

CHAPTER IV
RESULT AND DISCUSSIONS

CHAPTER - IV

RESULT AND DISCUSSION

4.1 OVERVIEW

This chapter included the significance test, significance level, results discussion, and hypothesis discussion. The investigation's goal was to find out the combined effect of adapted strength training and yogic practices with props on selected flexibility, strength parameters, and psychological variables among Paralympic sitting volleyball players.

Sitting volleyball players were chosen at random, with an age range of 20 to 40 years, from Chennai, Coimbatore, Kanyakumari District, Tamil Nadu, India. They split up into three groups of equal size. There were twenty subjects per group. The three groups are namely, Experimental Group-I Adapted Strength training, Experimental Group-II Yogic Practice with Props, and Experimental Group-III Adapted Strength Training and yogic practices with props. A pre test was administered to all sixty participants, focusing on certain Flexibility Parameters, such as - Hip and Back Flexion, Shoulder Flexibility. Strength Parameters - Abdominal Strength, Shoulder Strength, Grip Strength. Psychological variables, such as Achievement Motivation, Maintaining Confidence, Concentration. Anthropometric Variables namely Hand Length, Sitting Back Height, Arm Span.

Group I of experimental was exposed to adapted strength training. Experimental Group II was exposed to yogic practice with props training. Experimental group III was exposed to adapted strength training and yogic practice with props training. The experimental training period lasted for twelve weeks. Following the experimental intervention, all the chosen Flexibility Parameters, Strength Parameters, psychological characteristics and Anthropometric Variables

were given to sixty subjects. The subjects' post-test results are formed from the final exam results. Scheffé's post hoc tests were used. If the "F" ratio for the adjusted test was shown to be significant. ANCOVA was used to identify significant differences. Hypotheses were tested using a set 0.05 significance level in each case.

4.2 TEST OF SIGNIFICANCE

This is an important step in reaching the conclusion since it involves looking at the statistical hypotheses and deciding whether to accept or reject them. The null hypothesis depends on findings according to the investigator's predetermined level of significance.

Since the researcher examined whether or if there were significant variations in scores between three groups or within several groups, the test was commonly referred to as a test of significance. In this investigation, if the F-value was higher than the table value, the null hypotheses regarding the existence of a significant difference between the means of the groups compared were rejected; conversely, if the values obtained fell below the required threshold, the null hypotheses regarding In the absence a significant difference between the means of groups under investigation were accepted.

4.3 LEVEL OF SIGNIFICANCE

The experimental groups' pre- and post-test results were examined to determine how much they had improved. Adapted strength training, Yogic practice with props training, and Combined Adapted strength training and Yogic practice with props training, intervention on the Flexibility Parameters, Strength Parameters, psychological variables and anthropometric variables among Paralympic sitting Volleyball Players. An analysis of covariance (ANCOVA) utilized to determine if there was a significant difference, if any, between groups on the individual criteria

variables. A fixed 0.05 level of confidence was used in each example to evaluate the significance. This was deemed suitable.

4.4 COMPUTATION OF COVARIANCE ANALYSIS AND POST-HOC TEST

4.4.1 Flexibility Parameters

4.4.1.1 Results on Hip and Back Flexion

The statistical comparison of the experimental group I, experimental group II, and experimental group III, starting and end means on Hip and Back Flexion in table - XIV.

TABLE-XIV
COMPUTATION OF ANALYSIS OF COVARIANCE
HIP AND BACK FLEXION
(Scores in Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	33.05	32.15	32.25	B	9.73	2	4.87	0.14
				W	1927.25	57	33.81	
Post Test	35.55	37.85	41.20	B	322.90	2	161.45	4.16*
				W	2214.70	57	38.85	
Adjusted Post Test	35.05	38.14	41.41	B	9.73	2	201.34	15.72*
				W	1927.25	56	12.81	
Mean Gain	2.50	5.70	8.95					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

For hip and back flexion, the pre-test results for experimental groups I, II, and III were 33.05, 32.15, and 32.25, correspondingly. With regard to hip and back flexion, the experimental groups' post-test findings I, II, and III were, respectively, 35.55, 37.87, and 41.20.

In this hip and back flexion, the order-adjusted the mean outcome for groups I of the experiment,II, and III were 35.05, 38.14, and 41.41, respectively.

The pre-test score obtained F value of 0.14 was less than 3.15 table value that was required for it to be considered significant at 0.05 level. The results proved that there was no discernible difference between the three experimental groups, demonstrating that the procedure of randomly allocating people to groups was executed effectively.

The analysis of the post-test scores showed that there were substantial variations between three experimental groups,the result and F value of 4.16 was more than the necessary table value of 3.15, indicating that the subjects' post-test means different from one another in a meaningful way.

A adjusted mean score was calculated and statistical treatment applied, taking consideration of the groups' pre- and post-test results. Because of the experimental training on hip and back flexion, the acquired F value of 15.72 was higher than the mean. Results were subjected to post-hoc analysis.analysis using Scheffe's post hoc analysis given the significance differences were noted. The outcomes were shown in Table XV.

TABLE –XV
SCHEFFE’S POST HOC TEST ON HIP AND BACK FLEXION
(Scores in Centimeters)

ASTG	YPPTG	CTG	MD	CD
35.05	38.14	-	3.09	2.35
35.05	-	41.41	6.36	
-	38.14	41.41	3.26	

Significant

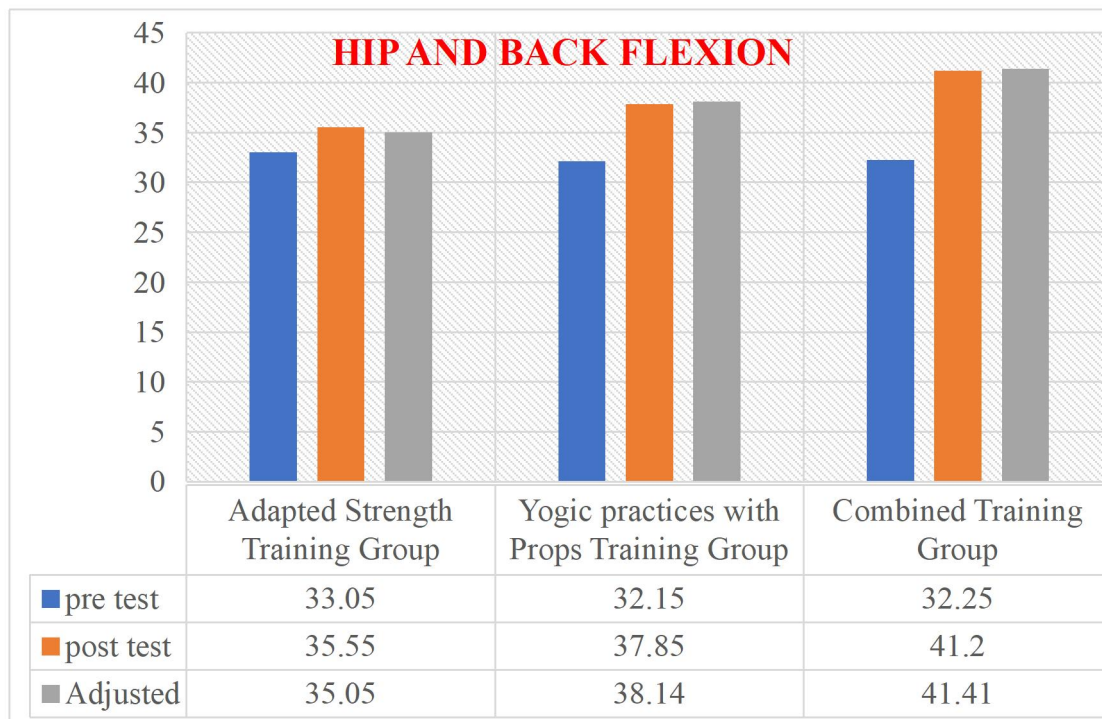
Table-XV' multiple mean comparison showed that there were significant differences between the corrected means of adapted strength training group (ASTG), yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG).

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and

combined adapted strength training and Yogic practices with props group (ASTYPPG). The necessary confidence interval of 2.35 was exceeded by the mean difference. When the means of the three Comparing groups, it was discovered that experimental group-III (which combined adapted strength training and yoga practices with props) significantly improved on hip and back flexion more than groups I and II of experiment (adapted strength training and yoga practices with props, respectively).

In Figure 2, the adjusted the mean for hip and back flexion were displayed as a bar diagram to help with understanding of the study's findings.

FIGURE-2
BAR DIAGRAM ON PRE, POST ORDERED ADJUSTED MEANS OF
HIP AND BACK FLEXION
(Scores in Centimeters)



4.4.1.1.1 A DISCUSSION ON THE FINDINGS OF HIP AND BACK FLEXION

The findings displayed shown in Table XIV indicated that the adjusted the means on hip and back flexion among the adapted strength training group (ASTG) was 35.05, yogic practices with props group (YPPG) was 38.14, and adapted strength training and yogic practices with props group was 41.41

When ANCOVA was used to statistically analyze the participants' pre-, post-, as well as adjusted mean scores, the F values were 0.14, 4.16, and 15.72, significant with a 0.05 level of confidence Given that they were greater than the required table value of 3.15, and the pre-test F values were not significant within 0.05 level of confidence they were lesser than the required table the value of 3.15.

Scheffe's confidence test, used in the post hoc analysis indicated that twelve weeks training of adapted strength training, yogic practices with props training and

combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group. Clearly demonstrating the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the hip and back flexion among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **Wong (2020)**, who showed increases in muscular endurance and flexibility as a result of sitting light volleyball intervention.

This study focuses on Paralympic sitting volleyball players. The flexibility parameter would have increased greatly as a result of tailored strength training and prop-based yoga practices. The individual performed much better on the flexibility parameter, hip and back flexion.

4.4.1.2 RESULTS ON SHOULDER FLEXIBILITY

The statistical comparison of experimental group I am the experimental group II, and experimental group III beginning and final averages on shoulder flexibility is shown in table XVI.

TABLE-XVI
COMPUTATION OF ANALYSIS OF COVARIANCE ON
SHOULDER FLEXIBILITY
(scores Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	`F` Ratio
	ASTG	YPPTG	CTG					
Pre Test	12.31	12.76	12.91	B	3.87	2	1.94	0.27
				W	404.26	57	7.09	
Post Test	8.71	7.45	5.05	B	138.00	2	69.00	8.72*
				W	450.82	57	7.91	
Adjusted Post Test	9.02	7.36	4.82	B	3.87	2	88.64	42.24*
				W	404.26	56	2.10	
Mean Gain	3.60	5.31	7.86					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

That shoulder flexibility, the pre-test results for experimental groups I, II, and III were, respectively, 12.31, 12.76, and 12.91. In terms of shoulder flexibility, the post-test results for experimental groups I, II, and III were, respectively, 8.71, 7.45, and 5.05.

