

6.0 DATA EXTRACTION

6.1 DATA COLLECTION

The data were collected by the research scholar and two assistants who is an expert in the field of sports and physical education. The pre and post-test data was recorded immediately before and after the intervention period for all the recruited participants. The investigator was available to answer questions and provide proper guidance during the assessment. The details procedure of data collection for different types of parameters is described as mentioned below.

Physical fitness tests: A demonstrator demonstrated every test item with detail explanation to all the subjects before undergoing to the test and scores were recorded as per the test procedures.

Football skill Tests: These tests were conducted individually for each subject by the investigator with the help of game experts. All the subjects are allowed to take trials before the commencement of skill tests.

To minimize error, oral instruction and demonstrative model were used which helps the participants to understand what a test required. In all other respects, tests were administered according to standard procedures with no warming-up period prior to the test.

6.1.1 Details of the Data Extraction Organizational Procedure

Data acquirement took place all six days of the week, for one hour each day, from 4.00pm to 5.00pm, which were allotted for data taking. On any day, students could comfortably finish 4-5 tests taking 5 to 10 min. per test, with the rest of the time required for explanation. Each participant took 4 days to complete all the tests, with

about 20 being measured on various tests each day. In this way, about two whole weeks were required before and after the study period for data extracting on all study variables.

6.2 DATA SCORING

Data were extracted using standard procedures which elaborately explained in chapter 5; for each variable. Data scoring and entry were completed as per the guidelines of the assessment tools by the research staff, under the guidance of the study statistician. All forms and test sheets were thoroughly screened for completeness of responses. Data were organized and tabulated for statistical analysis in Microsoft Excel program.

