

## **CHAPTER – IV**

### **RESULTS AND DISCUSSION**

#### **4.1 PREAMBLE**

The prime focus of this research work was to evaluate the presence of physical and social vulnerability of coastal area children and to quantify the impact of adopted experiment in the research. To achieve the purpose of the study One Thousand and Seventeen (1017) children were taken for analysis from the Chennai Coastal Area (CCA). The children age range was fixed from 10 to 14 years. They were analysed through a Physical and Social Vulnerability (PSV) checklist made for this research purpose. From the investigation Six Hundred and Forty-One (641) children were identified with Physical and Social Vulnerability (PSV). Among the social vulnerable children 75 subjects were selected for this experiment by random selection. They were assigned into three equal groups. Two experiment groups and one Non-Experiment Group (NEG), each group consists of 25 children at random. Group-I Physical Education Programme with Hatha Yoga Practices (PEPWHYP), Group-II Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Group-III Non-Experiment Group (NEG). A pre-test was accompanied for all the 75 subjects on selected Health-related Physical Fitness (HRPF) variables namely Flexibility, Muscular Endurance, Muscular Strength, Cardio-

Vascular Endurance and Psychosocial variables namely Depression (DP), Quality of Life (QOL), Self-Esteem (SE). The two experimental training groups underwent scheduled experimental training for a period of twelve weeks, five days a week. Non-Experiment Group (NEG) was not exposed to training, other than their regular activities. After the 12 weeks' experiment schedule all the three groups were measured on the above mentioned variables. The experiment training programme duration 5 day a week for 12 weeks scheduled at 4.00 pm to 5.15 pm for both the experimental training groups. The pre-test and post-test scores were analyzed using a statistical package.

#### **4.2 TEST OF SIGNIFICANCE**

This is the important part of the thesis to arrive the conclusion by examining the hypotheses. The test of significance is valuable to test whether the changes among groups or inside group's scores are significant or not.

#### **4.3 LEVEL OF SIGNIFICANCE**

The data collected from pre-test and post-test experiments were subjected to statistical analysis. Analysis of Covariance (ANCOVA) used to find out significant differences between groups on selected variables with 5% level of significance.

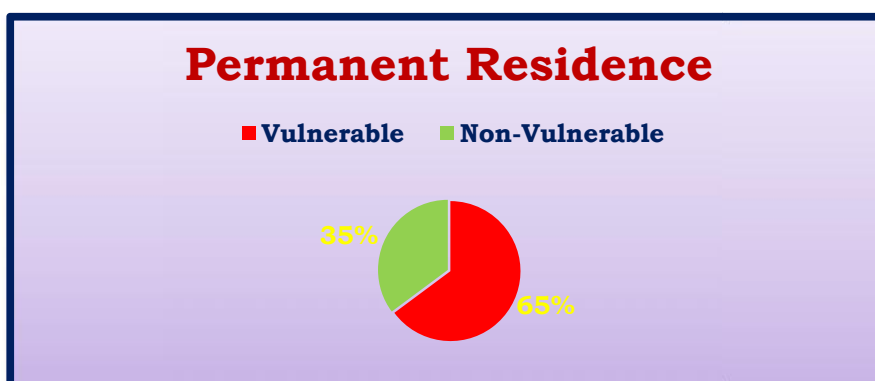
#### 4.4 RESULTS ON PHYSICAL AND SOCIAL VULNERABILITY CHECK-LIST PIE-CHART

Physical and Social Vulnerability have thirty (30) statements of checklist, all have 'Yes' or 'No' type only so that they can answer either 'Yes' or 'No'. Checklist has First fifteen (1-15) as Physical Vulnerability and last fifteen (16-30) as Social Vulnerability.

Status Analysis conducted for One Thousand and Seventeen Coastal Area Children (1017) collected data were recorded and analyzed with pie chart for each checklist from One to Thirty (1-30).

##### CHECKLIST No. 1

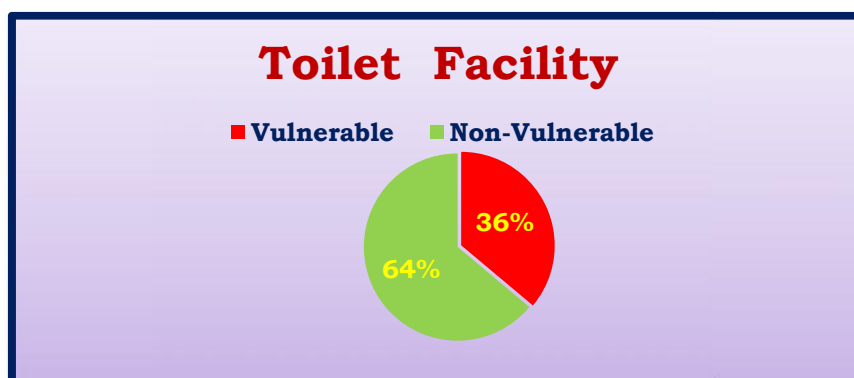
Figure - 2



The above displayed pie-chart checklist no.1 clearly indicated that 65% of Coastal Area Children were Vulnerable and 35% were Non-Vulnerable in permanent residence.

**CHECKLIST No. 2**

Figure - 3



The above displayed pie-chart checklist no.2 clearly indicated that 36% of Coastal Area Children were Vulnerable and 64% were Non-Vulnerable in a toilet facility at their home.

**CHECKLIST No. 3**

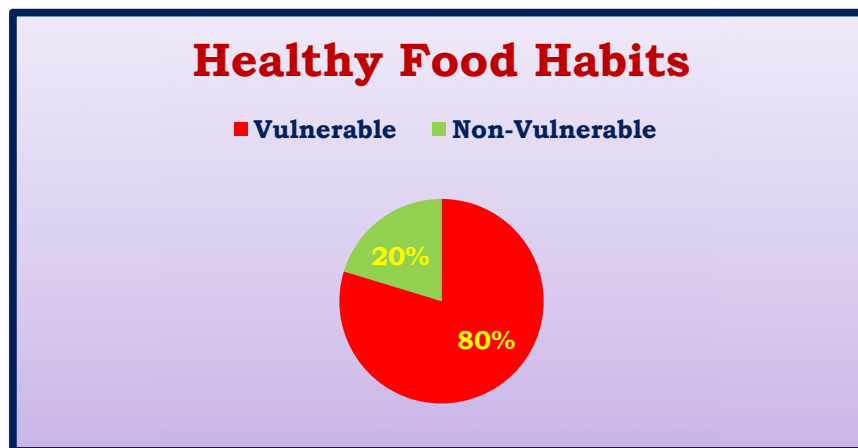
Figure - 4



The above displayed pie-chart checklist no.3 clearly indicated that 74% of Coastal Area Children were Vulnerable and 26% were Non-Vulnerable in washing hands before taking food.

**CHECKLIST No. 4**

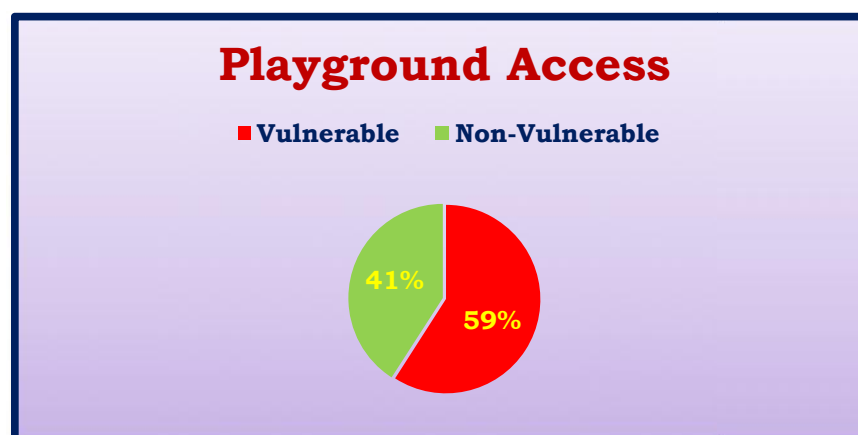
Figure - 5



The above displayed pie-chart checklist no.4 clearly indicated that 80% of Coastal Area Children were Vulnerable and 20% were Non-Vulnerable in healthy food habits.

**CHECKLIST No. 5**

Figure - 6



The above displayed pie-chart checklist no.5 clearly indicated that 59% of Coastal Area Children were Vulnerable and 41% were Non-Vulnerable in access to playground.

**CHECKLIST No. 6**

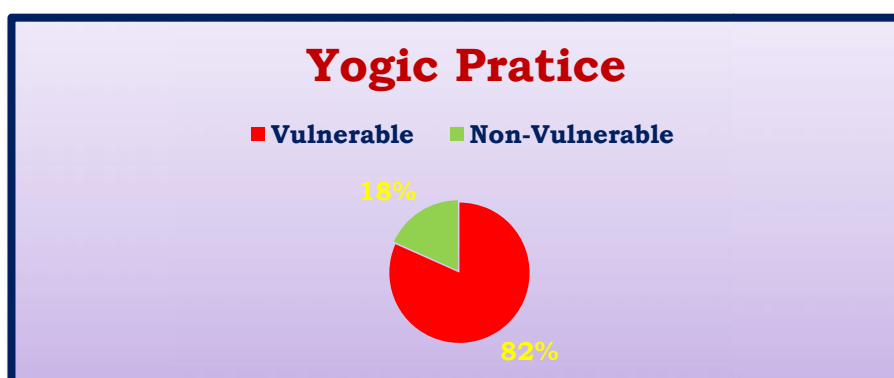
Figure - 7



The above displayed pie-chart checklist no.6 clearly indicated that 40% of Coastal Area Children were Vulnerable and 60% were Non-Vulnerable for Play/Exercise.