In respect to shoulder flexibility, groups I, II, and III in the experiment had order-adjusted mean results of 9.02, 7.36, and 4.82, respectively.

The pre-test score is derived from 3.15 table value required for the F value of 0.27 was lesser than it to be considered significant at the 0.05 level. This outcome showed that there was no discernible difference between the three experimental groups, demonstrating that the procedure of randomly allocating people to groups was executed flawlessly.

The post-test scores analysis indicated that there were substantial differences within the three experimental groups; the resultant F value of 8.72 was higher than the necessary table value of 3.15, indicating that the subjects' post-test means were different from one another in a meaningful way.

An adjusted mean score was calculated and statistical treatment was applied, taking consideration of the groups' pre- and post-test results. Because of the experimental lesson on shoulder flexibility, I acquired the F-value of 42.24 was higher than the average. The outcomes underwent post hoc analysis using Scheffe's post hoc analysis, the significance differences were noted. The findings were displayed in Table XVII.

TABLE –XVII
SCHEFF'S POST HOC TEST ON SHOULDER FLEXIBILITY
(scores in centimeters)

ASTG	YPPTG	CTG	MD	CD
9.24	7.36	-	1.89	0.67
9.24	-	6.51	2.73	
-	7.36	6.51	0.84	

Significant

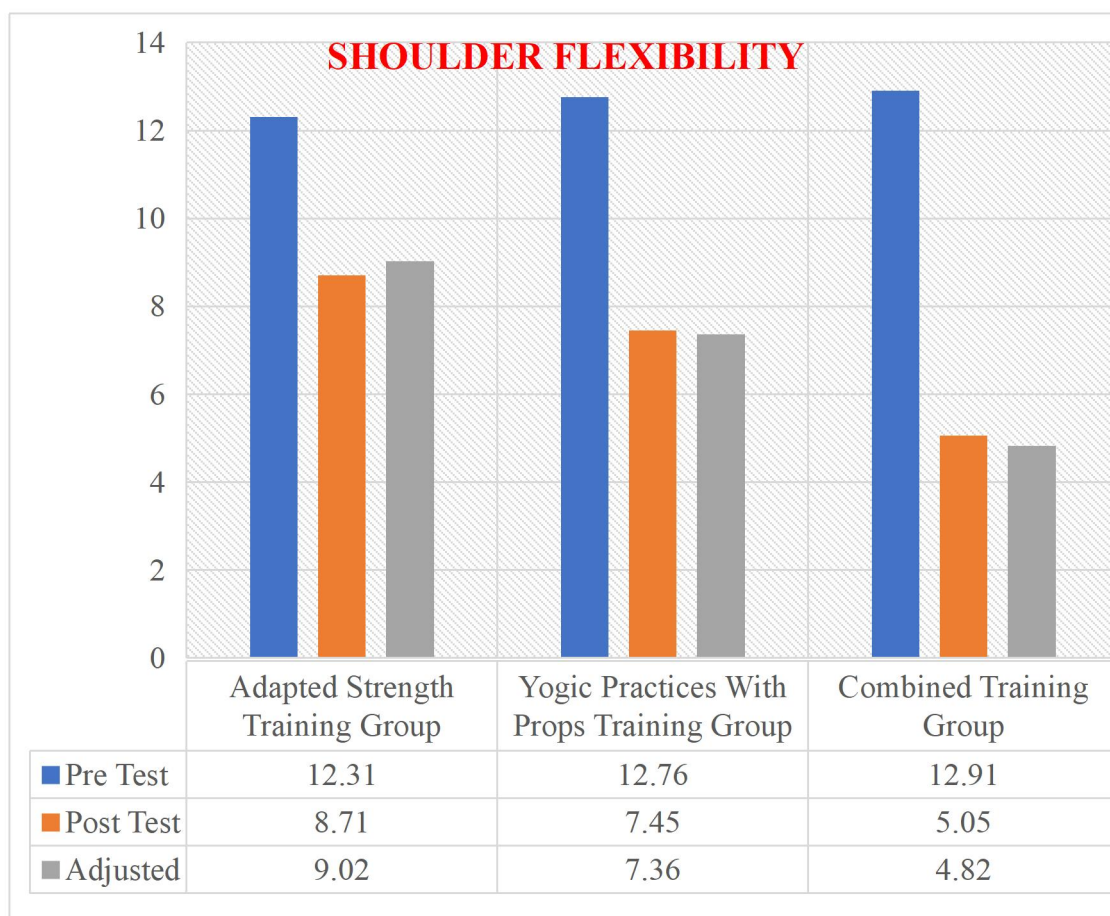
Table-XVII multiple mean Comparative analysis showed that there were significant variations between the corrected means of adapted strength training group (ASTG), yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG)

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props

group (YPPG) and combined adapted strength training and yogic practices with props group (ASTYPPG) There was a mean difference that exceeded the necessary confidence interval of 0.67. When comparing the three groups' means, experimental group-III (combined adapted strength training and yogic practices with props group) showed a more notable improvement in shoulder flexibility than the first and second experimental groups (yogic practices with props and adapted strength training, respectively).

In Figure 3, the adjusted averages for hip and back flexion were displayed as a bar diagram to help with understanding of the study's findings.

FIGURE 3
BAR DIAGRAM ON PRE POST AND ORDERED ADJUSTED MEANS OF
SHOULDER FLEXIBILITY
(scores in centimeters)



4.4.1.2.1 DISCUSSION ON THE FINDING OF SHOULDER FLEXIBILITY

The findings displayed in Table XVI demonstrated that the number adjusted the means on shoulder flexibility among the adapted strength training group (ASTG) was 9.02, yogic practices with props group (YPPG) was 7.36, and adapted strength training and yogic practices with props group was 4.82

When ANCOVA was used to statistically analyze the participants' pre-, post-, and adjusted mean scores, the F values were 0.27, 8.72, and 42.24, in response. The findings showed the adjusted means and post-test scores' obtained F values were significant at 0.05 level of confidence because they exceeded the necessary table value of 3.15, while the pre test scores' obtained F values were not significant at 0.05 level of confidence because they fell below that value.

Scheffe's confidence test, used in the post hoc analysis, proved that twelve weeks training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group. Clearly demonstrating the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the shoulder flexibility among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **Wong (2020)**, who showed increases in muscular endurance and flexibility as a result of sitting light volleyball intervention.

This study focuses on Paralympic sitting volleyball players. The flexibility parameter would have increased greatly as a result of tailored strength training and

prop-based yoga practices. The individual performed much better on the flexibility parameter, hip and back flexion, and shoulder flexibility.

4.5 COMPUTATION OF COVARIANCE ANALYSIS AND POST-HOC TEST

4.5.1 Strength Parameters

4.5.1.1 Results on Abdominal Strength

The statistical comparison of the experimental team I belong to the experimental group II, and experimental group III starting and end means on abdominal strength in table -XVIII.

TABLE-XVIII
COMPUTATION OF ANALYSIS OF COVARIANCE ON
ABDOMINAL STRENGTH
(Scores in number of count)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	7.50	7.60	7.45	B	0.23	2	0.12	0.04
				W	178.75	57	3.14	
Post Test	13.70	12.20	15.10	B	84.13	2	42.07	13.09*
				W	183.20	57	3.21	
Adjusted Post Test	13.70	12.19	15.11	B	0.23	2	42.59	13.25*
				W	178.75	56	3.22	
Mean Gain	6.20	4.60	7.65					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

Regarding abdominal strength, the pre-test results for experimental groups I, II, and III were, respectively, 7.50, 7.60, and 7.45. For abdominal strength, the post-test results for experimental groups I, II, and III were, respectively, 13.70, 12.20, and 15.10.

In terms of abdominal strength, experimental groups I, II, and III obtained order adjusted mean scores of 13.70, 12.19, and 15.11, respectively.

The pre-test score obtained an F value of 0.15 was lesser than 3.15 table the required value at 0.05 level of significance. As a consequence, it was established that there was no significant difference among the three experimental groups, proving the process of randomly allocating people to groups was executed flawlessly.

The examination of post-test scores showed that there were substantial differences between the three experimental groups; the derived F-value of 13.09 was more than the necessary table value of 3.15, indicating the significance of the variations between the subjects' post-test mean.

After statistical analysis, adjusted mean scores were calculated, adjusted for the groups' pre- and post-test results. Because of the experimental training on abdominal strength, the acquired F value of 13.25 was higher than the mean. The final results were subjected to post hoc analysis using Scheffe's post hoc analysis given, the significance differences were noted. The findings were displayed in Table XIX.

TABLE –XIX
SCHEFF'S POST HOC TEST ON ABDOMINAL STRENGTH
(score in number of count)

ASTG	YPPTG	CTG	MD	CD
13.70	12.19	-	1.51	1.18
13.70	-	15.11	1.41	
-	12.19	15.11	2.92	

Significant

Table-XIX's multiple mean Comparative analysis indicated that there were notable variations between the corrected means of adapted strength training group

(ASTG), yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG)