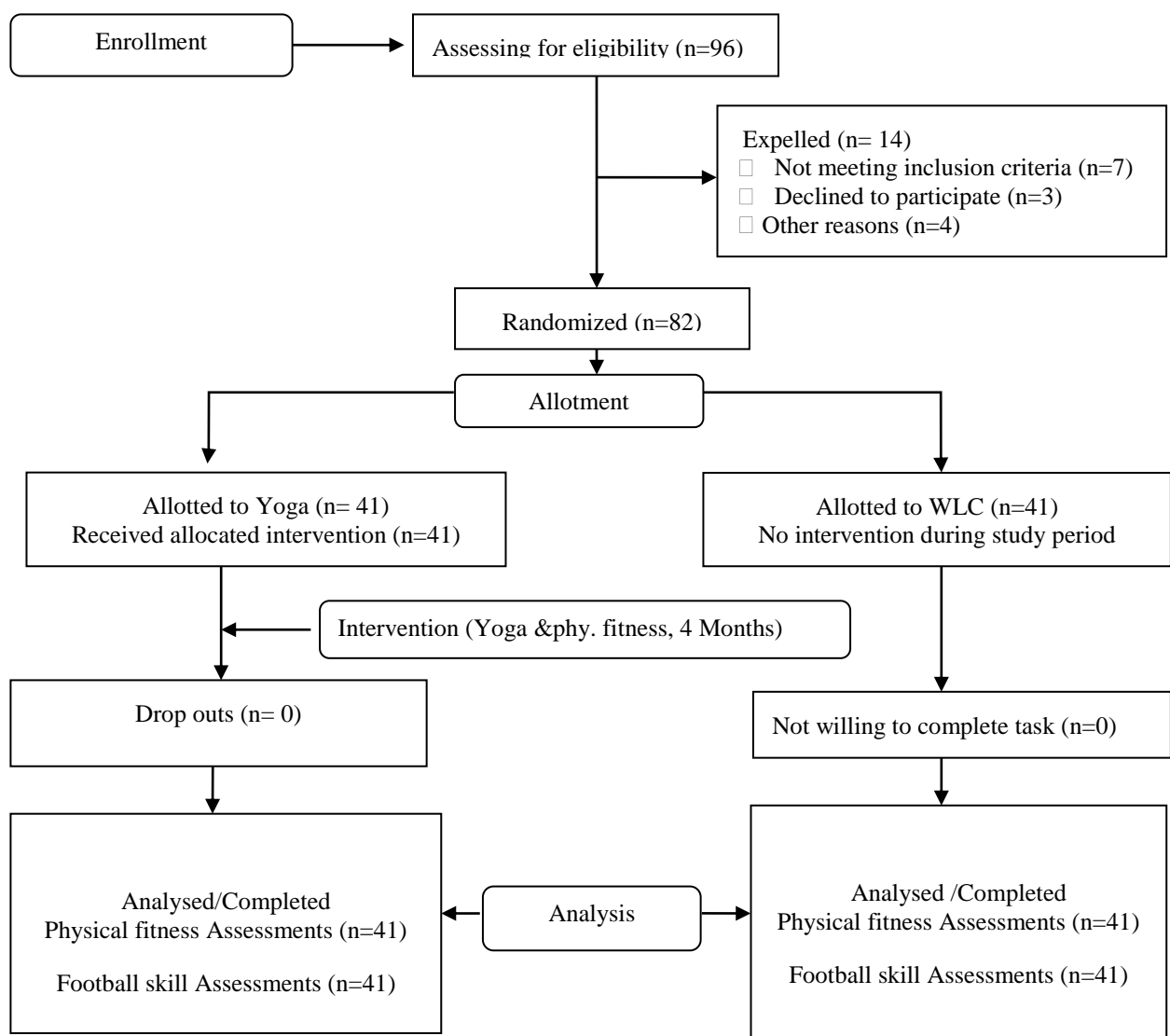
6.3 DATA ANALYSIS

Data were analyzed using the r-studio version 3.4.1. The Independent samples 't' test was used to check the difference between groups for demographic measures. Analysis of repeated measures followed by Bonferroni post-hoc and group time interaction scores was measured for all the physical fitness and football skills. Also, an analysis of covariance (ANCOVA) was used to control the baseline differences.

7.0 RESULTS

Out of 96 football players, 89 satisfied the selection criteria, and 82 of them were included in the study. With the help of football experts, Treatment group (n=41) and Control group (n=41) were formed randomly by lottery method. There were 6 dropouts in the whole group of 89 participants. Four members from treatment and three are from the control group dropped from the study. The reason was, four are irregular and three subjects were not willing to complete the task. However, the data of 82 participants (n=41 each) were available for final analysis. The treatment group was given selected yogic practices and fitness training intervention and control group were not given the intervention but, allowed to do their regular activities.

Figure- Trial Profile



7.1 DEMOGRAPHIC DATA

Demographic characteristics; anthropometric variable (age, height, weight) and gender of the two groups are presented in table-. There were no statistically significant differences between treatment and control groups for any of the selected baseline characteristics ($p > 0.05$; Independent sample t-test).

| Variables | | Treatment (n=41) | Control (n=41) | P values |
|--------------------------|------------|------------------|----------------|---------------------------------|
| Gender | Male | 41 (100%) | 41 (100%) | |
| Anthropometric Variables | Age(Years) | 19.66 ± 1.17 | 19.476±1.12 | P > 0.05 (Ind. Sample 't' test) |
| | BMI | 21.29±2.38 | 21.93±1.95 | P > 0.05 (Ind. Sample 't' test) |

7.2 PHYSICAL FITNESS TEST

At base line there was no significant difference between groups for the following variables; Body Mass Index (BMI) ($p=0.182$), Sit and Reach (SR) ($p=0.850$).

7.2.1 Hand grip Muscle strength (MS): Table 7.2.1 display, at baseline there was a significant difference between groups ($p=0.011$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 24.417, p < 0.001$] and a group-time interaction [$F(1, 80) = 9.709, p < 0.003$]. Further post-hoc, Bonfferoni showed that there was a significant increase in 4.91% ($p < 0.001$) in treatment group whereas non-significant change found in control group (1.23%, $p=0.200$) when compared pre to post values as shown in figure 7.2.1. An analysis of covariance (ANOCOVA) controlling for baseline differences found significant differences between groups on post scores [$F(1, 80) = 9.218, p=0.003$].

| Table 7.2.1-Results of Muscle Strength | | | | | | |
|--|-------------|-----------------|---------------------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| MS (Kg) | T (n=41) | 63.56± 13.72 | 66.68± 14.07*** ^c | 4.91 | 3.12 | 0.003 |
| | C (n=41) | 56.71± 9.70 | 57.41± 10.22 | 1.23 | 0.70 | |

Abbreviations: MS- Muscle strength; T-Treatment; C-Control
 * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons)
^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons)
Legend: Treatment group shows significant improvement in the score for Muscle strength.