**CHECKLIST No. 7**

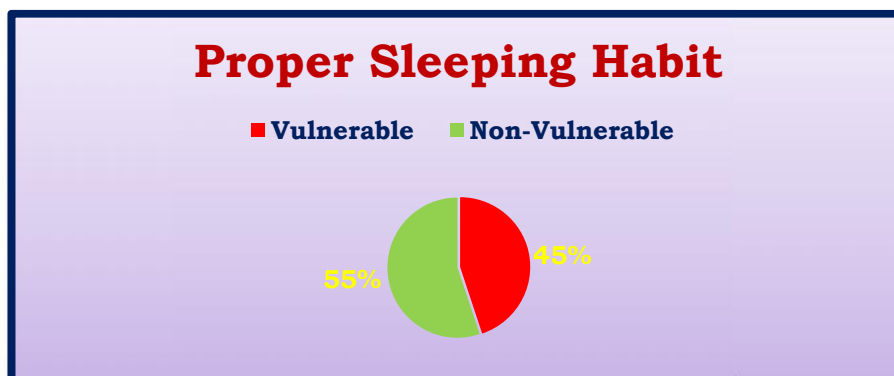
Figure - 8



The above displayed pie-chart checklist no.7 clearly indicated that 82% of Coastal Area Children were Vulnerable and 18% were Non-Vulnerable in yogic practice.

**CHECKLIST No. 8**

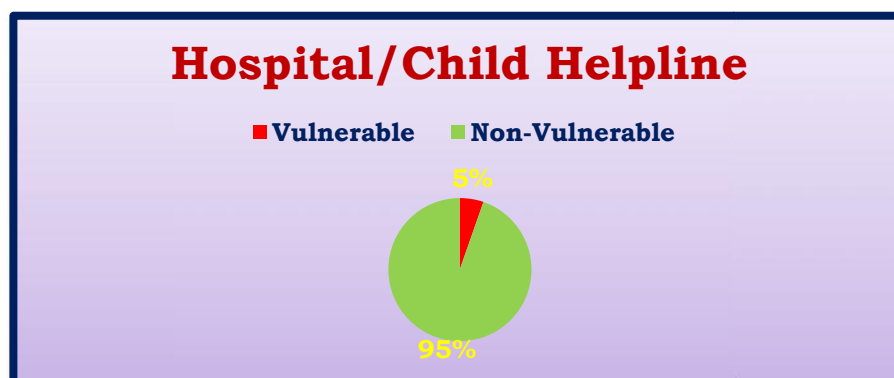
Figure - 9



The above displayed pie-chart checklist no.8 clearly indicated that 45% of Coastal Area Children were Vulnerable and 55% were Non-Vulnerable in proper sleeping habit.

**CHECKLIST No. 9**

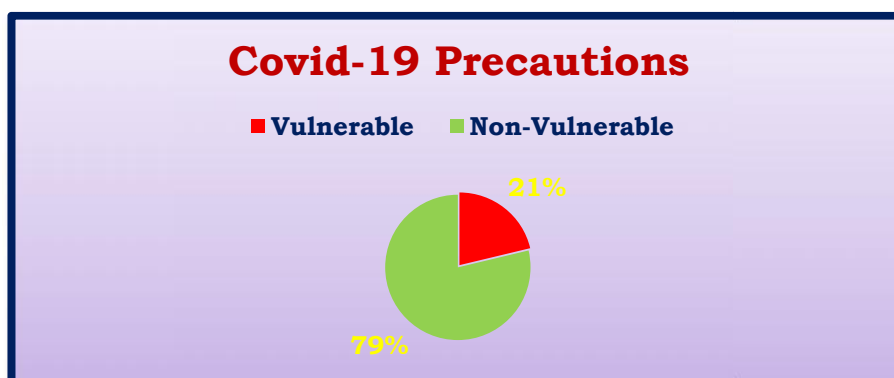
Figure - 10



The above displayed pie-chart checklist no.9 clearly indicated that 5% of Coastal Area Children were Vulnerable and 95% were Non-Vulnerable for access to hospital/ Child helpline number.

**CHECKLIST No. 10**

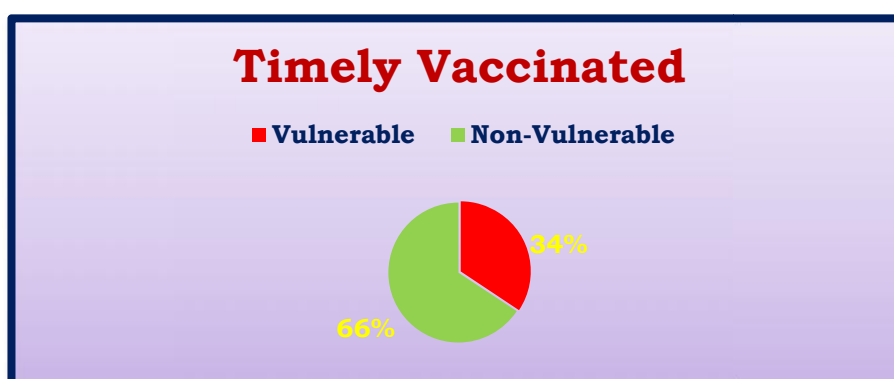
Figure - 11



The above displayed pie-chart checklist no.10 clearly indicated that 21% of Coastal Area Children were Vulnerable and 72% were Non-Vulnerable for Covid-19 Precautionary measures.

**CHECKLIST No. 11**

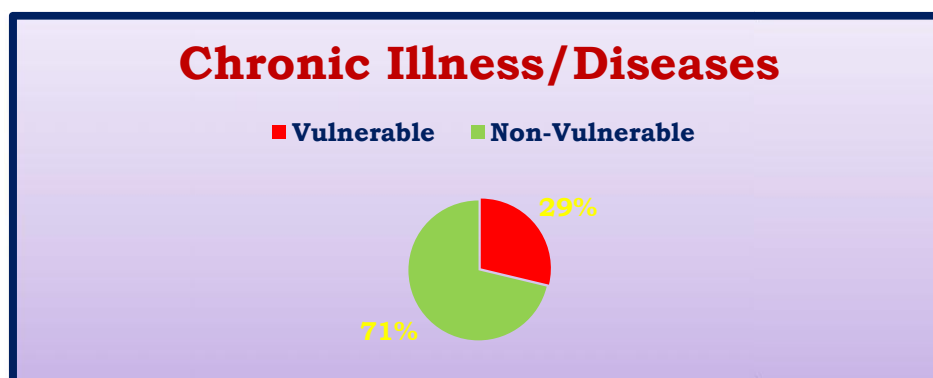
Figure - 12



The above displayed pie-chart checklist no.11 clearly indicated that 34% of Coastal Area Children were Vulnerable and 66% were Non-Vulnerable .for timely vaccination.

**CHECKLIST No. 12**

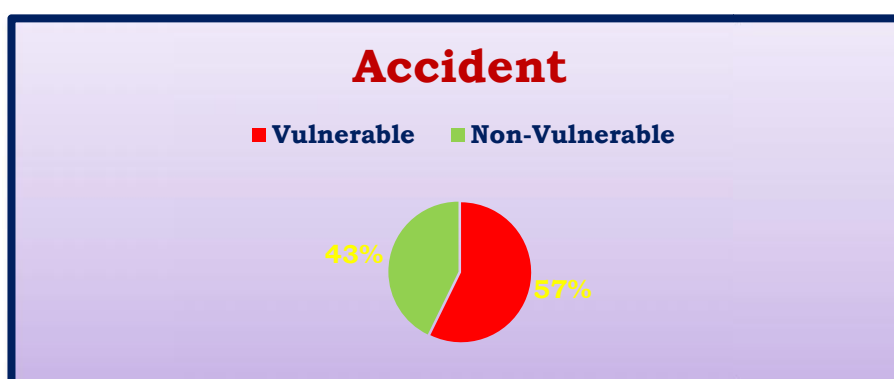
Figure - 13



The above displayed pie-chart checklist no.12 clearly indicated that 29% of Coastal Area Children were Vulnerable and 71% were Non-Vulnerable for chronic illness / diseases.

**CHECKLIST No. 13**

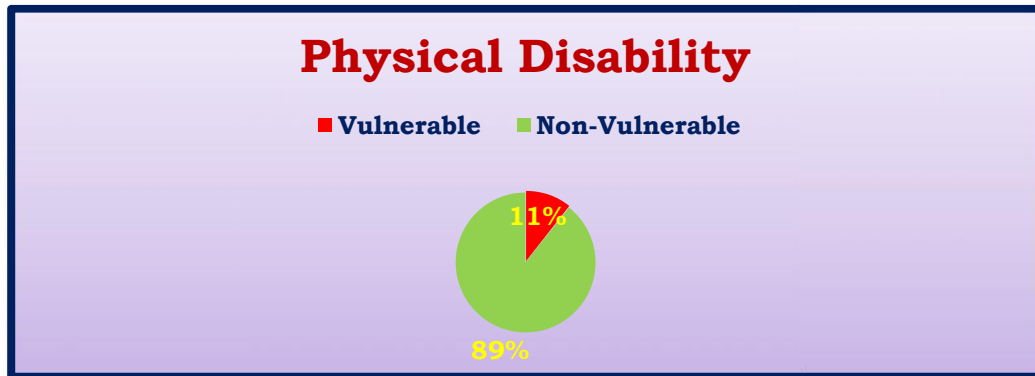
Figure - 14



The above displayed pie-chart checklist no.13 clearly indicated that 57% of Coastal Area Children were Vulnerable and 43% were Non-Vulnerable for meet an accident in the pasts.