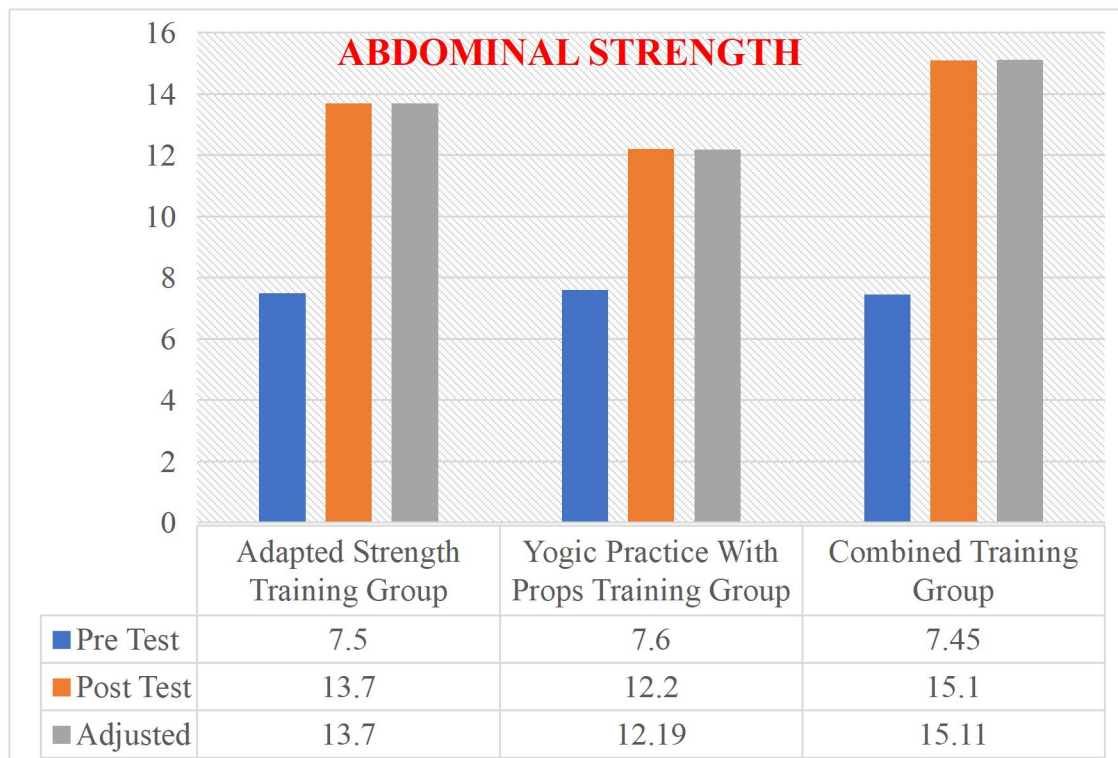
Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and

combined adapted strength training and Yogic practices with props group (ASTYPPG)

The needed confidence interval of 1.18 was not met by the mean difference. Upon comparing the means of the three groups, it was discovered that experimental group-III (which consisted of both adapted strength training and yogic practices with props) significantly improved their abdominal strength more than groups I and II of experiment (adapted strength training and yogic practices with props, respectively).

Figure 4, presents the adjusted means for abdominal strength using a bar graphic to help you better comprehend the study's findings.

FIGURE 4
BAR DIAGRAM PRE,POST AND ORDERED ADJUSTED MEAN OF
ABDOMINAL STRENGTH
(scores in number of count)



4.5.1.1.1 DISCUSSION ON THE FINDINGS OF ABDOMINAL STRENGTH

The outcomes shown in Table XVIII showed that the adjusted mean for abdominal strength among the groups undergoing adapted strength training (ASTG) was 13.70, yogic practices with props (YPPG) was 12.19, and the combined group that underwent adapted strength training and yogic practices with props was 15.11.

When ANCOVA used to statistically analyze the participants' pre-, post-, and adjusted mean scores, the F values were 0.04, 13.09, and 13.25, respectively. The results indicated that the adjusted means and post-test obtained F values were The acquired F values on pre-test scores were not significant at 0.05 level of confidence because they were less than that needed by the table, and they were significant at the

0.05 level of confidence since they were more than the required table value of 3.15.

Scheffe's confidence test, used in the post hoc analysis, proved that twelve weeks training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the abdominal strength among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **Michal Krzysztofik (2021)**, who showed improved upper body strength, resistance training as a result of Paralympic sitting volleyball players.

This study focuses on Paralympic sitting volleyball players. The strength parameter would have increased greatly as a result of tailored strength training and prop-based yoga practices. The individual performed much better on the strength parameter, Abdominal Strength.

4.5.1.2 RESULTS ON SHOULDER STRENGTH

The statistical comparison of experimental group I, experimental group II, and experimental group III' beginning and final mean for shoulder strength as displayed in the table- XX.

TABLE-XX
COMPUTATION OF ANALYSIS OF COVARIANCE ON
SHOULDER STRENGTH
(Scores in number of count)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	25.50	26.00	25.90	B	2.80	2	1.40	0.10
				W	762.80	57	13.38	
Post Test	31.00	29.40	34.85	B	313.90	2	156.95	9.01*
				W	993.35	57	17.43	
Adjusted Post Test	31.31	29.19	34.75	B	2.80	2	157.11	51.25*
				W	762.80	56	3.07	
Mean Gain	5.50	3.40	8.95					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

Pre-test results for shoulder strength were obtained for experimental groups I, II, and III, respectively, and were 25.50, 26.00, and 25.90. With regard to shoulder strength, the results of the post-test for the experimental groups I, II, and III were, respectively, 31.00, 29.40, and 34.85.

For shoulder strength, the order-adjusted mean outcomes for the experimental groups I, II, and III were, respectively, 31.31, 29.19, and 34.75.

The F value obtained from 0.10 pre-test score was less than 3.15 table value required for significance at 0.05 level. These findings showed that there was no significant difference between the three test groups, suggesting as the process of assigning individuals to groups at random was completed perfectly.

The examination of the post-test results indicated that there were substantial variations between three experimental groups; the resulting F value of 9.01 was higher than the necessary table value of 3.15, indicating the significance of the variations between the subjects' post-test mean.

The obtained adjusted mean scores were and statistical treatment applied, taking into consideration the groups' pre- and post-test results. Because of the experimental training on shoulder strength, the acquired F value of 51.25 was higher than the mean. The results were subjected to post hoc analysis using Scheffe's post hoc analysis because significant differences were noted. The findings are shown in Table-XXI.

TABLE –XXI
SCHEFFE’S POST HOC TEST ON SHOULDER STRENGTH
(scores in number of count)

ASTG	YPPTG	CTG	MD	CD
31.31	29.19	-	2.12	1.15
31.31	-	34.75	3.43	
-	29.19	34.75	5.55	

Significant

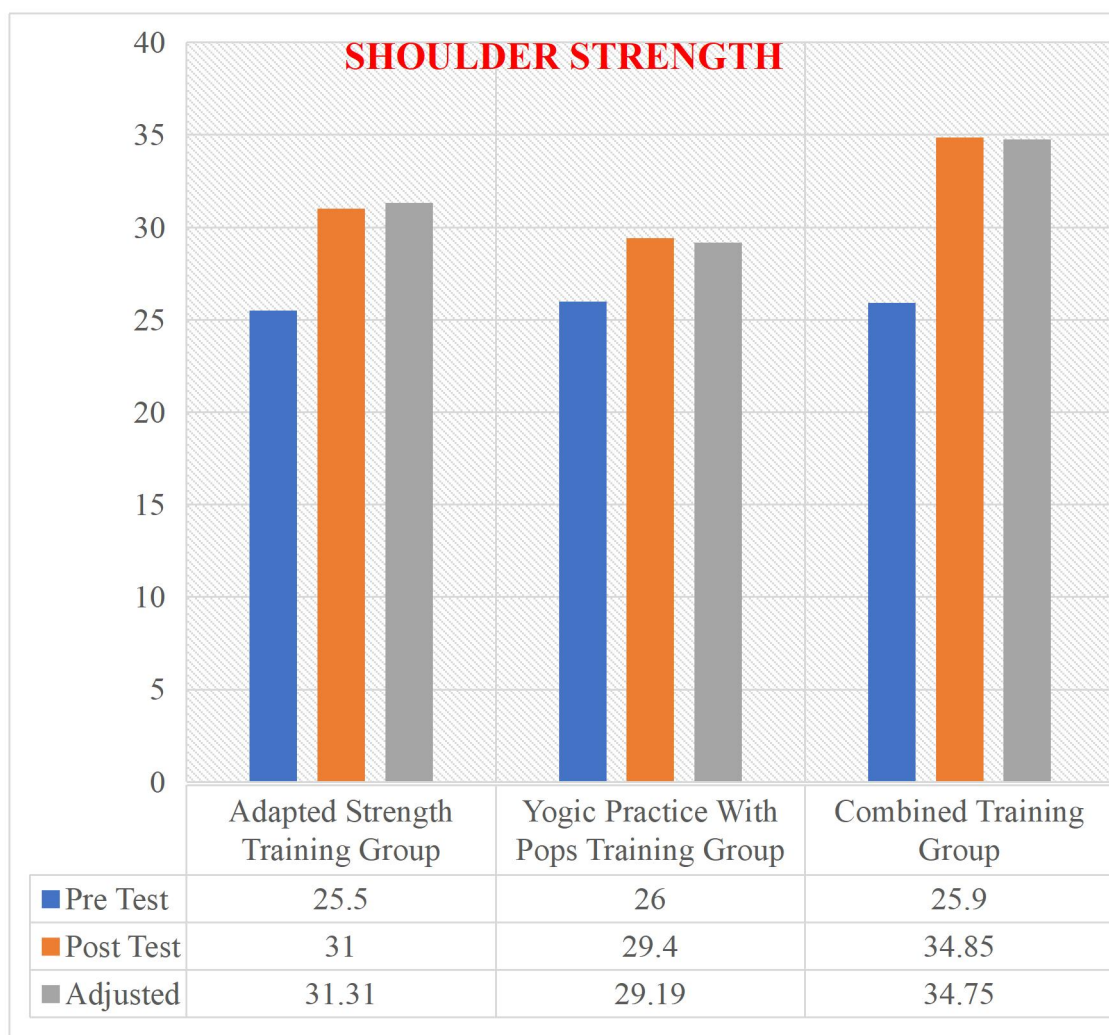
Table-XXI a comparison of the many means revealed significant differences between the corrected means of adapted strength training group (ASTG), yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG)

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and combined adapted strength training and Yogic practices with props

group (ASTYPPG)The needed confidence interval of 1.15 was not met by the mean difference. Upon comparing the means of the three groups, it was discovered that experimental group-III (which consisted of both adapted strength training and yogic practices with props) significantly improved their shoulder strength more than groups I and II of experiment (adapted strength training and yogic practices with props, respectively).

Figure 5, presents the adjusted mean for shoulder strength using a bar graphic to help readers better grasp the study's findings.

FIGURE 5
BAR DIAGRAM ON PRE ,POST AND ORDERED ADJUSTED MEANS OF
SHOULDER STRENGTH
(scores in number of count)



4.5.1.2.1 DISCUSSION ON THE DETECTION OF SHOULDER STRENGTH

Table-XX results showed that the adjusted the mean about shoulder strength among adapted strength training group (ASTG) was 31.31, yogic practices with props group (YPPG) was 29.19, and adapted strength training and yogic practices with props group was 34.75.

ANCOVA used to statistically treat the individuals' differences in pre-, post-, and adjusted means scores; the resulting F values were 0.10, 9.01, and 51.25, respectively. The results indicated that the adjusted means and post-test obtained F values were significant at the 0.05 level of confidence due to their higher than the required table value of 3.15, and the obtained F values on pre-test scores were not significant at the 0.05 level of confidence because they were lesser than that required by the table value.