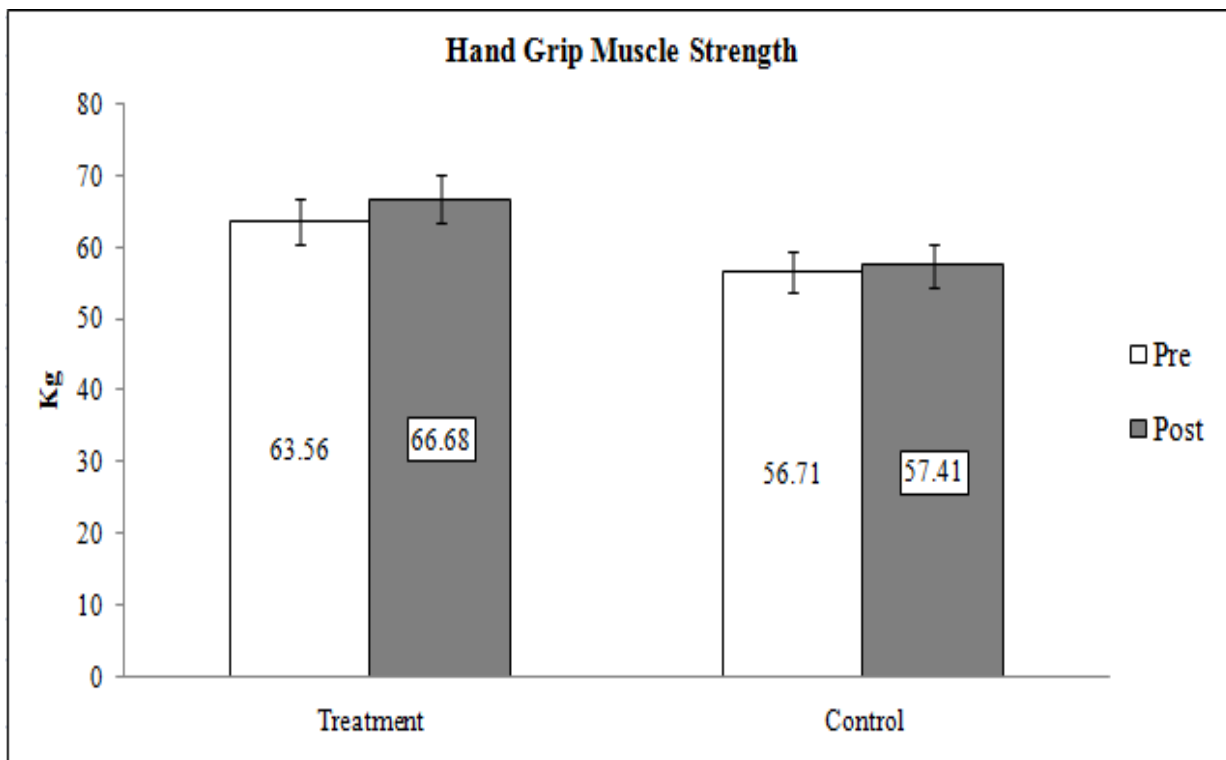


Figure 7.2.1: Hand grip Muscle strength

7.2.2 Muscle Endurance (Sit up): Table 7.2.2 display, at baseline there was a significant difference between groups ($p<0.001$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 48.440, p< 0.001$] and group-time interaction [$F(1, 80) = 27.619, (p< 0.001)$]. Further post-hoc, Bonferroni showed that there was a significant increase in 11.41% ($p<0.001$) in treatment group whereas non-significant change found in control group (2.19%, $p=0.232$) when compared pre to post values as shown in figure 7.2.2. An analysis of covariance (ANCOVA) controlling for baseline differences found significant differences between groups on post scores [$F(1, 80) = 26.654, p< 0.001$].

| Table 7.2.2-Results of Muscle Endurance (Sit Ups) | | | | | | |
|--|---------|-----------------|--------------------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| SU (counts) | T(n=41) | 27.61± 10.05 | 30.76± 9.87*** ^c | 11.41 | 3.15 | 0.001 |
| | C(n=41) | 20.07± 3.51 | 20.51± 4.32 | 2.19 | 0.44 | |
| Abbreviations: SU- Sit Ups; T-Treatment; C-Control | | | | | | |
| * $p<0.05$, ** $p<0.01$, *** $p<0.001$ (Within group comparisons) | | | | | | |
| ^a $p<0.05$, ^b $p<0.01$, ^c $p<0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for Sit Ups. | | | | | | |

