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A Comparative Study on Breath Holding Capacity of Taekwondo Players

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Abstract: The aim of the study was find out the effect of yogic practices on breath holding capacity of Taekwondo players the study was conducted on 180 male and female players of Madhya Pradesh who head played the state and national level competition. Subjects were divided into two groups one experiment group with hundred players and another was control group with eighty players. The experimental group where included girls and boys and equal ratio in which 25 senior girls & 25 junior girls, 25 senior boys & 25 Junior boys and in control group 20 senior girls & 20 junior girls, 20 senior boys and 20 junior boys ware included. Data collection was done before and after the intervention. The yogic intervention was implemented for one month every day one hour. Results shows that the Taekwondo players who participated in the selected yogic practices exhibited significantly greater breath holding capacity than those in the control group.

Keywords: - Yogic practices, yoga, Taekwondo, players, breathe holding capacity.

Introduction: -

Taekwondo is in Korean martial art and Olympic sport the word Taekwondo derive the Korean words "Tae" meaning feet or kicks, "Kwon" means fist or punch, end "Do" means path or realization. It indicates discipline focus on using the hands and feet for self-defense. Taekwondo is not only a self-defense technique but it also indicate apart to discipline of body mind and soul likewise Maharshi Patanjali says in Patanjali yog Sutra "अथ योगानुशासनम" it means now begin yogic discipline it means yoga is a discipline it is a discipline for body it is a discipline for mind it is a discipline for soul also. Yogic practices may have a significant influence on the breath-holding capacity of Taekwondo players. Regular participation in yogic practices, particularly pranayama, controlled breathing, and relaxation techniques, may enhance respiratory control and improve the functional efficiency of the respiratory system. Such practices may contribute to better regulation of inhalation, exhalation, and breath retention, thereby enabling athletes to sustain voluntary breath-holding for a longer duration. In Taekwondo, players improve respiratory efficiency and breath control may further support the ability to cope with the physiological demands of high-intensity physical activity. Therefore, the systematic incorporation of yogic practices into Taekwondo training may be considered a beneficial intervention for improving breath-holding capacity and related aspects of respiratory performance. Yogic practices may have a significant influence on the breath-holding capacity of Taekwondo players. Regular participation in yogic practices, particularly pranayama, controlled breathing, and relaxation techniques, may enhance respiratory control and improve the functional efficiency of the respiratory system. Such practices may contribute to better regulation of inhalation, exhalation, and breath retention, thereby enabling athletes to sustain voluntary breath-holding for a longer duration. Therefore, the systematic incorporation of yogic practices into Taekwondo training may be considered a beneficial intervention for improving breath-holding capacity and related aspects of respiratory performance. Breath-holding capacity is the ability of a person to hold their breath voluntarily for a certain period of time. It depends on the functioning of the respiratory system, breathing control, oxygen utilization, and the ability to tolerate the increase in carbon dioxide during breath holding. For Taekwondo players, good breath control may be useful because Taekwondo involves repeated high-intensity movements and requires quick changes between different activities. Better breath-holding capacity may help players control their breathing and maintain their physical performance during demanding activities. Factors such as lung capacity, respiratory muscle strength, breathing habits, and

regular physical training can influence breath-holding capacity. Therefore, measuring breath-holding capacity can provide useful improvement in the particular game.

Objective of the study:- To Analise the breath holding capacity of experimental group and control group of Taekwondo Players after getting selected yogic intervention for one month.

Hypothesis:-There is no significant difference in breath holding capacity between the experimental group and control group of Taekwondo players after selected yogic intervention.

Sample of the study:- The sample was one hundred eighty players from Madhya Pradesh.

Design of the Study :- Two group data design was obtained for the study.

Delimitation of the study :- The players were attending the taekwondo training and Yogic intervention which was based on physical aspect only of yoga. The players were only from Madhya Pradesh.

Intervention:- Included asana (Srvangasana, Halasana, Sarpasana, Dhanurasena, Veerbhadrasana) pranayama (Anulom-Vilom, Bhramri), dhyana, Gyanamudra and Trataka.

Tools:- Each participants breath holding capacity was measured with the help of stop watch and the duration of breath holding was recorded in seconds before the intervention and after the intervention.

Testing the Hypothesis & Results :- The hypothesis testing was done with the help of spss 20 and the appropriate statistical techniques were used to analyze the data. The analysis was done to the hypothesis that there is no significant difference in breath holding capacity between the experimental group and control group of Taekwondo players after selected yogic intervention.

Table 1.1 Group Statistics

Group Statistics for Post-test Breath Holding Capacity of Experimental and Control Groups of Taekwondo Players

	Group	N	Mean	Std. Deviation	Std. Error Mean
Breath Holding_Post	Experimental Group	100	40.670	5.7332	0.5733
	Control Group	80	35.838	5.4342	0.6076

Table 1.1 presents the descriptive statistics of the post-test breath holding capacity of the experimental and control groups of Taekwondo players. The table includes the number of participants (N), mean, standard deviation, and standard error of the mean for both groups.

The results reveal that the Experimental Group consisted of 100 Taekwondo players, whereas the Control Group comprised 80 Taekwondo players. The experimental group obtained a mean post-test breath holding capacity of 40.670 seconds, with a standard deviation of 5.7332 and a standard error of the mean of 0.5733. In contrast, the control group recorded a mean post-test breath holding capacity of 35.838 seconds, with a standard deviation of 5.4342 and a standard error of the mean of 0.6076.

A comparison of the mean values indicates that the post-test breath holding capacity of the experimental group was 4.8325 seconds higher than that of the control group. The relatively higher breath holding capacity observed in the experimental group suggests that the selected yogic practices contributed to improving respiratory endurance and pulmonary efficiency among the Taekwondo players. The statistical significance of this observed

difference between the two groups is determined through the Independent Samples *t*-test presented in the subsequent table.

Table 1.2 Independent Samples Test

Independent Samples t-test Showing the Difference in Post-test Breath Holding Capacity between the Experimental and Control Groups of Taekwondo Players.										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Breath Holding_Post	Equal variances assumed	.731	.394	5.750	178	.000	4.8325	.8404	3.1741	6.4909
	Equal variances not assumed			5.785	172.921	.000	4.8325	.8354	3.1837	6.4813

Levene's Test for Equality of Variances yielded an F-value of 0.731 with a significance value of 0.394, which is greater than the prescribed level of significance (0.05). This indicates that the assumption of homogeneity of variances was satisfied. Therefore, the results corresponding to the Equal Variances Assumed row were considered for interpretation.

The independent samples *t*-test revealed a calculated *t*-value of 5.750 with 178 degrees of freedom, and the obtained significance value ($p = 0.000$) was less than 0.05, indicating a statistically significant difference between the post-test breath holding capacity of the two groups.

The mean difference between the experimental and control groups was 4.8325, indicating that the experimental group had a significantly higher post-test breath holding capacity than the control group. The 95% confidence interval of the mean difference ranged from 3.1741 seconds to 6.4909 seconds, which does not include zero, further confirming the statistical significance of the observed difference.

Conclusion The findings indicate that the Taekwondo players who participated in the selected yogic practices exhibited significantly greater breath holding capacity than those in the control group. Hence, the null hypothesis, "There is no significant difference in breath holding capacity between the experimental group and control group of Taekwondo players after selected yogic practices," is rejected. This indicates that yoga practices enhances the lung capacity of Taekwondo players, which prove beneficial improvements. Yoga practices may prove beneficial enhancement in lung capacity not only to the Taekwondo players but also for athletes participating in all types of martial arts.