Schrieffer's confidence test, used in the post hoc analysis, proved that twelve weeks training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group. Clearly showing the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the shoulder strength among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **S Hasanbegovic (2011)**, who showed improved programmed training on motor ability of people with movement impairment in explosive strength, motion frequency and agility as a result of sitting volleyball players.

This study focuses on Paralympic sitting volleyball players. The strength parameter would have increased greatly as a result of tailored strength training and prop-based yoga practices. The individual performed much better on the strength parameter, shoulder strength.

4.5.1.3 RESULTS ON GRIP STRENGTH

The statistical comparison of the experiment group I, the group that experiments II, and experimental group III beginning and the mean for grip strength in table XXII.

TABLE-XXII
COMPUTATION OF ANALYSIS OF COVARIANCE ON
GRIP STRENGTH
(Scores in Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	42.13	42.81	42.40	B	4.64	2	2.32	0.07
				W	1880.24	57	32.99	
Post Test	50.11	48.41	54.20	B	353.87	2	176.93	4.92*
				W	2049.46	57	35.96	
Adjusted Post Test	50.40	48.08	54.24	B	4.64	2	193.32	23.08*
				W	1880.24	56	8.38	
Mean Gain	7.98	5.61	11.80					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

Regarding grip strength, the pre-test results for experimental groups I,II,and III were, respectively, 42.13, 42.81, and 42.40. On the grip strength post-test, experimental groups I, II, and III had scores of 50.11, 48.41, and 54.20, in that order.

For grip strength, the order-adjusted mean results for the groups that were tested I, II, and III were 50.40, 48.08, and 54.24, correspondingly.

The pre-test score obtained F value of 0.07 was less than 3.15 table the amount of value required for it to be considered significant at a 0.05 level. This finding indicated that there was no discernible difference between the three test groups, suggesting that the procedure of randomly allocating people to groups was executed perfectly.

The examination of the post-test results showed that there were significant differences between the three experimental groups; the derived F 4.92 value was higher than the necessary table value of 3.15, proving the significance of the variations between the subjects' pre test the mean. The groups' pre- and post-test results were taken into consideration while determining the adjusted mean scores and using statistical analysis. The experimental training on grip strength produced a F-value of 23.08, which was higher than the mean. Scheffe's Using a post-hoc test, do post hoc analysis on the data since significant differences were noted. Table-XXIII included the results.

TABLE –XXIII
SCHEFFE’S POST HOC TEST ON GRIP STRENGTH
(Scores in number of Kg)

ASTG	YPPTG	CTG	MD	CD
50.40	48.08	-	2.32	1.90
50.40	-	54.24	3.84	
-	48.08	54.24	6.16	

significant

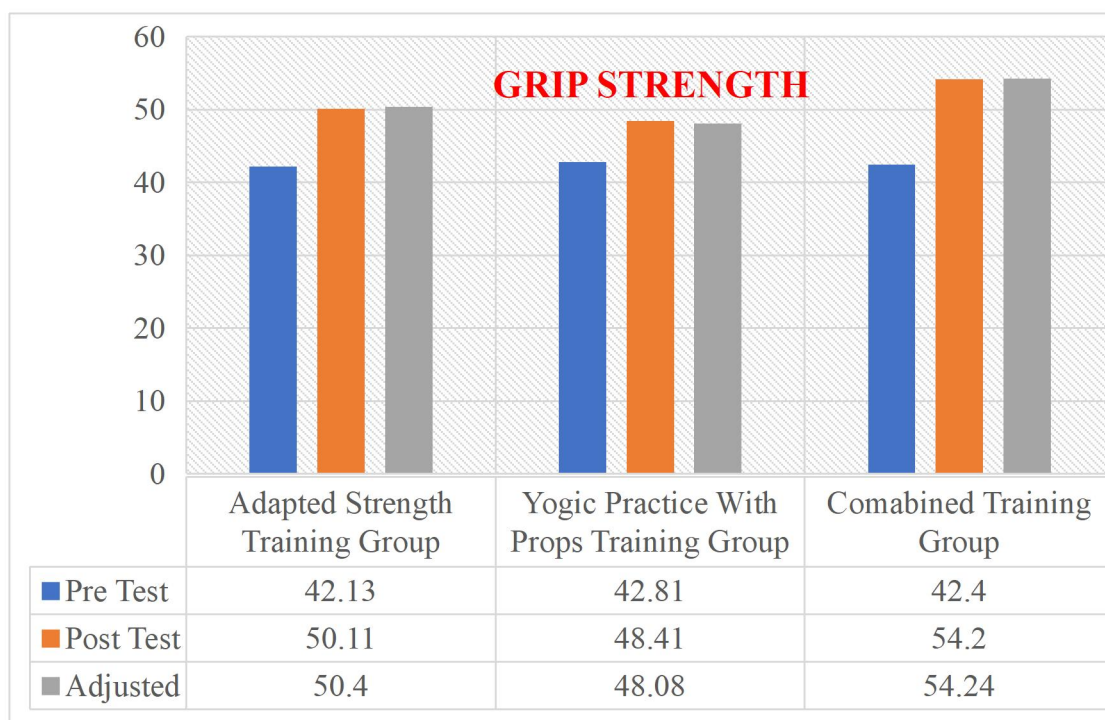
The multiple mean comparison displayed in Table-XXIII proved that the adjusted means of the adapted strength training group was very different from other groups (ASTG),yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG)

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and combined adapted strength training and Yogic practices with props group (ASTYPPG) The necessary confidence interval of 1.90 was exceeded by the mean difference. When the means of the three comparison of groups, it was discovered that experimental group-III—which consisted of both adapted strength training and yogic practices with props—had significantly improved its grip strength more than experimental groups I and II—which had separately focused on yogic practices with props and adapted strength training.

Figure 6, presents the corrected means for grip strength as a bar diagram to help with comprehension of the study's findings.

FIGURE -6

**BAR DIAGRAM ON PRE ,POST AND ORDERED ADJUSTED MEANS OF GRIP STRENGTH
(Scores in number of Kg)**



4.5.1.3.1 DISCUSSION ON THE FINDING OF GRIP STRENGTH

Table XXII results indicated that the adjusted means that were obtained on Grip strength among adapted strength training group (ASTG) was 50.40, yogic practices with props group (YPPG) was 48.08, and adapted strength training and yogic practices with props group was 54.24.

ANCOVA was used to statistically analyze The variations between them participants' pre-, post-, and adjusted means scores; the resulting F values were 0.7, 4.92, and 23.08, respectively. The results indicated that the adjusted means and post-test obtained F values were significant at the 0.05 level of confidence because they were higher than the required table value of 3.15, and the pre-test obtained F value was not significant at the 0.05 level of confidence because it was lesser than the required table value of 3.15.

Scheffe's confidence test, used in the post hoc analysis, proved that twelve-week instruction of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group. Clearly showing the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group for improving the grip strength among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **lee Young - ae (2010)**, who showed improve upper body physical strength and mobility as a result of sitting Volleyball players.

This study focuses on Paralympic sitting volleyball players. The strength

parameter would have increased greatly as a result of tailored strength training and prop-based yoga practices. The individual performed much better on the strength parameter, Grip Strength.

4.6 COMPUTATION OF ANALYSIS COVARIANCE AND POST HOC TEST

4.6.1 Psychological Variables

4.6.1.1 Results on Achievement Motivation

The statistical comparison of experimental groups I, II, and III beginning and the end means for achievement motivation is shown in table-XXIV.

TABLE-XXIV
COMPUTATION OF ANALYSIS OF COVARIANCE ON
ACHIEVEMENT MOTIVATION
(Scores in Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	26.55	27.65	28.30	B	31.30	2	15.65	0.75
				W	1181.70	57	20.73	
Post Test	30.65	33.00	35.10	B	198.23	2	99.12	5.98*
				W	944.35	57	16.57	
Adjusted Post Test	31.40	32.88	34.47	B	31.30	2	45.72	12.74*
				W	1181.70	56	3.59	
Mean Gain	4.10	5.35	6.80					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

That achievement motivation, the pre-test results for experimental groups I, II, and III were, respectively, 26.55, 27.65, and 28.30. With regard to achievement motivation, the post-test scores for the experimental groups I, II, and III were, respectively, 30.65, 33.00, and 35.10.

For achievement motivation, the order-adjusted The mean result for the experimental groups I, II, and III were 31.40, 32.88, and 34.47, respectfully.

The pre-test score of 0.75 produced a F value that was less than the 3.15 table value necessary to be significant at a 0.05 level. This outcome showed that there was not a significant difference among the three experimental groups, showing that the procedure of randomly allocating people to groups was executed effectively.

The examination of the post-test Results showed that there were significant variations between the three experimental groups; the derived F value of 5.98 was more than the necessary table value of 3.15, proving the significance of the variations between the subjects' post-test the mean.

The obtained adjusted mean scores were and statistical treatment applied, taking into consideration the groups' pre- and post-test results. The F value of 12.74 that was attained was greater than the means that result from the achievement motivation experiment. The results were subjected to post hoc analysis using Scheffe's post hoc analysis given the significance differences were noted. The outcomes were displayed in Table-XXV.