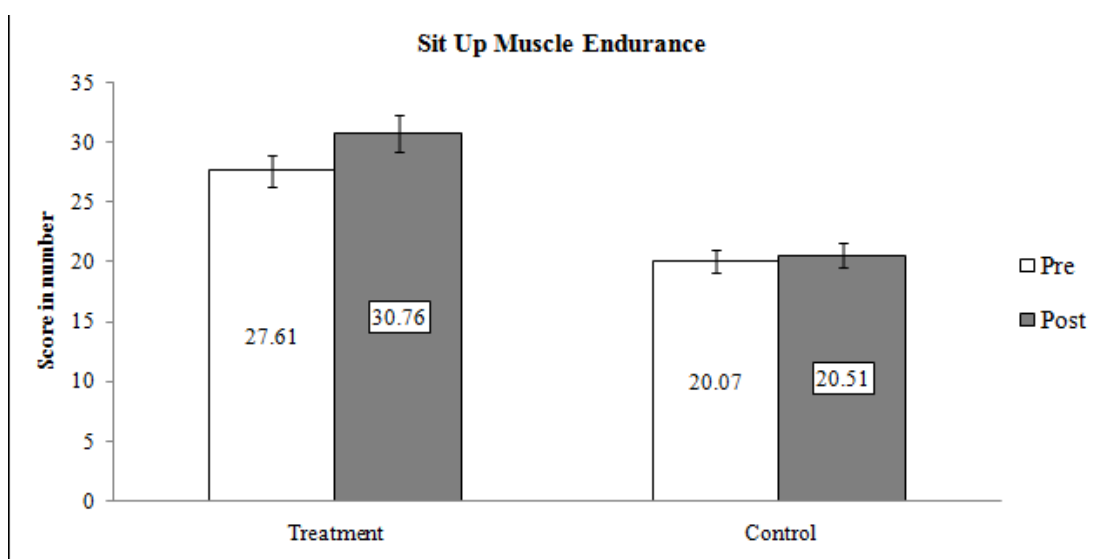


Figure 7.2.2: Muscle Endurance Test (Sit ups)

7.2.3 Cardio-Vascular Endurance (CVE): Table 7.2.3 display, at baseline there was a significant difference between groups ($p=0.041$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 33.253, p < 0.001$] and a group-time interaction [$F(1, 80) = 19.919, p < 0.001$]. Further post-hoc, Bonferroni showed that there was a significant increase in 4.51% ($p < 0.001$) in treatment group whereas non-significant change found in control group (0.53%, $p = 0.359$) when compared pre to post scores as shown in figure 7.2.3. An analysis of covariance (ANCOVA) controlling for baseline differences found significant differences between groups on post scores [$F(1, 80) = 16.666, p < 0.001$].

| Table 7.2.3-Results of Cardio-Vascular Endurance (CVE) | | | | | | |
|--|-------------|------------------|---------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| CVE | T (n=41) | 112.12± 22.46 | 117.18± 23.44*** | 4.51 | 5.06 | 0.001 |
| | C (n=41) | 121.92± 20.30 | 122.57± 18.80 | 0.53 | 0.65 | |
| Abbreviations: CVE- Cardio-Vascular Endurance; T-Treatment; C-Control | | | | | | |
| * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) | | | | | | |
| ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for CVE | | | | | | |