**CHECKLIST No. 14**

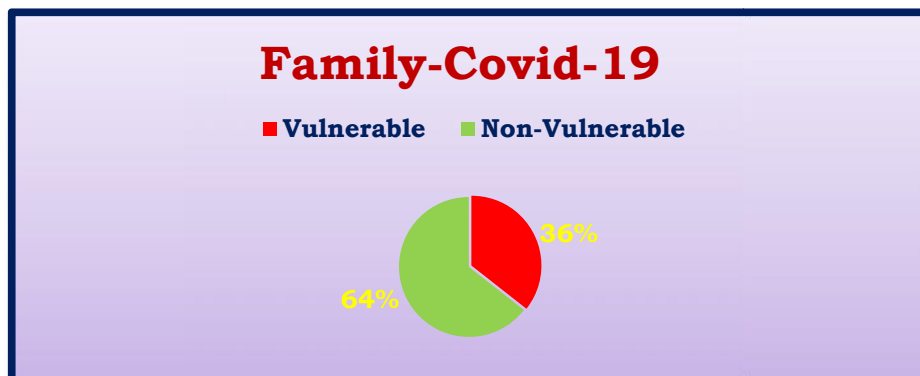
Figure - 15



The above displayed pie-chart checklist no.14 clearly indicated that 82% of Coastal Area Children were Vulnerable and 11% were Non-Vulnerable for Physical Disability / reformative in their body.

**CHECKLIST No. 15**

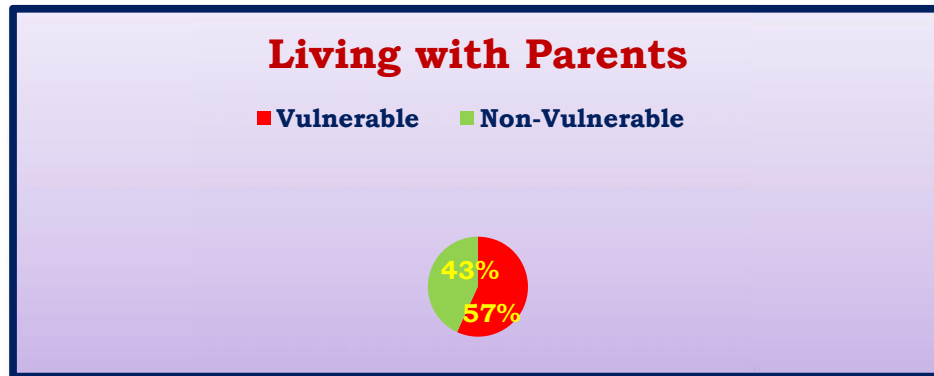
Figure - 16



The above displayed pie-chart checklist no. 36 clearly indicated that 82% of Coastal Area Children were Vulnerable and 64% were Non-Vulnerable for their family member affected by Covid-19.

**CHECKLIST No. 16**

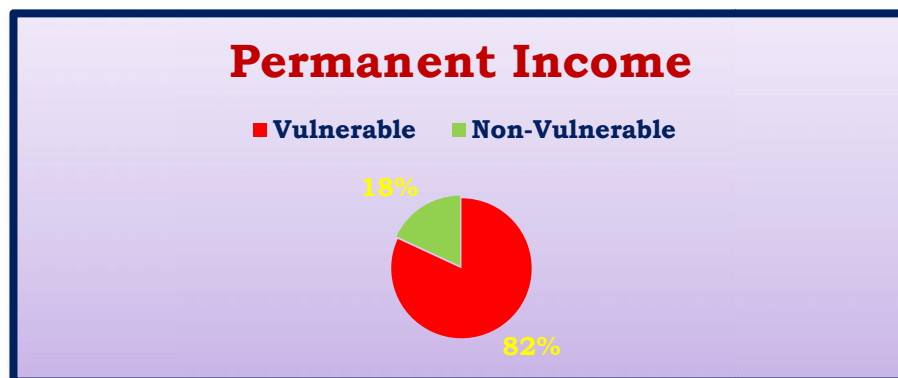
Figure - 17



The above displayed pie-chart checklist no.16 clearly indicated that 57% of Coastal Area Children were Vulnerable and 43% were Non-Vulnerable for living with parents.

**CHECKLIST No. 17**

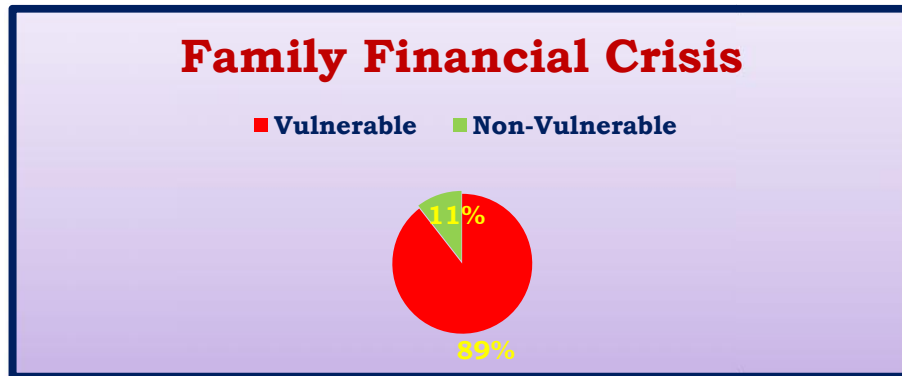
Figure - 18



The above displayed pie-chart checklist no.17 clearly indicated that 82% of Coastal Area Children were Vulnerable and 18% were Non-Vulnerable for permanent income of their parents.

**CHECKLIST No. 18**

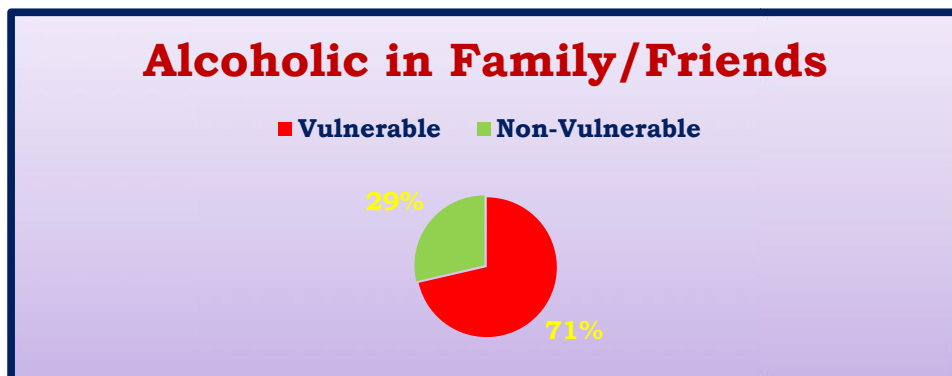
Figure - 19



The above displayed pie-chart checklist no.18 clearly indicated that 89% of Coastal Area Children were Vulnerable and 11% were Non-Vulnerable for their families financial crisis.

**CHECKLIST No. 19**

Figure - 20



The above displayed pie-chart checklist no.19 clearly indicated that 71% of Coastal Area Children were Vulnerable and 29% were Non-Vulnerable .for alcoholic person in family/friends.

**CHECKLIST No. 20**

Figure - 21



The above displayed pie-chart checklist no.20 clearly indicated that 60% of Coastal Area Children were Non-Vulnerable and 40% were Vulnerable for had good friends.

**CHECKLIST No. 21**

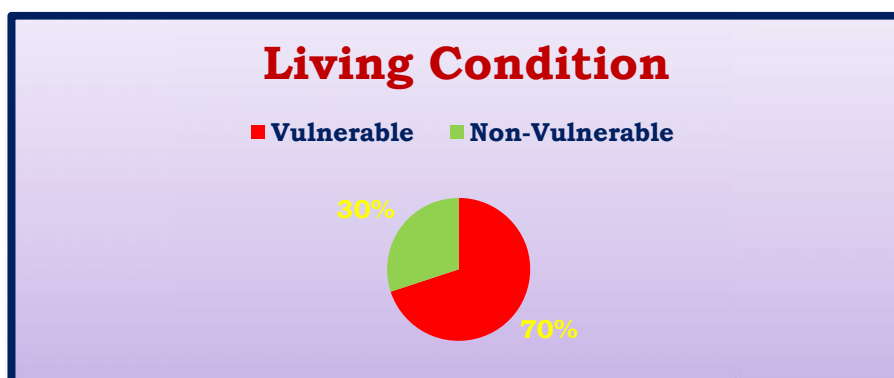
Figure - 22



The above displayed pie-chart checklist no.21 clearly indicated that 40% of Coastal Area Children were Vulnerable and 60% were Non-Vulnerable in yogie .for recreational facility.