TABLE –XXV
SCHEFFE’S POST HOC TEST ON ACHIEVEMENT MOTIVATION
(Scores in Points)

ASTG	YPPTG	CTG	MD	CD
31.40	32.88	-	-1.48	1.25
31.40	-	34.47	-3.06	
-	32.88	34.47	-1.58	

Significant

The adjusted means of the adapted strength training group (ASTG), the yogic practices with props group (YPPG), and the combined adapted strength training and

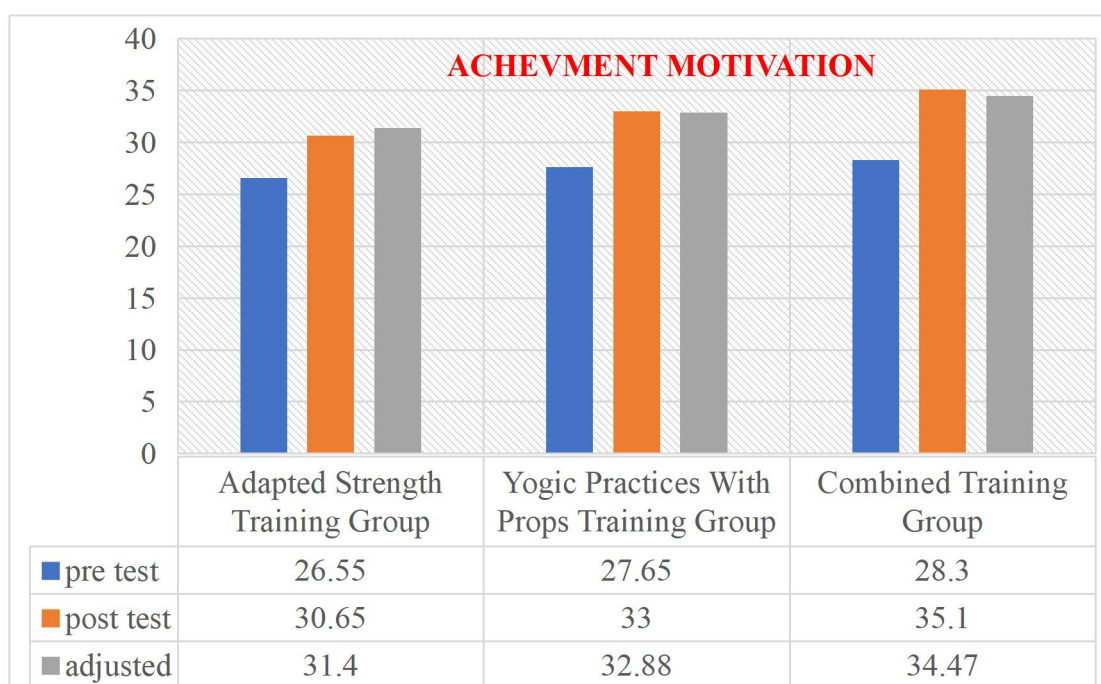
yogic practices with props group (ASTYPPG) differed significantly, as proved by the multiple mean comparison displayed in Table-XXV.

The groups that received adapted strength training were the adapted strength training group (ASTG), the yogic practices with props group (YPPG), the combined adapted strength training and yogic practices with props group (ASTYPPG), and the yogic practices with props group (YPPG). Between these groups, the mean difference was higher than the necessary confidence interval 1.25. When the means of the three Comparing groups, it was discovered that experimental group III—which combined adapted strength training and yogic practices with props—had significantly improved achievement motivation more than experimental groups I and II—which had adapted strength training and yogic practices with props, respectively.

Figure 7 presents the adjusted means on achievement motivation using a bar graphic to help readers better grasp the study's findings.

FIGURE-7
BAR DIAGRAM ON PRE, POST AND ORDERED ADJUSTED MEANS OF
ACHIEVEMENT MOTIVATION

(Scores in points)



4.6.1.1.1 DISCUSSION ON FINDING OF ACHIEVEMENT MOTIVATION

The findings displayed in Table-XXIV showed that the adjusted the mean on Achievement motivation among adapted strength training group (ASTG) was 31.40, yogic practices with props group (YPPG) was 32.88, and adapted strength training and yogic practices with props group was 34.47.

ANCOVA was used to statistically analyze the differences between the participants' pre-, post-, and adjusted means scores; the resulting F values were 0.75, 5.98, and 12.74, respectively. The obtained F values on pre-test results were discovered to be lesser than the required table value of 3.15, making them not significant at the 0.05 level of confidence. Obtained F values on post-test results and adjusted means were shown to have a higher significance level of confidence.

Scheffe's confidence test, used within the post hoc analysis, proved that twelve weeks training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group Clearly showing the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the Achievement motivation among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **Al Jubouri (2016)**, who showed impact the of a combined mental and physical training on the mental toughness of sitting volleyball players.

This study focuses on Paralympic sitting volleyball players. The psychological factors would have increased greatly as a result of tailored strength training and prop-

based yoga practices. The individual performed much better on the psychological variables, achievement motivation.

4.6.1.2 RESULTS ON MAINTAINING CONFIDENCE

The statistical comparison of group I, group II, and experimental group III beginning and final means on maintaining confidence in table -XXVI.

TABLE-XXVI
COMPUTATION OF ANALYSIS OF COVARIANCE ON
MAINTAINING CONFIDENCE
(Scores in Points)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	26.50	27.10	27.55	B	11.10	2	5.55	0.31
				W	1005.75	57	17.64	
Post Test	30.35	33.00	35.35	B	250.30	2	125.15	8.36*
				W	853.10	57	14.97	
Adjusted Post Test	30.78	32.96	34.96	B	11.10	2	86.11	21.26*
				W	1005.75	56	4.05	
Mean Gain	3.85	5.90	7.80					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

In terms of maintaining confidence, experimental groups I, II, and III scored 26.50, 27.10, and 27.55 on the pre-test, in that order. In terms of maintaining confidence, the post test results for experimental groups I, II, and III were, respectively, 30.35, 33.00, and 35.35.

Experimental groups I, II, and III had order-adjusted mean scores of 30.78, 32.96, and 34.96 on the maintaining confidence scale, respectively.

The pre-test score's derived F-value of 0.31 was less than the 3.15 table value that was required for it to be significant at the 0.05 level. This outcome showed that there no discernible difference between the three experiment groups, showing that the procedure of randomly allocating people to groups was executed flawlessly.

The examination of post-test scores indicated that there were Significant differences between the three experimental groups; the resultant F-value of 8.36 was greater than the necessary table value of 3.15, indicating that the subjects' post-test Means varied from one another.in a meaningful way.

The results showed an adjusted mean score.and statistical treatment applied, taking into consideration the groups' pre- and post-test results. Because within the experimental training on maintaining confidence, the resulting F-value of 21.26 was greater than the mean. The results were subjected to post hoc analysis using Scheffe's post hoc analysis given the significance differences were noted. Table-XXVII displayed the results.

TABLE –XXVII
SCHEFFE’S POST HOC TEST ON MAINTAINING CONFIDENCE
(Scores in Points)

ASTG	YPPTG	CTG	MD	CD
30.78	32.96	-	2.18	1.32
30.78	-	34.96	4.17	
-	32.96	34.96	1.99	

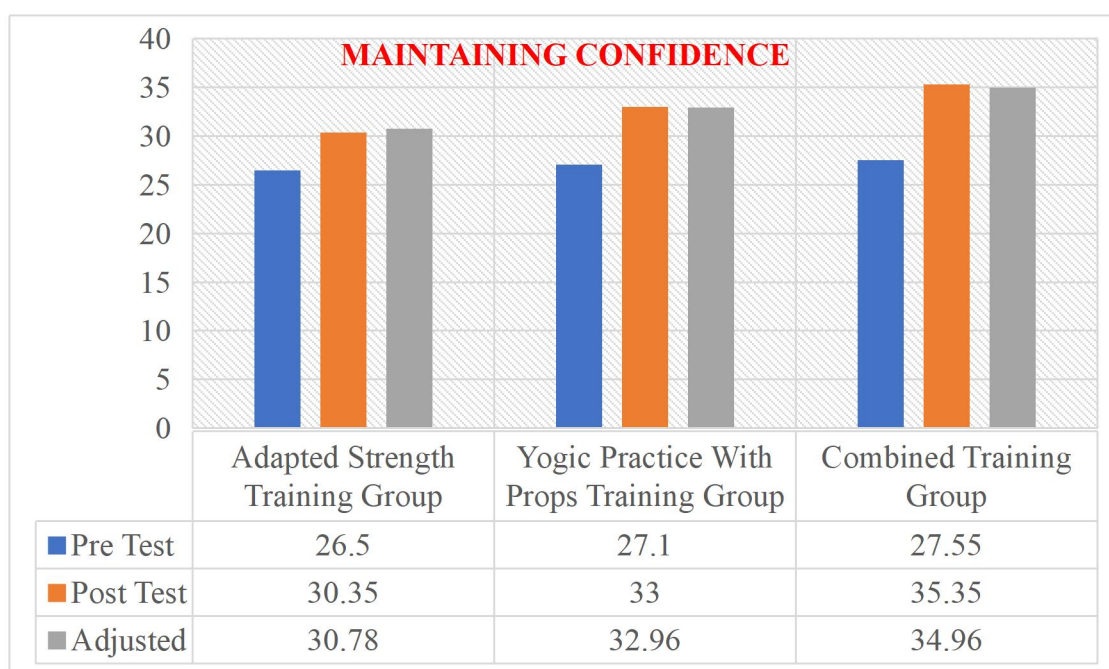
Significant

The adjusted means of the adapted strength training group (ASTG), the yogic practices with props group (YPPG), and the combined adapted strength training and yogic practices with props group (ASTYPPG) differed significantly, as showed by the multiple mean comparison displayed in Table-XXVII.

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and combined adapted strength training and Yogic practices with props group (ASTYPPG). The necessary confidence interval of 1.32 was exceeded by the mean difference. When the means of the three when groups were compared, it was discovered that experimental group-III which consisted of both adapted strength training and yogic practices with props—had significantly improved on maintaining confidence more than experimental groups I and II—which involved adapted strength training and yogic practices with props.

Figure-8 presents the adjusted means for maintaining confidence as a bar diagram to help in understanding the study's findings.

FIGURE-8
BAR DIAGRAM ON PRE,POST AND ORDERED ADJUSTED MEANS OF
MAINTAINING CONFIDENCE
(Scores in Points)



4.6.1.2.1 DISCUSSION ON FINDINGS OF MAINTAINING CONFIDENCE

The findings displayed in Table-XXVI indicated that the adjusted the mean on Maintaining confidence among adapted strength training group (ASTG) was 30.78, yogic practices with props group (YPPG) was 32.96, and adapted strength training and yogic practices with props group was 34.96.

ANCOVA was used to statistically analyze the differences between the participants' pre-, post-, and adjusted means scores; the resulting F values were 0.31, 8.36, and 21.26, respectively. The findings indicated that the adjusted means and post-test obtained F values were significant at the 0.05 level of confidence because they were higher than the required table value of 3.15, and the pre-test obtained F value was not significant at the 0.05 level of confidence because it was lesser than the required table value of 3.15.

Scheffe's confidence test, used within the post hoc analysis, proved that twelve weeks training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group clearly showing the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group in improving the Maintaining confidence among Paralympic sitting volleyball players.

The current study's findings are similarly consistent with those of **AI Jubouri (2016)**, who showed impact the of a combined mental and physical training on the mental toughness of sitting volleyball players.

This study focuses on Paralympic sitting volleyball players. The psychological

factors would have increased greatly as a result of tailored strength training and prop-based yoga practices. The individual performed much better on the psychological variables, maintaining confidence.