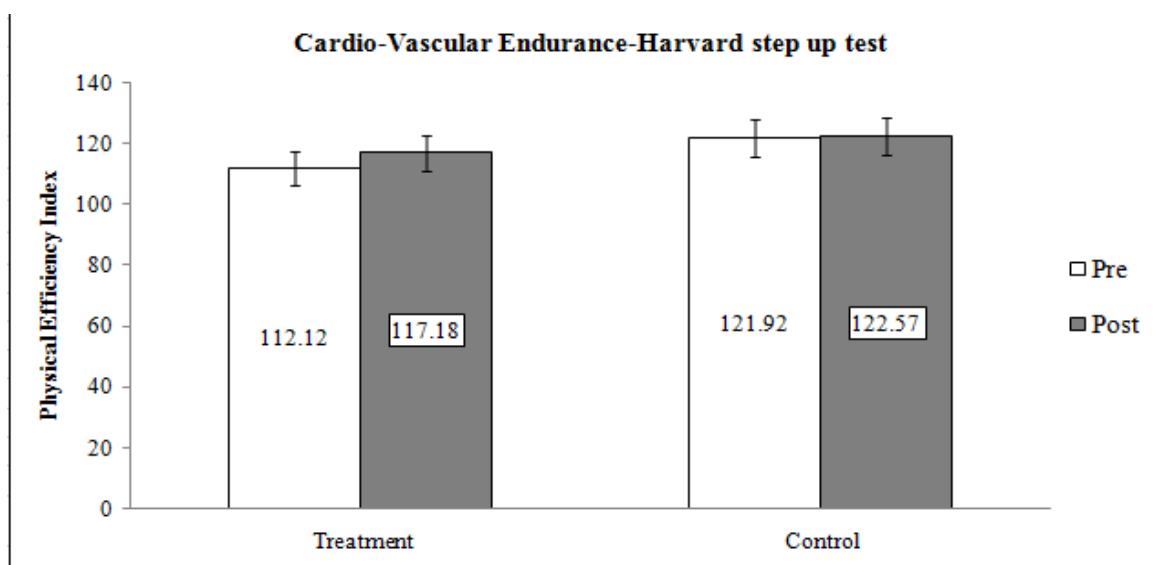


Figure 7.2.3: Cardio-Vascular Endurance (Harvard step up test).

7.2.4 Body Mass Index (BMI): Table 7.2.4 display, at baseline there was no significant difference between groups ($p=0.182$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 5.793, p < 0.018$] but, there is no significant difference in group-time interaction [$F(1,80) = 0.286, p = 0.595$]. Further post-hoc, Bonferroni showed that there was a significant increase in 0.83% ($p < 0.041$) in treatment group whereas non-significant change found in control group (0.51%, $p = 0.189$) when compared pre to post values as shown in figure 7.2.4.

| Table 7.2.4-Results of Body Mass Index (BMI) | | | | | | |
|--|-------------|----------------|-----------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| BMI | T (n=41) | 20.81± 2.38 | 20.98± 1.95* | 0.83 | 0.17 | 0.595 |
| | C (n=41) | 21.46± 2.00 | 21.60± 1.76 | 0.51 | 0.14 | |
| Abbreviations: BMI- Body Mass Index; T-Treatment; C-Control | | | | | | |
| * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) | | | | | | |
| ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for BMI | | | | | | |