**CHECKLIST No. 22**

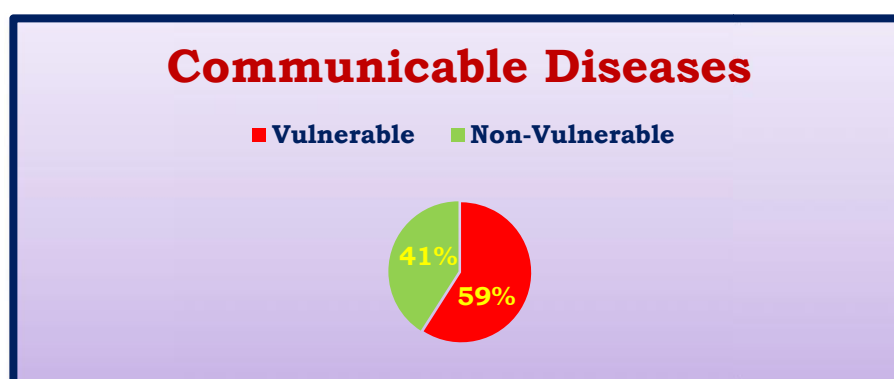
Figure - 23



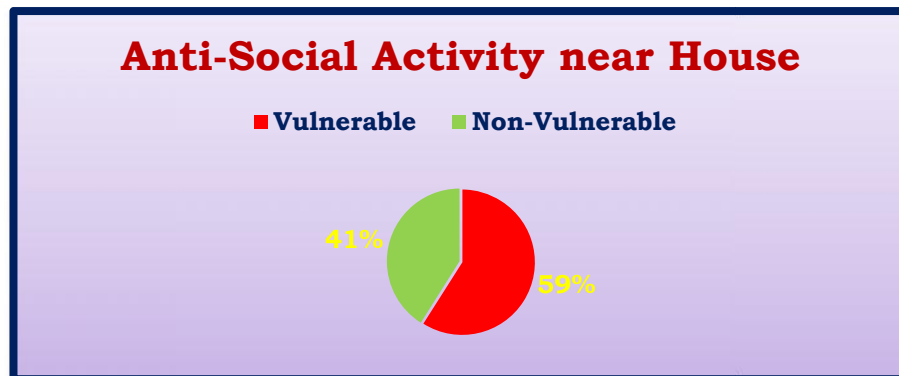
The above displayed pie-chart checklist no.22 clearly indicated that 70% of Coastal Area Children were Vulnerable and 30% were Non-Vulnerable for their present living condition.

**CHECKLIST No. 23**

Figure - 24



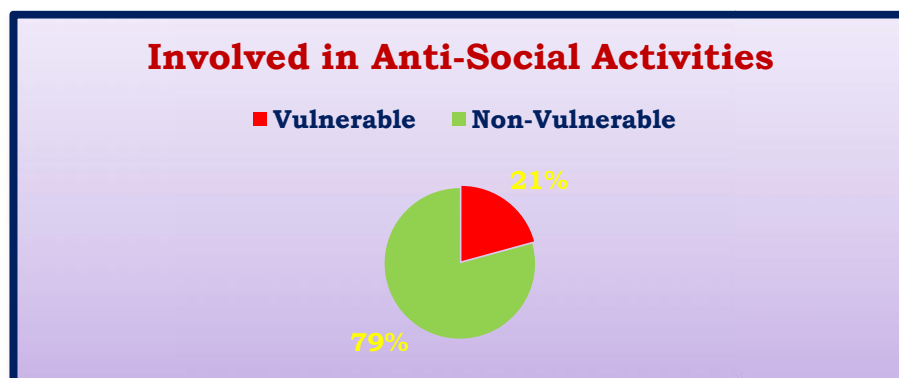
The above displayed pie-chart checklist no.23 clearly indicated that 59% of Coastal Area Children were Vulnerable and 41% were Non-Vulnerable for free from hazardous communicable diseases.

**CHECKLIST No. 24**

The above displayed pie-chart checklist no.24 clearly indicated that 59% of Coastal Area Children were Vulnerable and 41% were Non-Vulnerable .for anti-social activity around their house.

**CHECKLIST No. 25**

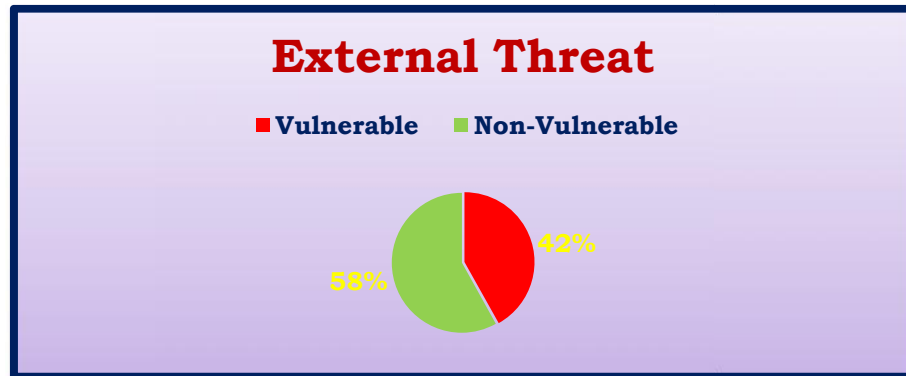
Figure - 25



The above displayed pie-chart checklist no.25 clearly indicated that 21% of Coastal Area Children were Vulnerable and 79% were Non-Vulnerable for anti-social activity involvement.

**CHECKLIST No. 26**

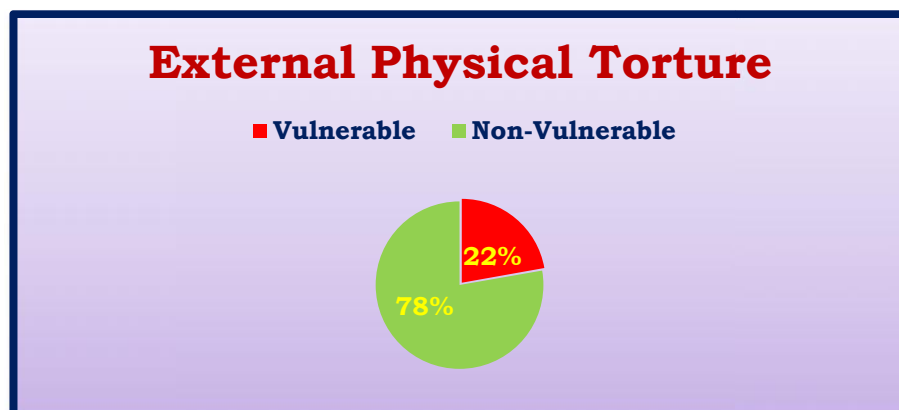
Figure - 26



The above displayed pie-chart checklist no.26 clearly indicated that 42% of Coastal Area Children were Vulnerable and 58% were Non-Vulnerable for threat from external persons/other sources.

**CHECKLIST No. 27**

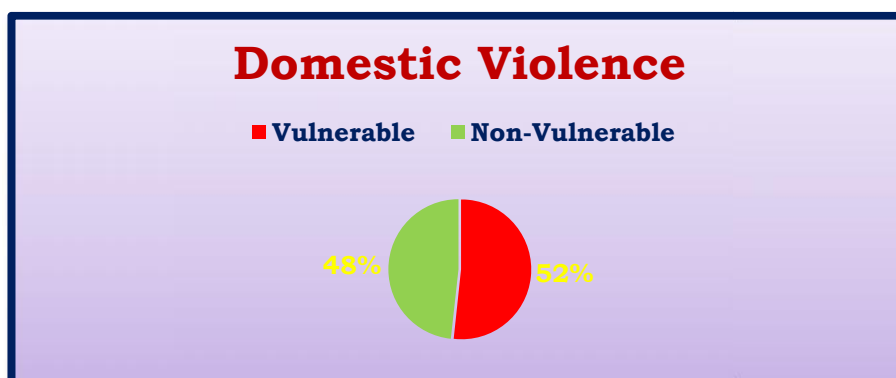
Figure - 28



The above displayed pie-chart checklist no.27 clearly indicated that 22% of Coastal Area Children were Vulnerable and 78% were Non-Vulnerable for faced physical torture from external forces.

**CHECKLIST No. 28**

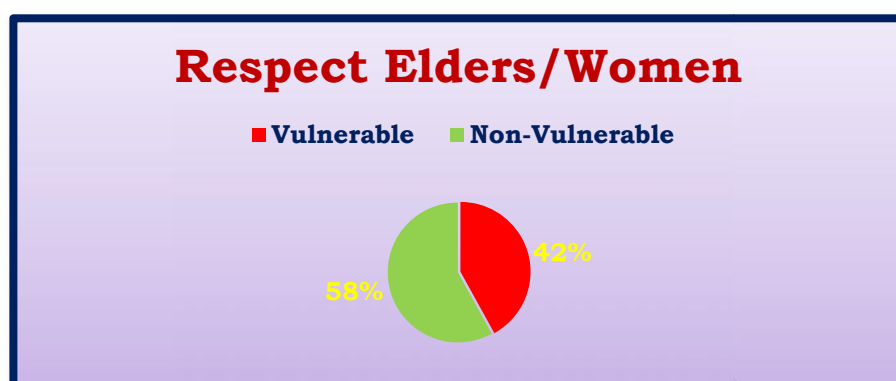
Figure - 29



The above displayed pie-chart checklist no.28 clearly indicated that 52% of Coastal Area Children were Vulnerable and 48% were Non-Vulnerable for domestic violence or torture from their family.

**CHECKLIST No. 29**

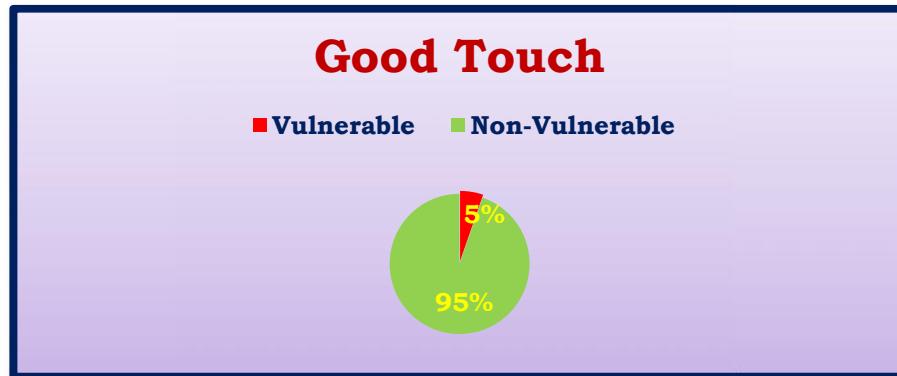
Figure - 30



The above displayed pie-chart checklist no.29 clearly indicated that 42% of Coastal Area Children were Vulnerable and 58% were Non-Vulnerable .for giving respect to elders/women.