4.6.1.3 RESULTS ON CONCENTRATION

The statistical comparison of The first, second, and third experimental groups beginning and end means for concentration in table -XXVII

TABLE-XXVIII
COMPUTATION OF ANALYSIS OF COVARIANCE ON
CONCENTRATION
(Scores in Points)

Test	MEAN			SV	Sum of Squares	df	Mean Square	`F` Ratio
	ASTG	YPPTG	CTG					
Pre Test	25.95	25.05	25.25	B	8.93	2	4.47	0.30
				W	835.65	57	14.66	
Post Test	30.50	32.10	34.00	B	122.80	2	61.40	7.22*
				W	484.80	57	8.51	
Adjusted Post Test	30.18	32.32	34.10	B	8.93	2	76.69	23.98*
				W	835.65	56	3.20	
Mean Gain	4.55	7.05	8.75					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

In this concentration pre-test, the results for experimental groups I, II, and III were, respectively, 25.95, 25.05, and 25.25. As for concentration, the post-test result for the experimental groups I, II, and III were, respectively, 30.50, 32.10, and 34.00.

For concentration, the order-adjusted mean results for the experimental groups I, II, and III were, respectively, 30.18, 32.32, and 34.10.

The results of the pre-test of 0.30 produced a F-value was lower than 3.15 table value necessary to be significant at 0.05 level. This outcome showed that there was no discernible difference between the three trial groups, showing that the procedure of randomly allocating people to groups was executed flawlessly.

Study of the post-test research results indicated that there were substantial differences between the three experimental groups; the derived F-value of 7.22 was higher than the necessary table value of 3.15, showing the significance of the variations between the subjects' post-test mean.

The obtained adjusted mean scores were and statistical treatment applied, taking into consideration the groups' pre- and post-test results. Because within the experimental training on concentration, the achieved F-value of 23.98 was greater than the mean. The results were subjected to post hoc analysis using Scheffe's post hoc analysis given, the significance differences were noted. The outcomes were displayed in Table-XXIX.

TABLE –XXIX
SCHEFF’S POST HOC TEST ON CONSIDERATION
(scores in points)

ASTG	YPPTG	CTG	MD	CD
30.18	32.32	-	2.14	1.18
30.18	-	34.10	3.92	
-	32.32	34.10	1.78	

Significant

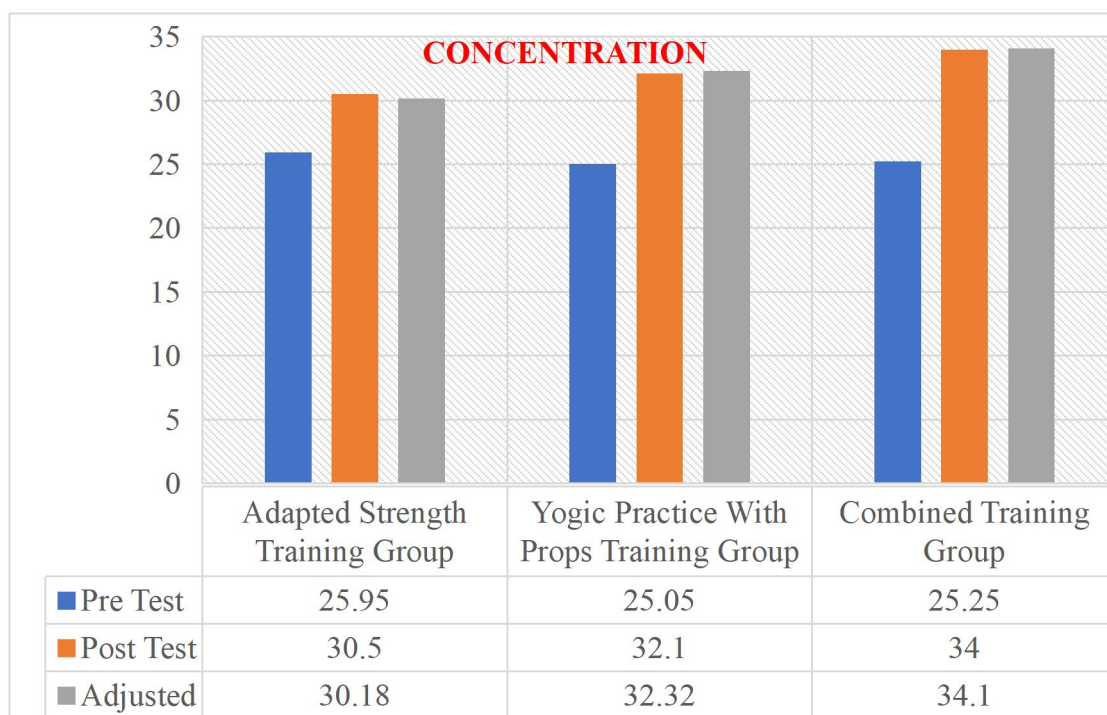
Table-XXIX multiple mean comparison proved that significant differences existed between the corrected means of adapted strength training group (ASTG), yogic practices with props group (YPPG), and combined adapted strength training and yogic practices with props group (ASTYPPG)

Adapted strength training group (ASTG) and yogic practices with props group (YPPG), adapted strength training group (ASTG) and combined adapted strength training and Yogic practices with props group (ASTYPPG), yogic practices with props group (YPPG) and combined adapted strength training and Yogic practices with props group (ASTYPPG) The necessary confidence interval of 1.18 was exceeded by the mean difference. When the three groups' means were compared, it was discovered that experimental group-III—which consisted of both adapted strength training and yogic practices with props—had improved significantly on concentration more than experimental groups I and II—which had separately focused on adapted strength training and yogic practices with props.

Figure- 9 presents the adjusted the mean on Concentration using a bar graphic to help readers better grasp the study's findings.

FIGURE - 9

**BAR DIAGRAM ON PRE, POST AND ORDERED ADJUSTED MEANS OF CONCENTRATION
(Scores in Points)**



4.6.1.3.1 DISCUSSION ON THE FINDINGS OF CONCENTRATION

According to the findings displayed in Table XXVIII, the adjusted means that were obtained on concentration among adapted strength training group (ASTG) was 30.18, yogic practices with props group (YPPG) was 32.32, and adapted strength training and yogic practices with props group was 34.10

When ANCOVA was used to statistically analyze the participants' pre-, post-, and adjusted mean scores, the F values were 0.30, 7.22, and 23.98, respectively. The results indicated that the obtained F values on adjusted means and post-test scores were significant at 0.05 level of confidence because they were higher than the required table value of 3.15, and the obtained F values on pre-test scores were not significant at 0.05 level of confidence were less than that table value.

Scheffe's confidence test used in the post hoc study proved that as a result of twelve weeks of training of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training the combined adapted strength training and yogic practices with props training group made a much greater improvement than the isolated adapted strength training group, and isolated yogic practices with props training group. Clearly showing the beneficial effects of adapted strength training, yogic practices with props training and combined adapted strength training and yogic practices with props training group to improve the Concentration among Paralympic sitting volleyball players

The current study's findings are similarly consistent with those of **Al Jubouri (2016)**, who showed impact the of combined mental and physical training on the mental toughness of sitting volleyball players.

This study focuses on Paralympic sitting volleyball players. The psychological factors would have increased greatly as a result of tailored strength training and prop-

based yoga practices. The individual performed much better on the psychological variables, concentration.

4.7 COMPUTATION OF ANALYSIS OF COVARIANCE

4.7.1 Anthropometric Variables

4.7.1.1 Results on Hand Length

The statistical comparison of the experimental group I, experimental group II, and experimental group III beginning and final the mean on hand length in table - XXX

TABLE-XXX
COMPUTATION OF ANALYSIS OF COVARIANCE ON
HAND LENGTH
(Scores in centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	`F` Ratio
	ASTG	YPPTG	CTG					
Pre Test	18.39	18.39	18.57	B	0.47	2	0.23	0.16
				W	81.58	57	1.43	
Post Test	18.39	18.39	18.58	B	0.47	2	0.24	0.17
				W	81.61	57	1.43	
Adjusted Post Test	18.45	18.45	18.45	B	0.47	2	0.00	0.94
				W	81.58	56	0.00	
Mean Gain	0.00	0.00	0.00					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

For the hand length pre-test, the results for experimental groups I, II, and III were, respectively, 18.39, 18.39, and 18.57. In terms of hand length, the post-test results for experimental groups I, II, and III were, respectively, 18.39, 18.39, and

18.58. For Hand Length, the order-adjusted mean scores of experimental groups I, II, and III were 18.45, 18.45, and 18.45, correspondingly.

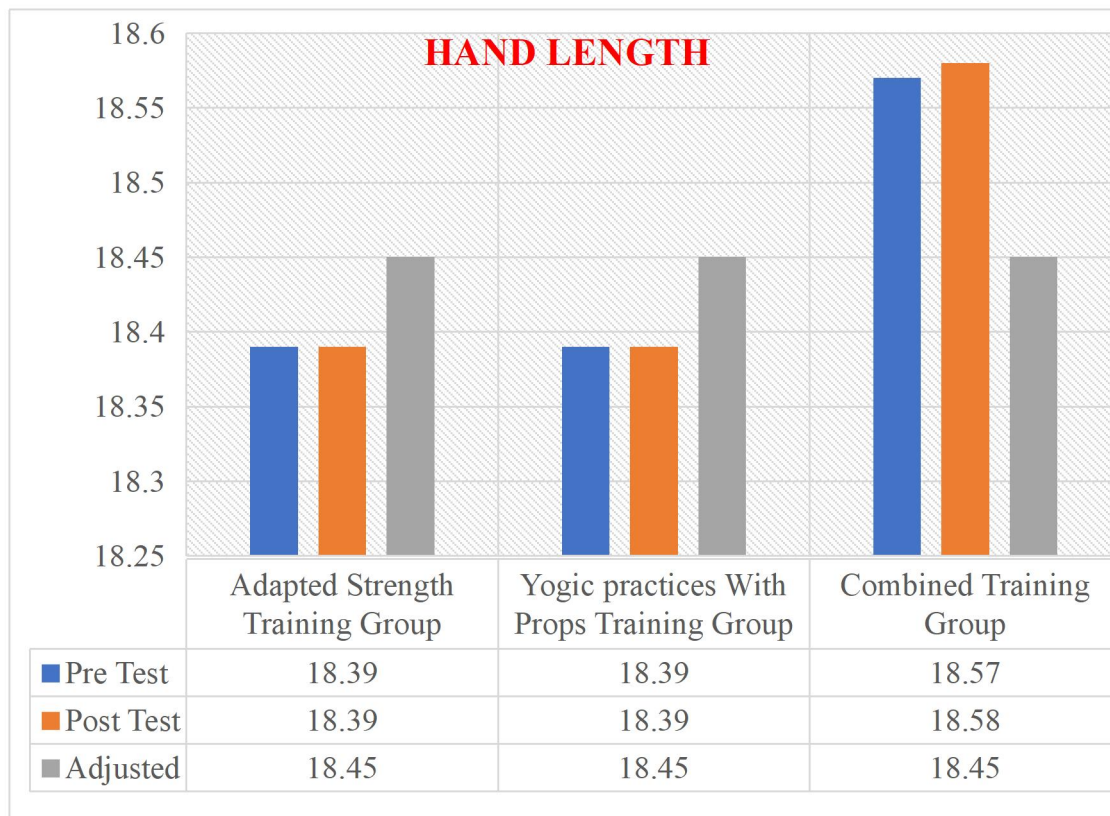
The pre-test score was derived F from- value of 0.16 was less than 3.15 table value that was required for it to be significant at 0.05 level. The three experimental groups did not significantly differ from one another, indicating that the technique of randomly allocating people to groups was flawless.

