hip flexibility test “samurai walk” was used to examine flexibility, and the presence of statistically significant differences between the EG and the CG were evident. Boguszevski and Sochs used the “finger floor” test to assess flexibility and found that the participants in the EG group (girls) significantly improved their performances compared to the control group. This correlated with Padulo et al.Who obtained similar results, checking the flexibility of the joints after a one-week program of high-intensity karate and low-intensity karate, however, this did not correlate with the findings of Kirpenko et al.Who concluded that 12 months of karate did not cause an improvement in flexibility.

4.5. Coordination

Coordination as a parameter of physical fitness was represented in four articles. The results of the 10 m polygon test conducted by Krstulović et al,and Sekulić et al.Did not show statistically significant differences in coordination between the EG and the CG in the final measurements of both studies. In his research, Demiral applied the coordination test (balance skill) and rapidity test in the EG and the CG of judokas and found statistically significant improvements, in both sexes of the EG. In addition, statistically significant differences in coordination were found in the EG of girls compared to the CG. However, these results were partially in line with the results of Top et all which indicated a statistically significant improvement in the EG, but no statistically significant differences between the EG and the CG in the final measurements were observed.

4.6. Balance

Balance was tested in the majority of studies using the “flamingo” balance test. In addition, other articles used the following tests: the Y balance test, the single-leg balance test with closed and open eyes, and a test that involved balancing on a force plate devic. Demiral found a statistically significant improvement in balance in the EG of boys and girls following a 12-month judo program. These findings were not correlated with the results of Pop et all who found no significant differences between the EG and the CG after an eight-month aikido program in addition to regular physical education classes. In addition, according to Demiral’s findings, a partial correlation was found with the study of Pavlova at all the EG achieved a statistically significant improvement in balance, which was the same as the CG, whose participants only attended regular physical education classes. Speaking of the Y balance test, Pinto-Escalona at all found a slight improvement in the EG group that was not statistically significant. In the research performed by Rutkowski et all, in which all the subjects underwent experimental treatment, only boys of normal weight achieved a statistically significant improvement in balance. This was not consistent with the findings of

Pathare et all, who discovered that overweight children had greater improvements in balance than healthy-weight children.

Important considerations were identified from this review to support the development of future research in this research field, such as the following:

- One needs to be cautious when adopting an intervention program model that has already been performed and has relevant methodological limitations.
- There is a lack of studies dealing with the impact of martial arts on children's cardiorespiratory and motor-skill parameters. In future studies, the emphasis should be on non-budo martial arts such as capoeira, muay Thai, Brazilian jiu-jitsu, wrestling, and other combat sports.
- The following studies might have investigate preschool children because, in most countries, children start practicing martial arts from an early age.
- Various martial arts programs for school and preschool children need to be analyzed and a larger number of physical fitness parameters with an emphasis on body composition, as well as the heterochronism of their development, need to be monitored.

This is one of the first review papers that combined several different martial arts and analyzed their effect on children, including a comprehensive search of studies and the assessment of their methodological qualities. The main limitation of this study is the fact that, in addition to judo, taekwondo, and aikido, the majority of the research papers were based on karate. Therefore, the karate program was the most effective in terms of positive impact on physical fitness. Additionally, a significantly larger number of male children were included in the monitored studies. Given that there are large differences in motor skills and cardiorespiratory fitness between boys and girls, the gender should be defined separately.

CONCLUSION

This review confirmed that martial arts programs lead to improved physical fitness in preschool and school children. Based on the results of the analysis, it could be concluded that cardiorespiratory fitness, speed, agility, strength, flexibility, coordination, and balance were the most important parameters of physical fitness, which demonstrated considerable improvement in the final measurements of EG participants. The obtained information could be very useful in promoting and advertising the positive aspects of these budo martial arts, which can directly affect children's and parents' choices when it comes to choosing the sport that they will practice. This work was supported by the Serbian Ministry of Education, Science, and Technological Development and the Provincial Secretariat for Higher Education and Scientific Research.

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