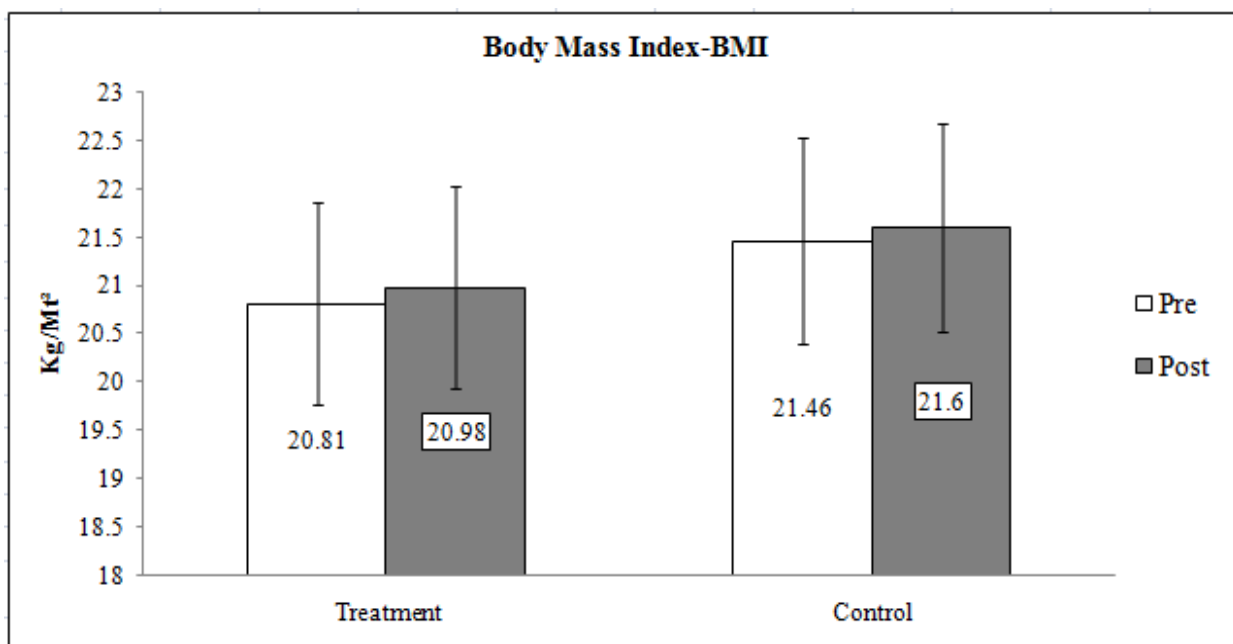


Figure 7.2.4: Body Mass Index- BMI

7.2.5 Sit and Reach (SR): Table 7.2.5 display, at baseline there was no significant difference between groups ($p=0.850$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 74.783, p < 0.001$] and a group-time interaction [$F(1, 80) = 32.789, p < 0.001$]. Further post-hoc, Bonferroni showed that there was a significant increase in 57.69% ($p < 0.001$) in the treatment group and in control group (11.36%, $p = 0.042$) when compared pre to post scores as shown in figure 7.2.5.

| Table 7.2.5-Results of Sit and Reach (SR) | | | | | | |
|--|-------------|---------------|-------------------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| SR | T (n=41) | 5.20± 5.14 | 8.20± 3.89*** ^b | 57.69 | 3.00 | 0.001 |
| | C (n=41) | 5.37± 2.61 | 5.98± 2.36* | 11.36 | 0.61 | |
| Abbreviations: SR- Sit and Reach; T-Treatment; C-Control | | | | | | |
| * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) | | | | | | |
| ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for Sit and Reach | | | | | | |

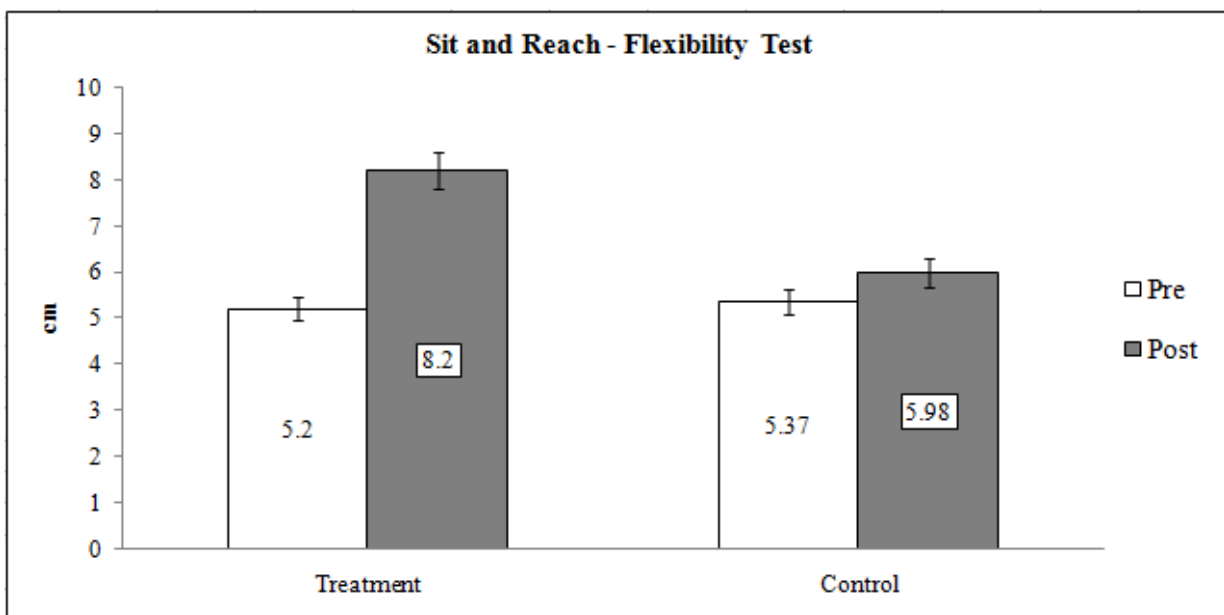


Figure 7.2.5: Flexibility Test (Sit and Reach)

7.3 FOOTBALL SKILL TEST

At baseline there was no significant difference between groups for the following variables; Shooting ($p = 0.363$), Passing ($p = 0.824$) and Juggling ($p = 0.760$).

