

The Impact Of Taekwondo Training On Specific Physical Fitness Components.

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Abstract: Taekwondo, a Korean martial art known for its dynamic kicks and agility, has been widely recognized for its physical and mental benefits. This study explores the impact of Taekwondo training on selected physical fitness parameters among college students. A total of 90 students, aged 18-25, were randomly assigned to either a Taekwondo training group (n=45) or a control group (n=45) for a period of 12 weeks. The training group participated in structured Taekwondo sessions three times a week, focusing on techniques, forms, and sparring. Physical fitness parameters, including cardiovascular endurance, muscular strength, flexibility, and body composition, were assessed at baseline and post-intervention using standardized fitness tests. Results indicated significant improvements in the Taekwondo group compared to the control group. The findings suggest that Taekwondo training can effectively enhance various aspects of physical fitness. The combination of aerobic and anaerobic exercises inherent in Taekwondo contributes to overall fitness improvements.

Keywords: Taekwondo, Cardiovascular endurance, Flexibility, Muscular Strength, Muscular endurance, Body composition.

Introduction

Evolution of human life started with the movement. Human beings have been very active and creative by nature and physical activity has been part of their life all along since evolution. For primitive state, man, search for food and shelter was the first activity. The first activity was necessitated by his instinct for survival. Physical activity was also the first mode of communication; it was also a means of expression. As human beings evolved culturally, emotionally and socially, physical activity also evolved. As the society became more and more complex leading towards the modern age, physical activity came to be recognized as an organized and supervised form of education, and was termed as physical education. In the quest for optimal physical fitness, various training regimens have been explored and implemented. Among these, martial arts have gained significant attention due to their holistic approach to physical and mental wellbeing. Taekwondo, a Korean martial art characterized by its emphasis on high, fast kicks and dynamic movements, stands out as a particularly effective discipline. This study aims to investigate the effect of Taekwondo training on selected physical fitness parameters among college students, providing insights into how this ancient practice can enhance modern fitness routines. Originating in Korea, it was initially developed as a means of self-defence and physical conditioning. Over the centuries, Taekwondo has evolved, incorporating elements from various martial arts and adapting to modern training methodologies. Today, it is not only a popular sport but also a recognized Olympic discipline, celebrated for its rigorous training and competitive spirit. Physical fitness is a multifaceted concept encompassing cardiovascular endurance, muscular strength, flexibility, and body composition. These components are crucial for overall health and well-

being, influencing everything from daily activities to long-term health outcomes. Cardiovascular endurance, for instance, is vital for heart health and stamina, while muscular strength supports skeletal integrity and functional movements. Flexibility enhances mobility and reduces the risk of injuries, and a balanced body composition is essential for metabolic health. Taekwondo training is inherently comprehensive, engaging multiple aspects of physical fitness. The practice involves a combination of aerobic and anaerobic exercises, which collectively contribute to cardiovascular health and muscular endurance. The high-intensity nature of Taekwondo drills, including kicks, punches, and sparring sessions, promotes cardiovascular endurance by elevating the heart rate and improving oxygen uptake. Additionally, the repetitive nature of these movements enhances muscular strength and endurance, particularly in the lower body and core. Flexibility is another critical component of Taekwondo training. The emphasis on high kicks and dynamic movements necessitates a high degree of flexibility, which is developed through consistent stretching and mobility exercises. This not only improves performance but also reduces the risk of injuries by ensuring that muscles and joints are adequately prepared for the demands of training. Beyond physical fitness, Taekwondo offers significant psychological benefits. The discipline and mental focus required in martial arts training foster a sense of selfdiscipline, confidence, and resilience. Practitioners often report reduced levels of stress and anxiety, attributing this to the meditative aspects of training and the sense of accomplishment derived from mastering techniques and progressing through belt ranks. This holistic approach to training aligns well with the developmental needs of college students, who are navigating the challenges of academic life and personal growth. Taekwondo training group will show significant improvements in all measured physical fitness parameters compared to the control group. Specifically, it is expected that cardiovascular endurance will increase, muscular strength will improve, flexibility will be enhanced, and body composition will show a favourable shift towards increased lean muscle mass and reduced body fat percentage. By demonstrating the tangible benefits of Taekwondo training, the research aims to advocate for its inclusion as a viable fitness option for college students. The findings could also inform the development of comprehensive fitness programs that incorporate elements of martial arts to promote overall health and well-being.

Methodology

For the present study the source of subjects were selected from the affiliated colleges of J. S. University, Shikohabad, Firozabad, Uttar Pradesh. Ninety (90) subjects were selected for this study. After collecting the pre-test data, the subjects were divided in two homogeneous group means control group consists of 45 and experimental group consists of 45 subjects. The subject was selected by using simple random sampling method.