The examination of the post-test The research results showed that there were no significant variations between the three experimental groups, and the derived F value of 0.17 was not greater than the necessary table value of 3.15, showed no statistically significant distinction existed between the subjects' post-test the mean.

The obtained adjusted mean scores were and statistical treatment applied, taking into consideration the groups' pre- and post-test results. Because within the experimental training on total hand length, the derived F- value of 0.94 was not higher than the mean. given that no significant variations were found. It shows that the experimental training on "Hand Length" did not result in any discernible differences between the means. The outcome might be explained by the training used in this study project, as well as the specificity and kind of the factors examined.

Figure- 10 presents the corrected the mean for Hand Length using a bar graphic to help readers better grasp the study's findings.

FIGURE-10
BAR DIAGRAM ON PRE , POST AND ORDERED ADJUSTED MEANS ON
HAND LENGTH
(Scores in centimeters)



4.7.1.1.1 DISCUSSION ON THE FINDINGS OF HAND LENGTH

According to the findings displayed in Table-XXX, the adjusted means that were obtained on Hand Length among adapted strength training group (ASTG) was 18.45, yogic practices with props group (YPPG) was 18.45, and adapted strength training and yogic practices with props group was 18.45.

ANCOVA was used to statistically analyze the differences between the individuals' pre-, post-, and adjusted means scores; the resulting F values were 0.16, 0.17, and 0.94, respectively. Because the acquired F value on the pre-test results was less than the necessary table value of 3.15, it was determined that the obtained F value was not significant at 0.05 level of confidence. Because the adjusted means and post-

test values were below the necessary table value of 3.15, they were not significant at the 0.05 level of confidence.

The result could be related to the specificity and nature of the variables tested and the training adopted in the present research work. Further research with more specificity of training to develop the Hand Length may be identified and implemented.

The current study's findings are similarly consistent with those of **Springfield,M (2021)**, who showed Anthropometric measurements don-laboratory field tests specific to sitting volleyball can be useful for the coaching staff to determine which players are best suited for specific a position and the athletes overall performance on the court of sitting Volleyball players.

This study focuses on Paralympic sitting volleyball players. The individual performed much better in chosen specific position on the Anthropometric variables, Hand Length.

4.7.1.2 RESULT ON SITTING BACK HEIGHT

The study conducted a statistical analysis comparing the beginning and end the mean of the first, second, and third experimental groups on sitting back height in table -XXXI.

TABLE-XXXI
COMPUTATION OF ANALYSIS OF COVARIANCE ON
SITTING BACK HEIGHT
(Scores in Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	`F` Ratio
	ASTG	YPPTG	CTG					
Pre Test	81.01	81.65	82.20	B	14.13	2	7.06	0.25
				W	1593.76	57	27.96	
Post Test	81.02	81.65	82.20	B	14.15	2	7.08	0.25
				W	1592.85	57	27.94	
Adjusted Post Test	81.62	81.62	81.62	B	14.13	2	0.00	0.75
				W	1593.76	56	0.00	
Mean Gain	0.00	0.00	0.00					

***The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15**

In terms of sitting back height, the pre-test results for experimental groups I, II, and III were, respectively, 81.01, 81.65, and 82.20. The post-test results for the sitting back height of experimental groups I, II, and III were, respectively, 81.02, 81.65, and 82.20. For Sitting Back Height, the order-adjusted mean scores of experimental groups I, II, and III were 81.62, 81.62, and 81.62, correspondingly.

The calculated F value of 0.25 for the pre-test score was less than a 3.15 table value required for significance at 0.05 level. This finding showed the three experimental groups were not significantly different from one another, indicating that the procedure of randomly allocating people to groups was executed flawlessly.

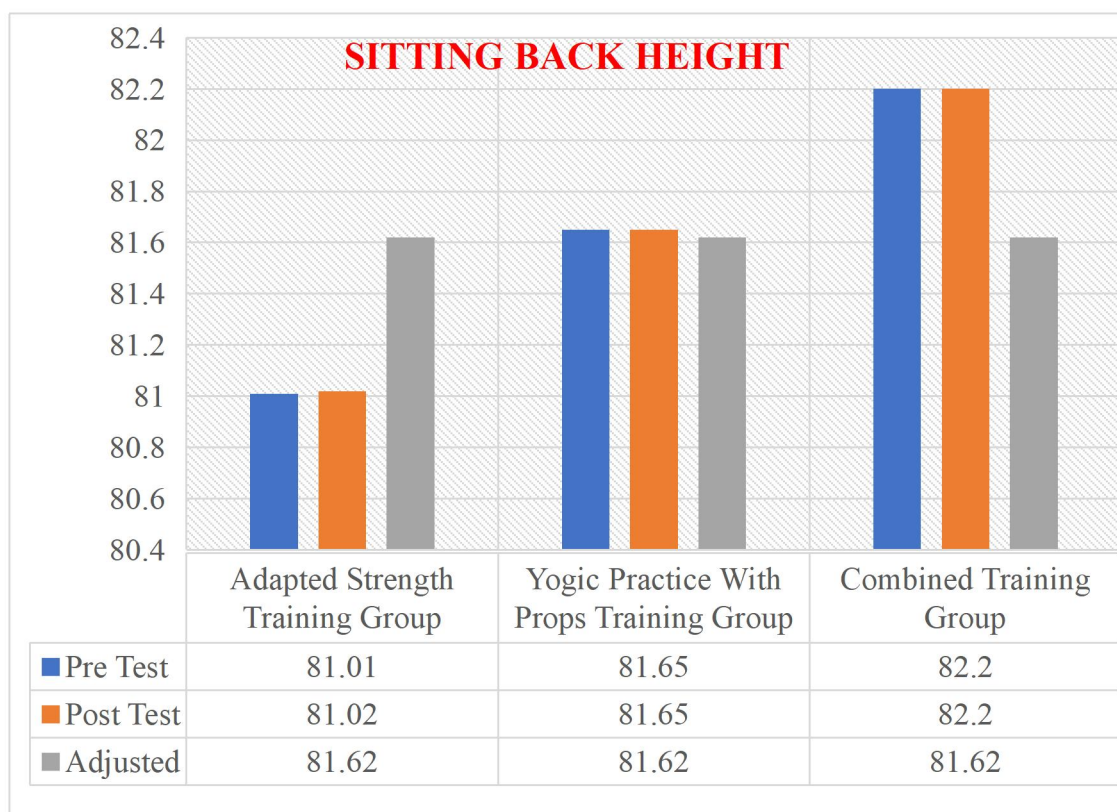
The examination of the post-test results demonstrated that there were no significant differences between the three experimental groups, and the derived F value

of 0.25 was not larger than the necessary table value of 3.15, indicating that there was no significant difference between the subjects' post-test mean.

An adjusted mean score was calculated and statistical treatment applied, taking into consideration the groups' pre- and post-test results. Because of the experimental training on sitting back height, the acquired F value of 0.75 was not greater than the the mean. given that no discernible variations were found. This proves that the experimental training on "Sitting Back Height" did not significantly alter the means. The outcome might be explained by the training used in this study project, as well as the specificity and kind of the factors examined.

In Figure-11, the corrected the mean on Sitting Back Height were displayed as a bar diagram to help with comprehension of the study's findings.

FIGURE -11
BAR DIAGRAM FOR ORDERED ADJUSTED MEANS: PRE, POST,ON
SITTING BACK HEIGHT
(Centimeter-based scores)



4.7.1.2.1 DISCUSSION ON THE FINDINGS OF SITTING BACK HEIGHT

The findings displayed in Table XXXI showed the adjusted means that were achieved on Sitting Back Height among adapted strength training group (ASTG) was 81.62, yogic practices with props group (YPPG) was 81.62, and adapted strength training and yogic practices with props group was 81.62.

ANCOVA was used to statistically treat the individuals' differences in pre-, post-, and adjusted the means scores; the resulting F - values were 0.25, 0.25, and 0.75, respectively. Because the achieved F value on the pre-test results is lesser than the necessary table value is 3.15, and the calculated F-value, it was determined that the computed F-value was not statistically significant at 0.05 level confidence. Because the adjusted means and post-test values were below the necessary table value of 3.15, they were not significant at the 0.05 level of confidence.

The outcome might be attributable to the specificity and nature of the variables tested and the training adopted in the present research work. Further research with more specificity of training to develop the Sitting Back Height may be identified and implemented

The current study's findings are similarly consistent with those of **Springfield, M (2021)**, who showed Anthropometric measurements don-laboratory field tests specific to sitting volleyball can be useful for the coaching staff to determine which players are best suited for specific a position and the athletes overall performance on the court of sitting Volleyball players.

This study focuses on Paralympic sitting volleyball players. The individual performed much better in chosen specific position on the Anthropometric variables, Sitting Back Height.

4.7.1.3 RESULT ON ARM SPAN

The statistical comparison for experimental groups I, II, and III. beginning and final mean on Arm Span in table -XXXII.

TABLE-XXXII
COMPUTATION OF ANALYSIS OF COVARIANCE ON ARM SPAN
(Scores in Centimeters)

Test	MEAN			SV	Sum of Squares	df	Mean Square	'F' Ratio
	ASTG	YPPTG	CTG					
Pre Test	176.39	177.15	177.55	B	13.91	2	6.96	0.10
				W	3874.42	57	67.97	
Post Test	176.40	177.16	177.56	B	13.80	2	6.90	0.10
				W	3875.91	57	68.00	
Adjusted Post Test	177.04	177.03	177.03	B	13.91	2	0.00	0.62
				W	3874.42	56	0.00	
Mean Gain	0.01	0.00	0.00					

*The table value required for significant at 0.05 level of confidence with degrees of freedom 2 and 57 (df) =3.15 and 2 and 56 (df) =3.15

Experiment I, Experiment II, and Experiment III received pre-test results on Arm Span of 176.39, 177.15, and 177.55, respectively. On the Arm Span post-test, the results for Experimental Groups I, II, and III were, respectively, 176.40, 177.16, and 177.56. On Arm Span, the order-adjusted experimental groups' mean scores I, II, and III were 177.04, 177.03, and 177.03, correspondingly.