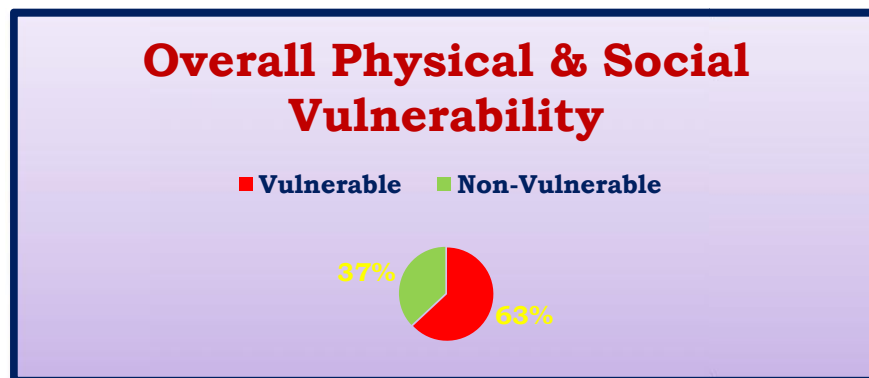
**CHECKLIST No. 30**

Figure - 31



The above displayed pie-chart checklist no.30 clearly indicated that 5% of Coastal Area Children were Vulnerable and 95% were Non-Vulnerable for difference between good touch and bad touch.

Figure - 32



The above displayed pie-chart clearly indicated that 63% of Coastal Area Children were living their live hood in Physical & Social Vulnerability and 37% were Non-Vulnerable.

From this assessed status analysis of coastal area children, 63% were physically and socially vulnerable among them 75 children randomly selected for the experiment training. They were assigned into three equal groups namely Group-I Physical Education Programme with Hatha Yoga Practices (PEPWHYP), Group-II Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Group-III Non-Experiment Group (NEG).

#### **4.5 COMPUTATION OF ANALYSIS OF COVARIANCE AND POST-HOC TEST**

The following tables illustrate the statistical results on physical education programme with and without hatha yoga practices on selected health-related fitness and psychosocial variables among coastal area children.

#### 4.5.1 Results on Health-Related Physical Fitness Variables

##### 4.5.1.1 Result on Cardiovascular Endurance

**TABLE – 4.1**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON CARDIOVASCULAR ENDURANCE FOR**  
**EXPERIMENTAL GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Meters)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	Df	Mean Square	“F”
Pre	1486.00	1480.00	1482.00	BG	466.66	2	233.33	0.138
				WG	122000.00	72	1694.44	
Post	1592.00	1533.60	1480.80	BG	154698.66	2	77349.33	43.45*
				WG	128160.00	72	1780.00	
Adjusted	1589.37	1535.70	1481.32	BG	145684.55	2	72842.27	99.05*
				WG	52209.28	71	735.34	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (2,72) was 3.12 and df (2, 71) was 3.12 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Cardiovascular Endurance. The attained pre-test ‘F’ value of 0.138 was established to be non-significant as it was lesser than the compulsory ‘F’ value of 3.12.

Further, the ‘F’ assessment of 43.45 and 99.05 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required ‘F’ value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on cardiovascular endurance and the pre-test means of experimental physical education programme with hatha yoga practices (PEPWHYP), experimental physical education programme without hatha yoga practices

(PEPWOHYP) and Non-Experiment Group (NEG) were 1486.00, 1480.00 and 1482.00 correspondingly. The acquired F value was 0.138. As a result, it was lesser than the table value of 3.12; it confirmed that there was no significant change.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 1592.00, 1533.60 and 1480.80 correspondingly. The acquired F value was 43.45. As a result, it was higher than the table value of 3.13; it confirmed that there was a greater significant change due to the experiment training among coastal area children.

The adjusted post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 1589.37, 1535.70 and 1481.32 correspondingly. The attained F value was 99.05. As a result, it was higher than the table value of 3.12; it confirmed that there was a greater significant change due to the experiment training among coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in below Table 4.2.

**TABLE – 4.2**  
**SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES –**  
**CARDIOVASCULAR ENDURANCE**  
**(Scores in Meters)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
1589.37	1535.70		<b>53.67*</b>	<b>19.15</b>
1589.37		1481.32	<b>108.1*</b>	
	1535.70	1481.32	<b>54.38*</b>	

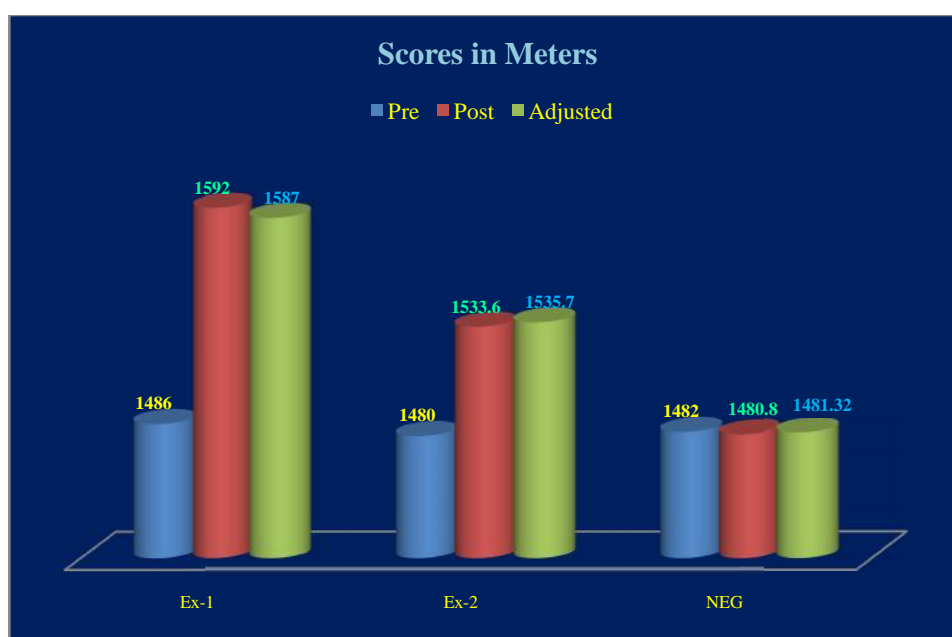
**\*Significant at 0.05 level of confidence**

The above table clearly depicts the difference in the paired comparison as the 53.67, 108.1 and 54.38 were greater than the confidence interval of 19.15.

The comparisons in between the groups displayed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 53.67; Physical Education Programme with Hatha Yoga Practices (IPEPWHYP) and Non-Experiment Group (NEG) was 108.1; and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 54.38 at 0.05 level of confidence with the confidence interval value of 19.15.

The pre-test, post-test and adjusted post-test means were displayed through bar outline for better comprehension of the after effects of the investigation on the factor of cardiovascular endurance in the figure 33.

**FIGURE - 33**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON CARDIOVASCULAR ENDURANCE**



#### **4.5.1.1.1 DISCUSSION ON THE FINDINGS OF CARDIOVASCULAR ENDURANCE**

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on cardiovascular endurance and all the training groups were better than the non-experiment group. Further, it was proved

that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the cardiovascular endurance and this research also corroborates with Das, Konai, & Ghosh, (2021) observed the relationship between motor fitness and motor creativity of different groups of Rhythmic Activity, and also Seabra et al. (2020) suggested that a six-month school-based soccer interference program represents an effective strategy to reduce cardiovascular and metabolic risk factors in overweight children prepared to participate in the soccer program.

#### 4.5.1.2 Result on Muscular Strength

**TABLE – 4.3**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON MUSCULAR STRENGTH FOR**  
**EXPERIMENTAL GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Numbers)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	2.72	2.88	2.88	BG	0.43	2	0.21	0.50
				WG	30.32	72	0.42	
Post	5.64	5.00	3.60	BG	54.43	2	27.21	<b>49.28*</b>
				WG	39.76	72	0.55	
Adjusted	5.71	4.96	3.56	BG	59.16	2	29.58	<b>84.60*</b>
				WG	24.83	71	0.35	

\*significant at 0.05 level of confidence. (Table value compulsory for significant at 0.05 level of confidence with df (2,72) was 3.12 and df (2, 71) was 3.12 respectively).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Muscular Strength. The computed attained pre-test 'F' value of 0.50 was found to be non-significant as it was lesser than the required 'F' value of 3.12.

Further, the 'F' value of 49.28 and 84.60 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required 'F' value of 3.12 and 3.13 respectively.

The analysis of covariance (ANCOVA) on muscular strength and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP), physical education programme without hatha yoga practices (PEPWOHYP) and experiment Group (NEG) were 2.72, 2.88 and 2.88 correspondingly. The achieved F value was 0.50. As a result, it was lower than the Table value of 3.12; it was established that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 5.64, 5.00 and 3.60 respectively. The achieved F value was 49.28. As a result, it was superior to the table value of 3.12; it was established that there were significant changes between the post-test means of coastal area children.

The adjusted post-test means experiment training group-I of physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 5.71, 4.96 and 3.56 correspondingly. The attained F value was 84.60. As a result, it was superior to the table assessment of 3.13; it confirmed that there were significant changes between the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in following Table 4.4.