Repeated measures ANOVA difference between pre-post scores, and group-time interaction scores for football skill variables are as shown in Table 7.3.1 to 7.3.5.

7.3.1 Dribbling Test (second): Table 7.3.1 display, at baseline there was a significant difference between groups ($p = 0.002$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 57.366, p < 0.001$] and a group-time interaction [$F(1, 80) = 21.350, p < 0.001$]. Further post-hoc, Bonferroni showed that there was a significant increase in 8.35% ($p < 0.001$) in the treatment group and in control group (1.90%, $p = 0.040$) when compared with pre to post scores as shown in figure 7.3.1.

| Table 7.3.1-Results of Dribbling (second) | | | | | | |
|--|-------------|-------------------------------|--------------------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| Dribbling (sec.) | T (n=41) | 37.34± 4.16** ^b | 34.22± 4.09*** ^c | 8.35 | 3.12 | 0.001 |
| | C (n=41) | 40.00± 3.44 | 39.24± 3.56* | 1.90 | 0.76 | |
| Abbreviations: T-Treatment; C-Control * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) Legend: Treatment group shows significant improvement in Dribbling (sec.) | | | | | | |

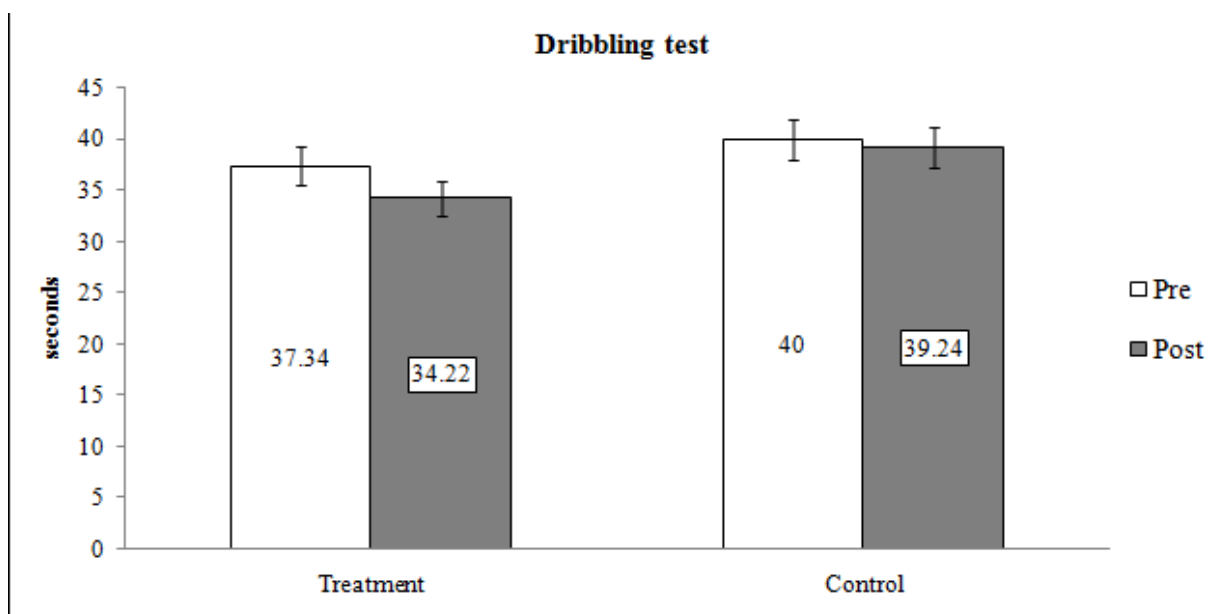


Figure 7.3.1: Dribbling Test in seconds

7.3.1.1 Dribbling Test (scores): Table 7.3.1.1 display, at baseline there was a significant difference between groups ($p=0.002$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 57.136, p < 0.001$] and a group-time interaction [$F(1, 80) = 21.35, p < 0.001$]. Further post-hoc, Bonferroni showed that there was a significant increase in 24.64% ($p < 0.001$) in the treatment group and in control group (7.56%, $p = 0.001$) when compared with pre to post scores as shown in figure 7.3.1.1.