The results of the pre-test of 0.10 yielded a F value that was not as high as the 3.15 table value necessary to be significant at 0.05 level. This result showed that there was not a significant distinction between the three experimental groups, proving that

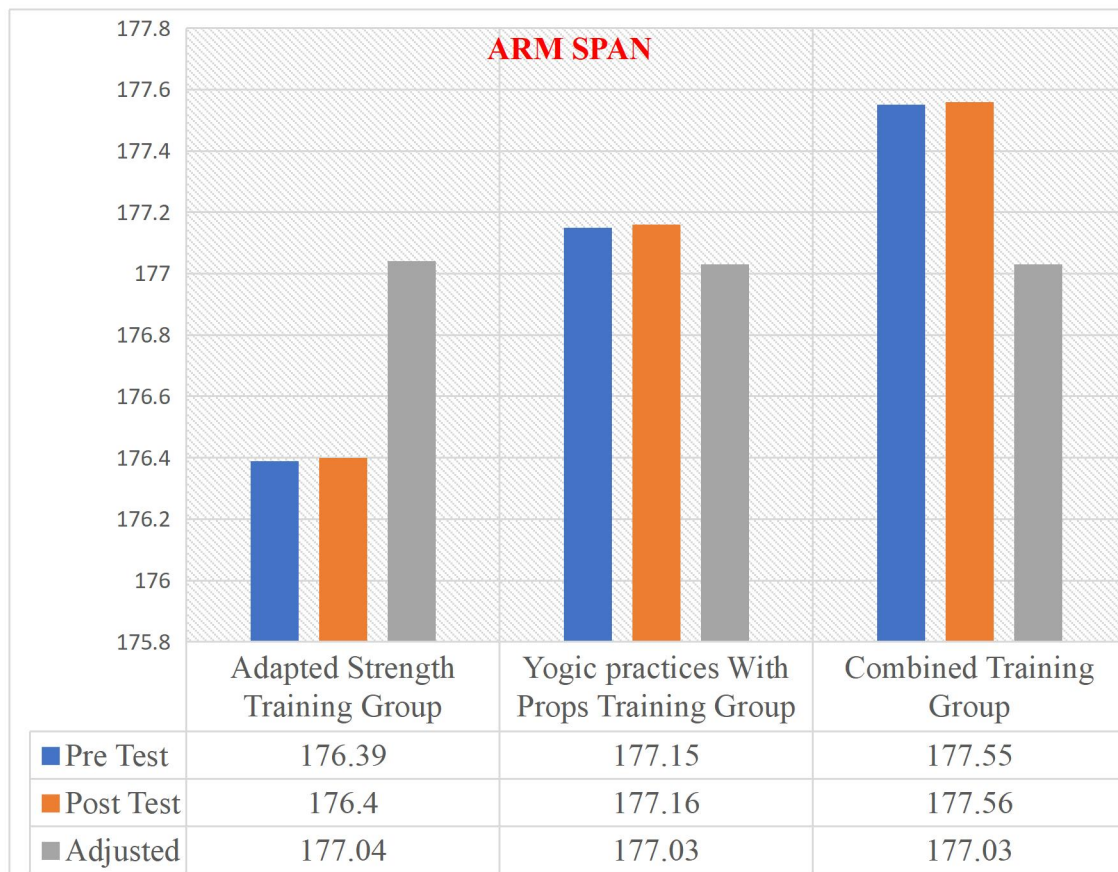
the group assignment procedure used to place the participants into groups was flawless.

The examination of the post-test results indicated that there were not any significant differences between the three experimental groups, and the derived F value of 0.10 was not greater than the necessary table value of 3.15, indicating because there was no significant variation between the subjects' post-test means.

The obtained adjusted mean scores were and statistical treatment applied, taking into consideration the groups' pre- and post-test results. The experimental training on Arm Span prevented the acquired F value of 0.62 from being greater than the means. given that no significant differences were found. It proves that the experimental training on "Arm Span" did not result in any appreciable variation in the means. The outcome might be explained by the training used in this study, as well as the specificity and kind of the factors examined.

Figure-12 presents the adjusted the means on Arm Span using a bar graphic to help you better comprehend the study's findings.

FIGURE-12
BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF PRE, POST, ON
ARM SPAN
(Centimeter-based scores)



4.7.1.3.1 DISCUSSION ON THE FINDING OF ARM SPAN

Table XXXII results showed that the adjusted means that were obtained on Arm Span among the adapted strength training group (ASTG) was 177.04, yogic practices with props group (YPPG) was 177.03, and adapted strength training and yogic practices with props group was 177.03.

ANCOVA was used to statistically analyze the variations between participants' pre-, post-, and adjusted means scores; the resulting F values were 0.10, 0.10, and 0.62, respectively. The results indicated that the obtained F values on the pre-test results did not have significance at 0.05 level of confidence they were less than 3.15 required by the table. Because the adjusted means and post-test values were

below the necessary table value of 3.15, they were not significant at the 0.05 level of confidence.

The outcome may be attributable to the specificity and nature of the variables tested and the training adopted in the present research work. Further research with more specificity of training to develop the Arm Span may be identified and implemented

The current study's findings are similarly consistent with those of **Springfield, M (2021)**, who showed Anthropometric measurements don-laboratory field tests specific to sitting volleyball can be useful for the coaching staff to determine which players are best suited for specific a position and the athletes overall performance on the court of sitting Volleyball players.

This study focuses on Paralympic sitting volleyball players. The individual performed much better in chosen specific position on the Anthropometric variables, Arm Span.

4.8 DISCUSSION ON HYPOTHESES

The investigator formulated three hypotheses to advance his study and enhance its outcomes. A hypothesis is a conjectural statement proposed for testing its validity, which may lead to its acceptance or rejection. The suggested hypotheses were expanded and developed through deductive reasoning.

The investigator deduced the implications of the formulated hypotheses by relating them to available relevant facts. In this study, the hypotheses were tested through valid observation and experimentation, leading to their acceptance or rejection. The following hypotheses were formulated to address the problem through reasonable and thorough investigation. It has been scientifically accepted that any systematic teaching over a continuous period of time, would lead to producing

changes in training qualities. Based on this concept, the following hypotheses are drawn:

1. The formulated first hypothesis stated that there would be a significant improvement on selected flexibility parameters, namely hip and back flexion and shoulder flexibility due to adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. The results presented in table XIV & XVI proved that there was a significant improvement on selected flexibility parameters, namely hip and back flexion and shoulder flexibility due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. Thus, the first hypothesis was accepted.

2. The formulated second hypothesis stated that there would be a significant improvement on selected strength parameters, namely Abdominal Strength, Shoulder Strength, and Grip Strength due to adapted strength training, yogic practices with props training, and combining adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. The results presented in the table XVIII, XX, & XXII proved that there was a significant improvement on selected strength parameters, namely Abdominal Strength, Shoulder Strength, and Grip Strength due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. Thus, the second hypothesis was accepted.

3. The formulated third hypothesis stated that there would be a significant improvement on selected psychological variables, namely achievement

motivation, concentration and maintaining confidence due to adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. The results presented in the table XXIV, XXVI, & XXVIII proved that there was a significant improvement on selected psychological variables, namely achievement motivation, concentration and maintaining confidence due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. Thus, the third hypothesis was accepted.

4. The formulated fourth hypothesizes stated that there would be a significant improvement on selected anthropometric variables namely Total hand length, Sitting back height, and Arm span due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. The result presented in the table XXX, XXXI & XXXII proved that there was no significant improvement on selected anthropometric variables namely Hand length, Sitting back height, and Arm span due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. Thus the fourth hypothesis was rejected.

5. The formulated fifth hypothesizes stated that the combination of adapted strength training and yogic practices with props group would have better significant improvement on the selected flexibility parameter than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting volleyball players. The results presented in table XV & XVII proved that the combination of adapted strength training and yogic practices with

props group would have better significant improvement on the selected flexibility parameter than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting Volleyball players. Thus, the fifth hypothesis was accepted.

6. The formulated sixth hypothesizes stated that the combination of adapted strength training and yogic practices with a props group would have better significant improvement on the selected strength parameters than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting volleyball players. The results presented in table XIX, XXI, & XXIII proved that the combination of adapted strength training and yogic practices with a props group would have a better significant improvement on the selected strength parameter than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting Volleyball players. Thus, the sixth hypothesis was accepted.

7. The formulated seventh hypothesizes stated that the combination of adapted strength training and yogic practices with props group would have better significant improvement on the selected psychological variables than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting Volleyball players. The results presented in tables XXV, XXVII, & XXIX proved that the combination of adapted strength training and yogic practices with a props group would have better significant improvement on the selected psychological variables than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting Volleyball players. Thus, the seventh hypothesis was accepted.

8. The formulated eighth hypothesizes stated that the combination of adapted strength training and yogic practices with props group would have better significant improvement on the selected anthropometric variables than the isolated adapted strength training group and isolated yogic practices with props training group among Paralympic sitting Volleyball players. The result presented in the table XXX, XXXI & XXXII proved that the there was no significant improvement on selected anthropometric variables namely Hand length, Sitting back height, and Arm span due to the adapted strength training, yogic practices with props training, and combined adapted strength training and yogic practices with props training among Paralympic sitting Volleyball players. Thus, the eighth hypothesis was rejected.

TABLE-XXXIII
SHOWING THE RESULTS OF THE STUDY

S. No	VARIABLES	RESEARCH HYPOTHESIS	NULL HYPOTHESIS
Flexibility Parameter			
1	Hip and Back Flexion	Accepted	Rejected
2	Shoulder Flexibility	Accepted	Rejected
Strength Parameter			
3	Abdomen Strength	Accepted	Rejected
4	Shoulder Strength	Accepted	Rejected
5	Grip Strength	Accepted	Rejected
Psychological Variables			
6	Achievement Motivation	Accepted	Rejected
7	Maintaining Confidence	Accepted	Rejected
8	Concentration	Accepted	Rejected
Anthropometric Variables			
9	Hand length	Rejected	Accepted
10	Sitting back height	Rejected	Accepted
11	Arm span	Rejected	Accepted