**TABLE – 4.4**  
**SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES –**  
**MUSCULAR STRENGTH**  
**(Scores in Numbers)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
5.71	4.96		<b>0.75*</b>	<b>0.42</b>
5.71		3.56	<b>2.15*</b>	
	4.96	3.56	<b>1.40*</b>	

**\*Significant at 0.05 level of confidence**

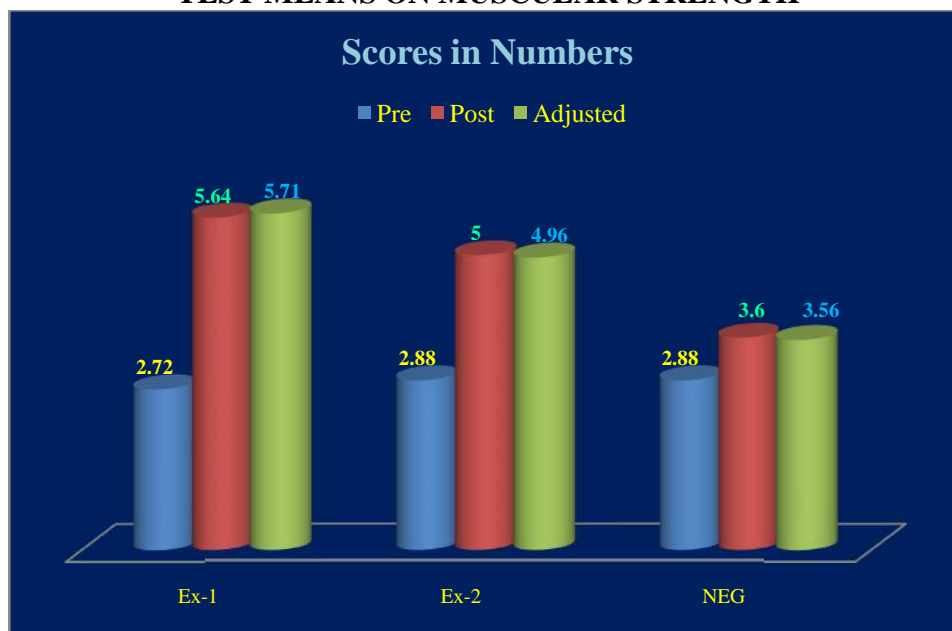
The above table clearly depicts the difference in the paired comparison as the 0.75, 2.15 and 1.40 were greater than the confidence interval of 0.42.

The comparisons showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha

Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 0.75; Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 2.15; and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 54.38 at 0.05 level of confidence with the confidence interval value of 1.40.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the impacts of the examination on the factor of muscular strength in the accompanying figure 34.

**FIGURE - 34**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON MUSCULAR STRENGTH**



#### **4.5.1.2.1 DISCUSSION ON THE FINDINGS OF MUSCULAR STRENGTH**

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had revealed significant improvement on muscular strength in the two training groups were better than the Non-Experiment group. Further, it was proved that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the muscular strength . This research also corroborates with Cabeo, & Lopez, (2020) proved that muscle strength can be a determining factor in the perception of body image of children. It is suggested to bring out involvement programs with the goal of improving strength, as this will have optimistic effects on the body image. Further, Burns, & Brusseau, (2017) explained that Muscular strength has a relevant role in attenuating the association between physical idleness and metabolic danger in children; a further, advantage was identified in children with great physical activity and great muscular strength”.

#### 4.5.1.3 Result on Muscular Endurance

**TABLE – 4.5**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON MUSCULAR ENDURANCE FOR**  
**EXPERIMENTAL GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Numbers)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	Df	Mean Square	“F”
Pre	20.28	20.32	20.48	BG	0.56	2	0.28	0.11
				WG	178.72	72	2.48	
Post	25.72	24.44	20.64	BG	349.04	2	174.52	<b>64.45*</b>
				WG	194.96	72	2.70	
Adjusted	25.78	24.47	20.55	BG	369.09	2	184.54	<b>138.14*</b>
				WG	94.85	71	1.33	

\*significant at 0.05 level of confidence. (Table value mandatory for significant at 0.05 level of confidence with df (2,72) was 3.22 and df (2, 71) was 3.13 respectively).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Muscular Endurance. The achieved pre-test ‘F’ assessment of 0.11 was found to be non-significant as it was lesser than the required ‘F’ value of 3.12.

Further, the ‘F’ value of 64.45 and 138.14 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required ‘F’ value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on muscular endurance and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP), physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 20.28, 20.32 and 20.48 correspondingly. The attained F

value was 0.11. As a result, it was lower than the Table value of 3.12; it confirmed that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 25.72, 24.44 and 20.64 correspondingly. The attained F assessment was 64.45. As a result, it was higher than the table value of 3.12; it confirmed that there were greater significant changes among the post-test means of coastal area children.

The adjusted post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 25.78, 24.47 and 20.55 correspondingly. The attained F value was 138.14. As a result, it was higher than the table value of 3.13; it confirmed that there were significant changes among the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are demonstrated in subsequent Table 4.6.

**TABLE – 4.6**  
**SCHEFFE’S CONFIDENCE INTERVAL TEST SCORES –**  
**MUSCULAR ENDURANCE**  
**(Scores in Numbers)**

<b>Ex-I</b> <b>PEPWHYP</b>	<b>Ex – 2</b> <b>PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
25.78	24.47		<b>1.31*</b>	<b>0.81</b>
25.78		20.55	<b>5.23*</b>	
	24.47	20.55	<b>3.92*</b>	

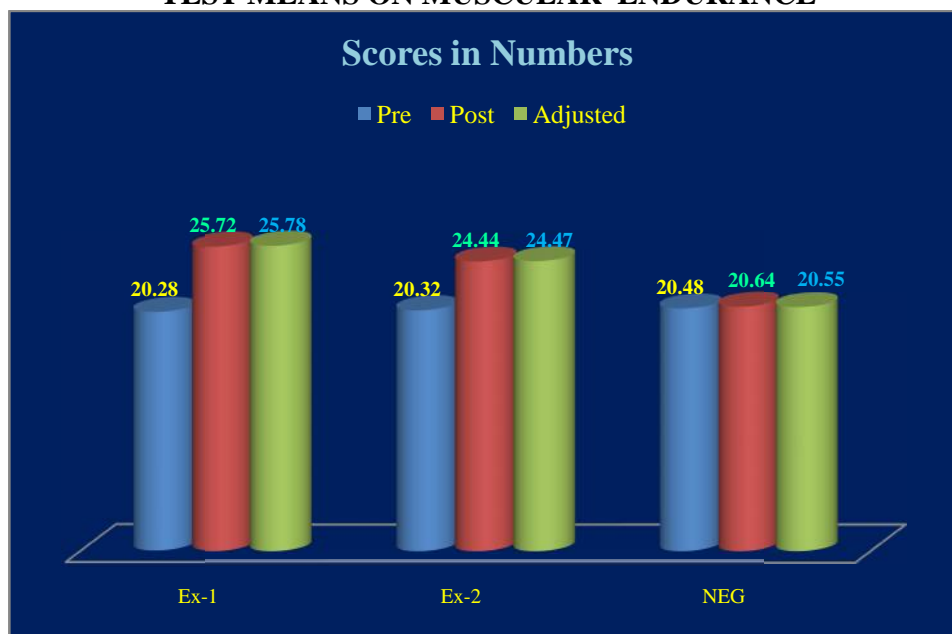
**\*Significant at 0.05 level of confidence**

The above table clearly depicts the difference in the paired comparison as the 1.31, 5.23 and 3.92 were greater than the confidence interval of 0.81.

The comparisons showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 1.31; Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 5.23; and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 3.92 at 0.05 level of confidence with the confidence interval value of 0.81.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the after effects of the investigation on the factor of muscular endurance in following figure-35.

**FIGURE-35**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON MUSCULAR ENDURANCE**



#### 4.5.1.3.1 DISCUSSION ON THE FINDINGS OF MUSCULAR ENDURANCE

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on muscular endurance and all the training groups were better than the non-experiment group. Further, it was proved that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the muscular endurance. This research also corroborates with Chang, Tsai, Lee, & Liang, (2020) dynamic core group showed significant improvements in all

outcome measurements compared with the general physical-exercise training group. These statistics provide a reference for integrating further core-stability exercises in the warm-up routine of physical education classes in school-aged children in the and also Blagojevic et al. (2017) proved that the circuit training program made significantly greater gains compared to the control group on bent-arm hang, sit-ups and sit and reach.

#### 4.5.1.4 Result on Flexibility

**TABLE – 4.7**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON FLEXIBILITY FOR EXPERIMENTAL**  
**GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Centimetres)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	14.36	14.40	14.36	BG	0.02	2	0.01	0.01
				WG	89.52	72	1.24	
Post	18.08	16.60	14.88	BG	128.24	2	64.12	<b>54.64*</b>
				WG	84.48	72	1.17	
Adjusted	18.09	16.57	14.89	BG	128.13	2	64.06	<b>155.88*</b>
				WG	29.17	71	0.41	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (2,72) was 3.22 and df (2, 71) was 3.13correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Flexibility. The acquired pre-test ‘F’ value of 0.01 was found to be non-significant as it was lesser than the required ‘F’ value of 3.12.

Further, the 'F' value of 54.64 and 155.88 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required 'F' value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on flexibility and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP), physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 14.36, 14.40 and 14.36 correspondingly. The attained F value was 0.01. As a result, it was lower than the Table value of 3.12; it confirmed that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 18.08, 16.60 and 14.88 correspondingly. The succeeded F assessment was 54.64, it was higher than the table value of 3.12; it was confirmed that there were greater significant changes among the post-test means of coastal area children.

The adjusted post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-

Experiment Group (NEG) were 18.09, 16.57 and 14.89 correspondingly. The achieved F assessment was 155.88. As a result, it was higher than the table value of 3.13; it confirmed that there were significant changes among the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in following Table 4.8.

**TABLE – 4.8**  
**SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES - FLEXIBILITY**  
**(Scores in Centimetres)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
18.09	16.57		<b>1.52*</b>	<b>0.44</b>
18.09		14.89	<b>3.20*</b>	
	16.57	14.89	<b>1.68*</b>	

**\*Significant at 0.05 level of confidence**

The above table clearly depicts the difference in the paired comparison as the 1.52, 3.20 and 1.68 were greater than the confidence interval of 0.44.