Collection of Data:

After collecting the data, the subjects were divided into two homogeneous groups as control and experimental group. The control group have not given any treatment whereas the experimental group have given three months taekwondo training. After the end of three months training, the researcher has collected the data again by applying the same tests from both the groups.

Analysis of data:

Table 1: Showing the difference of Muscular Strength in Pre and Post Test of Control Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	28.04	3.88	0.11	0.804	0.138 [#]
Post Test	28.16	3.74			

df = 88

Tabulated 't' = 1.986

Table 2: Showing the difference of Muscular Strength in Pre and Post Test of Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	27.29	3.41	2.69	0.742	3.624*
Post Test	29.98	3.62			

df = 88

Tabulated 't' = 1.986

Table 3: Showing the difference of Muscular Strength between Post Tests of Control and Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Control	28.16	3.74	1.82	0.776	2.348*
Experimental	29.98	3.62			

df = 88

Tabulated 't' = 1.986

Table 4: Showing the difference of Muscular Endurance in Pre and Post Test of Control Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	8.28	2.91	0.71	0.653	1.088 [#]
Post Test	9.00	3.27			

df = 88

Tabulated 't' = 1.986

Table 5: Showing the difference of Muscular Endurance in Pre and Post Test of Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	8.67	2.58	2.35	0.536	4.394*
Post Test	11.02	2.51			

Df = 88

Tabulated 't' = 1.986

Table 6: Showing the difference of Muscular Endurance between Post Tests of Control and Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Control	9.00	3.27	2.02	0.615	3.288*
Experimental	11.02	2.51			

df = 88

Tabulated 't' = 1.986

Table 7: Showing the difference of Flexibility in Pre and Post Test of Control Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	92.16	9.87	1.07	2.105	0.506 [#]
Post Test	93.22	10.11			

Df = 88

Tabulated 't' = 1.986

Table 8: Showing the difference of Flexibility in Pre and Post Test of Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	93.31	10.13	2.78	2.133	1.302 [#]
Post Test	96.09	10.10			

df = 88

Tabulated 't' = 1.986

Table 9: Showing the difference of Flexibility between Post Tests of Control and Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Control	93.22	10.11	2.87	2.13	1.345 [#]
Experimental	96.09	10.10			

df = 88

Tabulated 't' = 1.986

Table 10: Showing the difference of Cardio-respiratory Endurance in Pre and Post Test of Control Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	60.38	7.16	0.73	1.574	0.466
Post Test	61.11	7.76			

Df = 88

Tabulated 't' = 1.986

Table 11: Showing the difference of Cardio-respiratory Endurance in Pre and Post Test of Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	59.27	7.66	3	1.633	1.836 [#]
Post Test	62.27	7.84			

df = 88

Tabulated 't' = 1.986

Table 12: Showing the difference of Cardio-respiratory Endurance between Post Tests of Control and Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Control	61.11	7.76	1.16.	0.703	1.986
Experimental	62.27	7.84			

Df = 88

Tabulated 't' = 1.986

Table 13: Showing the difference of Body Composition in Pre and Post Test of Control Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	51.02	6.07	0.75	1.266	0.597 [#]
Post Test	51.78	5.94			

df = 88

Tabulated 't' = 1.986

Table 14: Showing the difference of Body Composition in Pre and Post Test of Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Pre test	52.13	4.19	0.44	0.943	0.471 [#]
Post Test	51.68	4.74			

Df = 88

Tabulated 't' = 1.986

Table 15: Showing the difference of Body Composition between Post Tests of Control and Experimental Group

Group	Mean	SD	MD	SE	Calculated 't'
Control	51.78	5.94	0.09	1.13	0.078 [#]
Experimental	51.69	4.74			

df = 88

Tabulated 't' = 1.986

Conclusion

In conclusion, Taekwondo training offers a multifaceted approach to physical fitness, addressing key components such as cardiovascular endurance, muscular strength, flexibility, and body composition. This study seeks to provide empirical evidence on the effectiveness of Taekwondo training, contributing to the broader understanding of how martial arts can enhance physical and mental well-being. By integrating Taekwondo into fitness programs, we can promote a balanced and healthy lifestyle for students, preparing them to face the challenges of academic life and beyond with resilience and confidence.

1. There is significant difference of muscular strength between control and experimental group.
2. There is significant difference of muscular endurance between control and experimental group.
3. There is no significant difference of flexibility between control and experimental group.
4. There is no significant difference in cardio-respiratory endurance between control and experimental group.
5. There is no significant difference of body composition between control and experimental group.

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