The comparisons showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 1.52; Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 3.20; and Physical

Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 1.68 at 0.05 level of confidence with the confidence interval value of 0.44.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the after effects of the investigation on the factor of flexibility in following figure 36.

**FIGURE - 36**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON FLEXIBILITY**



#### **4.5.1.4.1 Discussion on the Findings of Flexibility**

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on flexibility and all the training groups were better than the Non Non-Experiment group (NEG). Further, it was proved that Physical Education Programme with Hatha Yoga Practices (IPEPWHYP) better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the flexibility. This research also corroborates with Chang et al. (2020) proved that the differences in posterior chain flexibility and trunk mobility between school-age children who underwent Pilates Mat work exercises and the control. However, children who participated in the exercise program showed improvement in some results of flexibility and also Sivanandha et al. (2021) study was found that there was a significant improvement on muscular strength and flexibility for bear walk and frog jump group when compared with the non-training group.

## 4.5.2 Results on Psychosocial Variables

### 4.5.2.1 Result on Quality of Life

**TABLE – 4.9**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON QUALITY OF LIFE FOR EXPERIMENTAL**  
**GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Numbers)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	50.48	50.84	51.16	BG	5.78	2	2.89	1.78
				WG	116.96	72	1.62	
Post	56.00	54.84	51.00	BG	342.42	2	171.21	<b>67.97*</b>
				WG	181.36	72	2.51	
Adjusted	56.18	54.83	50.82	BG	372.31	2	186.15	<b>89.23*</b>
				WG	148.11	71	2.08	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (2,72) was 3.22 and df (2, 71) was 3.13 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Quality of Life. The attained pre-test ‘F’ value of 1.78 was found to be non-significant as it was lesser than the required ‘F’ value of 3.12.

Further, the ‘F’ value of 67.97 and 89.23 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required ‘F’ value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on quality of life (QOF) and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP),

physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 50.48, 50.84 and 51.16 correspondingly. The achieved F assessment was 1.78. As a result, it was lower than the Table value of 3.12; it confirmed that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 56.00, 54.84 and 51.00 correspondingly. The achieved F assessment was 67.97. As a result, it was higher than the table value of 3.12; it confirmed that there were significant changes among the post-test means of coastal area children.

The adjusted post-test means experiment training group-I of physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 56.18, 54.83 and 50.82 correspondingly. The achieved F assessment was 89.23. As a result, it was higher than the table value of 3.13; it confirmed that there were greater significant changes among the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in the following Table 4.10.

**TABLE – 4.10**  
**SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES - QUALITY OF LIFE**  
**(Scores in Numbers)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
56.18	54.83		<b>1.35*</b>	1.01
56.18		50.82	<b>5.36*</b>	
	54.83	50.82	<b>4.01*</b>	

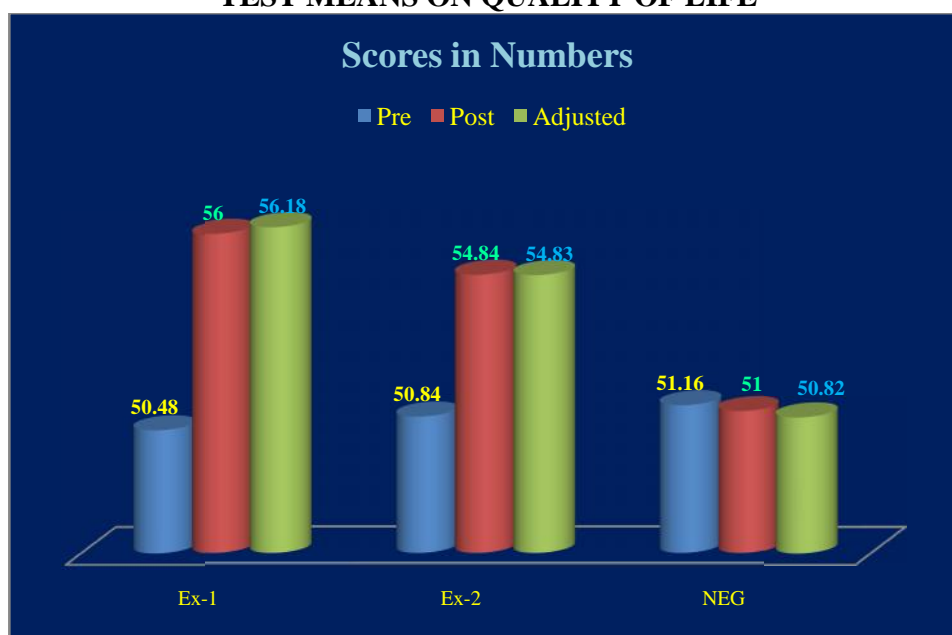
**\*Significant at 0.05 level of confidence**

The above table clearly depicts the difference in the paired comparison as the 1.35, 5.36 and 4.01 were greater than the confidence interval of 1.01.

The comparison showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and of Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 1.35; Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 5.36; and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 4.01 at 0.05 level of confidence with the confidence interval value of 1.01.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the after-effects of the investigation on the factor of quality of life in the following figure 37.

**FIGURE - 37**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON QUALITY OF LIFE**



#### 4.5.2.1.1 DISCUSSION ON THE FINDINGS OF QUALITY OF LIFE

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on quality of life and all the training groups were better than the Non-Experiment group (NEG). Additionally, it was verified that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) was better

than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the quality of life. This research also corroborates with Karras et al. (2019) proved that development coordination disorder appears to contribute to lower perceived health-related quality of life. These findings update therapeutic targets for children with development coordination disorder, beyond motor skill intervention. and also Kouzegaran et al. (2018) proved that children with asthma have a suggestively lower quality of life associated with healthy children. And also, in investigating the different traits of quality of life, these children had a poorer quality of life in physical performance, emotional performance, and performance at school, and were at the level as that of healthy children only in social performance.

#### 4.5.2.2 Result on Self-Esteem

**TABLE – 4.11**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON SELF-ESTEEM FOR EXPERIMENTAL**  
**GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Numbers)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	8.80	9.12	8.68	BG	2.58	2	1.29	1.78
				WG	52.08	72	0.72	
Post	13.16	11.36	9.04	BG	213.30	2	106.65	<b>98.34*</b>
				WG	78.08	72	1.08	
Adjusted	13.20	11.17	9.18	BG	202.39	2	101.19	<b>147.18*</b>
				WG	48.81	71	0.68	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (2,72) was 3.22 and df (2, 71) was 3.13correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom.

The above table depicts the comparison of experiment groups and non-experiment group on Self-Esteem. The attained pre-test 'F' value of 0.178 was found to be non-significant as it was lesser than the required 'F' value of 3.12.

Further, the 'F' value of 98.34 and 147.18 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required 'F' value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on self-esteem and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP), physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 8.80, 9.12 and 8.68 correspondingly. The achieved F assessment was 1.78, it was lower than the table value of 3.12; it confirmed that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experimental group I physical education programme with hatha yoga practices (PEPWHYP), experimental group II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 13.16, 11.36 and 9.04 correspondingly. The achieved F assessment was 98.34. As a result, it was higher than the table value of 3.12; it confirmed that there were significant changes among the post-test means of coastal area children.

The adjusted post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 13.20, 11.17 and 9.18 correspondingly. The attained F value was 147.18. As a result, it was higher than the table value of 3.13; it confirmed that there were significant changes among the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in the following Table 4.12.

**TABLE – 4.12**  
**SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES –SELF-ESTEEM**  
**(Scores in Numbers)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
13.20	11.17		<b>2.03*</b>	<b>0.58</b>
13.20		9.18	<b>4.02*</b>	
	11.17	9.18	<b>1.99*</b>	

**\*Significant at 0.05 level of confidence**

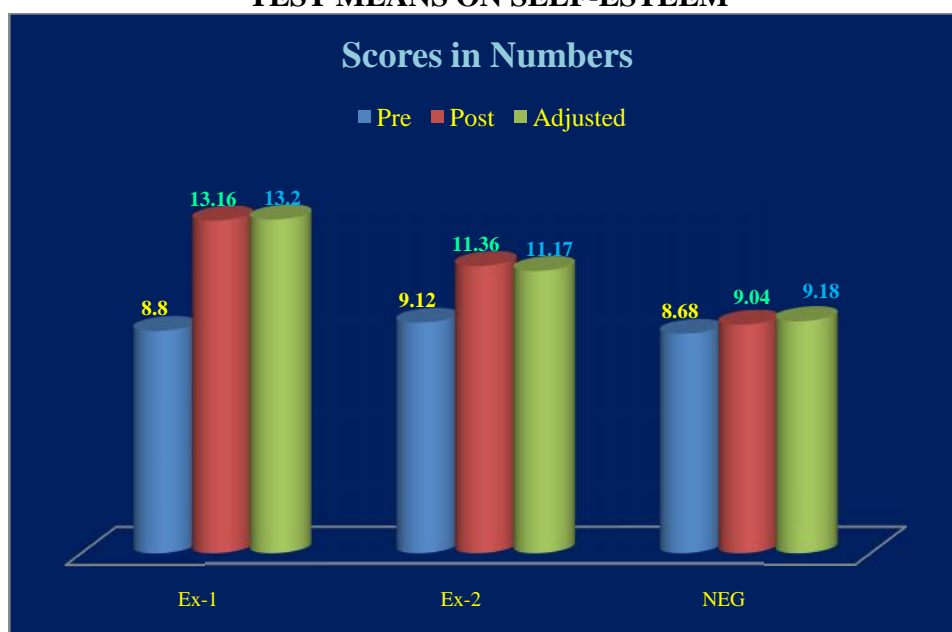
The above table clearly depicts the difference in the paired comparison as the 2.03, 4.02 and 1.99 were greater than the confidence interval of 0.58.

The comparison showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga

Practices (PEPWOHYP) was 2.03, Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 4.02; and of Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 1.99 at 0.05 level of confidence with the confidence interval value of 0.58.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the after effects of the investigation on the factor of quality of life in the following figure 38.

**FIGURE - 38**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON SELF-ESTEEM**



#### **4.5.2.2.1 Discussion on the Findings of Self-Esteem**

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on self-esteem and all the training groups were better than the Non-Experiment group (NEG). Further, it was proved that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving self-esteem. This research also corroborates with Yook et al. (2017) proved that effects of physical activity intervention combining with hatha yoga on psychological characteristics in adolescents improved Self-Esteem ( $F=3.47$ ,  $p=0.49$ ), Resilience and happiness. And also Biddle et al. (2019) proved that physical activity and mental health on children reduce anxiety and improvement in self-esteem. It Improved fitness and physical activity associated with better cognitive health and performance.

#### 4.5.2.3 Result on Depression

**TABLE – 4.13**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON DEPRESSION FOR EXPERIMENTAL**  
**GROUPS AND NON-EXPERIMENTAL GROUP**  
**(Scores in Numbers)**

Test	Ex-I PEPWHYP	Ex – 2 PEPWOHYP	NEG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	27.40	27.12	27.20	BG	1.04	2	0.52	0.41
				WG	90.64	72	1.25	
Post	22.96	24.76	26.84	BG	188.50	2	94.25	74.67
				WG	90.88	72	1.26	
Adjusted	22.84	24.84	26.86	BG	201.45	2	100.72	166.55
				WG	42.93	71	0.605	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (2,72) was 3.22 and df (2, 71) was 3.13 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom

The above table depicts the comparison of experiment groups and non-experiment group on Depression. The attained pre-test ‘F’ value of 0.138 was found to be non-significant as it was lesser than the required ‘F’ value of 3.12.

Further, the ‘F’ value of 43.45 and 99.05 correspondingly for post and adjusted tests were found to be Significant as they were greater than the required ‘F’ value of 3.12 and 3.13 correspondingly.

The analysis of covariance (ANCOVA) on self-esteem and the pre-test means of physical education programme with hatha yoga practices (PEPWHYP), physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment

Group (NEG) were 27.40, 27.12 and 27.20 correspondingly. The attained F value was 0.41, it was lower than the table value of 3.12; it confirmed that there were no significant changes among the pre-test means of coastal area children.

The post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 22.96, 24.76 and 26.84 correspondingly. The attained F value was 74.67, it was higher than the table value of 3.12; it was confirmed that there were significant changes among the post-test means of coastal area children.

The adjusted post-test means of experiment training group-I physical education programme with hatha yoga practices (PEPWHYP), experiment training group-II physical education programme without hatha yoga practices (PEPWOHYP) and Non-Experiment Group (NEG) were 22.84, 24.84 and 26.86 respectively. The achieved F value was 166.55. As a result, it was higher than the table value of 3.13; it was confirmed that there were significant changes among the adjusted post-test means of coastal area children.

Scheffe's mean difference test has been adapted to post hoc analysis. The results are displayed in the following Table 4.14.

**TABLE – 4.14**  
**SCHEFFE’S CONFIDENCE INTERVAL TEST SCORES - DEPRESSION**  
**(Scores in Numbers)**

<b>Ex-I PEPWHYP</b>	<b>Ex – 2 PEPWOHYP</b>	<b>NEG</b>	<b>MD</b>	<b>CI</b>
22.84	24.84		2.00*	<b>0.54</b>
22.84		26.86	4.02*	
	24.84	26.86	2.02*	

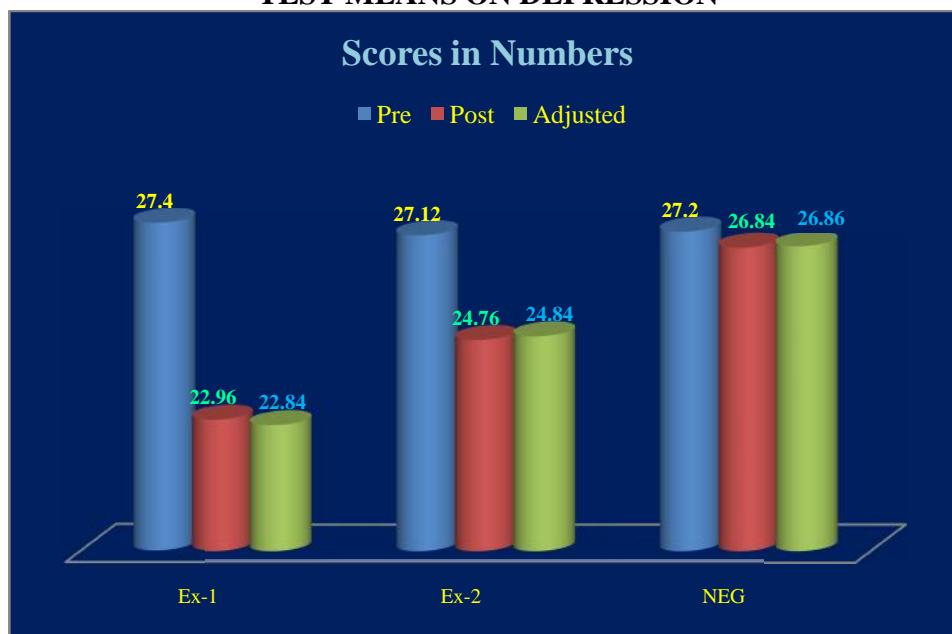
**\*Significant at 0.05 level of confidence**

The above table clearly depicts the difference in the paired comparison as the 2.00, 4.02 and 2.02 were greater than the confidence interval of 0.54.

The comparison showed in the table proved that there existed significant differences between the adjusted means of Physical Education Programme with Hatha Yoga Practices (PEPWHYP) Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) was 2.00; Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Non-Experiment Group (NEG) was 4.02; and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) and Non-Experiment Group (NEG) was 2.02 at 0.05 level of confidence with the confidence interval value of 0.54.

The pre, post and adjusted post-test means were displayed through bar outline for better comprehension of the after effects of the investigation on the factor of quality of life in the following figure 39.

**FIGURE - 39**  
**BAR DIAGRAM SHOWING PRE-TEST POST-TEST AND ADJUSTED POST-TEST MEANS ON DEPRESSION**



#### 4.5.2.3.1 Discussion on the Findings of Depression

The result displayed in the above two tables and graphs indicates that the experimental groups namely Physical Education Programme with Hatha Yoga Practices (PEPWHYP) and Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) had shown significant improvement on depression and all the training groups were better than the non-experiment group. Further, it was proved that Physical Education Programme with Hatha Yoga Practices (PEPWHYP) was better than the Physical Education Programme without Hatha Yoga Practices (PEPWOHYP) on improving the depression. This research also corroborates with Lindberg et al. (2020) proved that Obesity remained a significant risk factor for anxiety and depression in

children after adjusting for Nordic background, neuropsychiatric disorders, family history of anxiety/depression, and socioeconomic status. And also Fernandez et al. (2019) initial support for the immediate effects of super skills of life, suggesting that it is an important asset for the early decrease of anxiety and depressive symptoms in young Spanish talking children and also Bressington et al. (2019) proved that yoga-based social-emotional wellness promotion program significant changes in adolescent emotional distress, pro-social behavior, and school functioning.

#### **4.6 DISCUSSION OF HYPOTHESES**

1. The first research hypothesis stated that coastal area children could be successfully selected at random and their physical and social vulnerability status could be assessed. The study successfully assessed the physical and social vulnerability status through the checklist. Hence, the first research hypothesis was accepted.
2. The second research hypothesis stated that there would be a significant improvement on selected health-related fitness variables among coastal area children due to physical education programme with hatha yoga practices (PEPWHYP). The results of the study confirmed that physical education programme with hatha yoga practices (PEPWHYP) have enhanced significant

improvement on selected health-related fitness variables among coastal area children. Hence, the second research hypothesis was accepted.

3. The third research hypothesis stated that there would be a significant improvement on selected health-related fitness variables among coastal area children due to physical education programme without hatha yoga practices (PEPWOHYP). The results of the study confirmed that physical education programme without hatha yoga practices (PEPWOHYP) have produced significant improvement on selected health-related fitness variables among coastal area children. Hence, the third research hypothesis was accepted.
4. The fourth research hypothesis stated that there would be a significant improvement on selected psychosocial variables among coastal area children due to physical education programme with hatha yoga practices (PEPWHYP). The results of the study confirmed that physical education programme with hatha yoga practices (PEPWHYP) have significant improvement on selected psychological variables among coastal area children. Hence, the fourth research hypothesis was accepted.
5. The fifth research hypothesis stated that there would be a significant improvement on selected psychosocial variables among coastal area children due to physical education programme without hatha yoga practices (PEPWOHYP). The results of

the study confirmed that physical education programme without hatha yoga practices (PEPWOHYP) have produced significant improvement on selected psychological variables among coastal area children. Hence, the fifth research hypothesis was accepted.

6. The sixth research hypothesis stated that the physical education programme with hatha yoga practices (PEPWHYP) would produce a better significant improvement than the of physical education programme without hatha yoga practices (PEPWHOYP) on the selected health-related fitness and psychosocial variables among coastal area children. The results of the study proved that hatha yoga practices (PEPWHYP) would produce better significant improvement than the physical education programme without hatha yoga practices (PEPWHOYP) on the selected health-related fitness and psychosocial variables among coastal area children. Hence, the sixth research hypothesis was accepted.