| Table 7.3.1.1-Results of Dribbling (scores) | | | | | | |
|--|-------------|---------------------------------|----------------------------------|-------------|------|----------------|
| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
| Dribbling (scores) | T (n=41) | 126.60± 41.63** ^b | 157.80± 40.89*** ^c | 24.64 | 31.2 | 0.001 |
| | C (n=41) | 100.0 ± 34.55 | 107.56 ± 35.55** | 7.56 | 0.76 | |
| Abbreviations: T-Treatment; C-Control | | | | | | |
| * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) | | | | | | |
| ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for Dribbling | | | | | | |

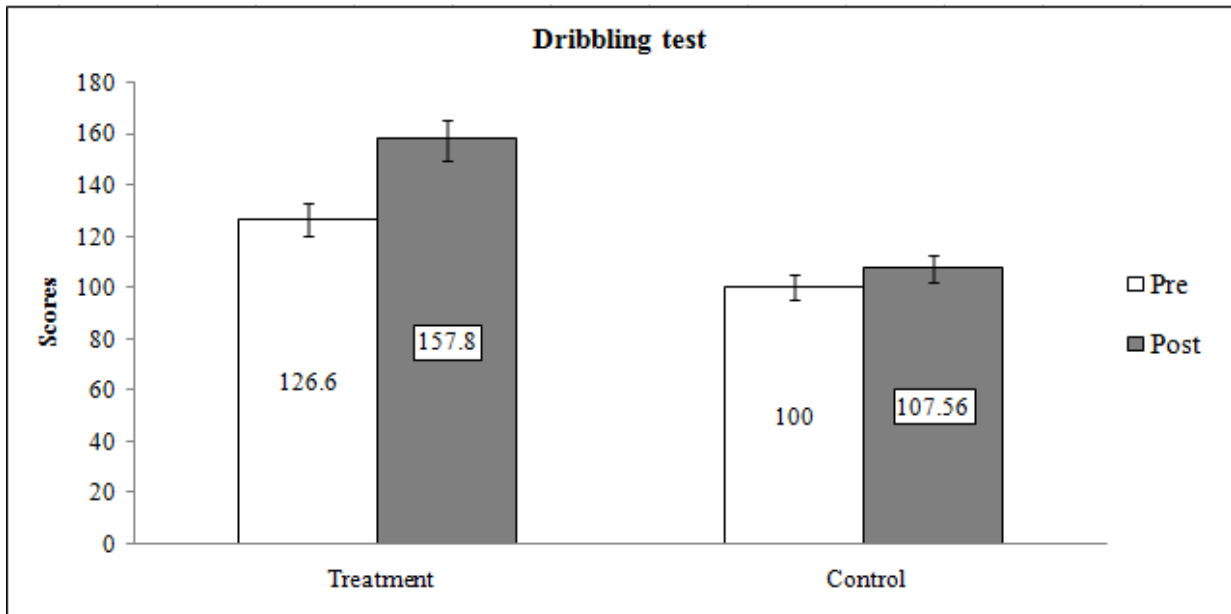


Figure 7.3.1.1: Dribbling Test in scores

7.3.2 Lofted Pass (LP): Table 7.3.2 display, at baseline there was a significant difference between groups ($p=0.011$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 62.143, p < 0.001$] and a group-time interaction [$F(1, 80) = 13.887, p < 0.001$]. Further post-hoc, Bonferroni showed that there was a significant increase in 23.93% ($p < 0.001$) in the treatment group and in control group (10.43%, $p=0.004$) when compared with pre to post scores as shown in figure 7.3.2.

| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
|-----------|-------------|------------------|----------------------------------|-------------|-------|----------------|
| LP | T (n=41) | 165.12± 64.19 | 204.63± 61.04*** ^c | 23.93 | 39.51 | 0.001 |
| | C (n=41) | 135.61± 34.14 | 149.76± 39.02** | 10.43 | 14.15 | |

Abbreviations: LP -Lofted Pass; T-Treatment; C-Control

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons)

^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons)

Legend: Treatment group shows significant improvement in the score for Lofted Pass

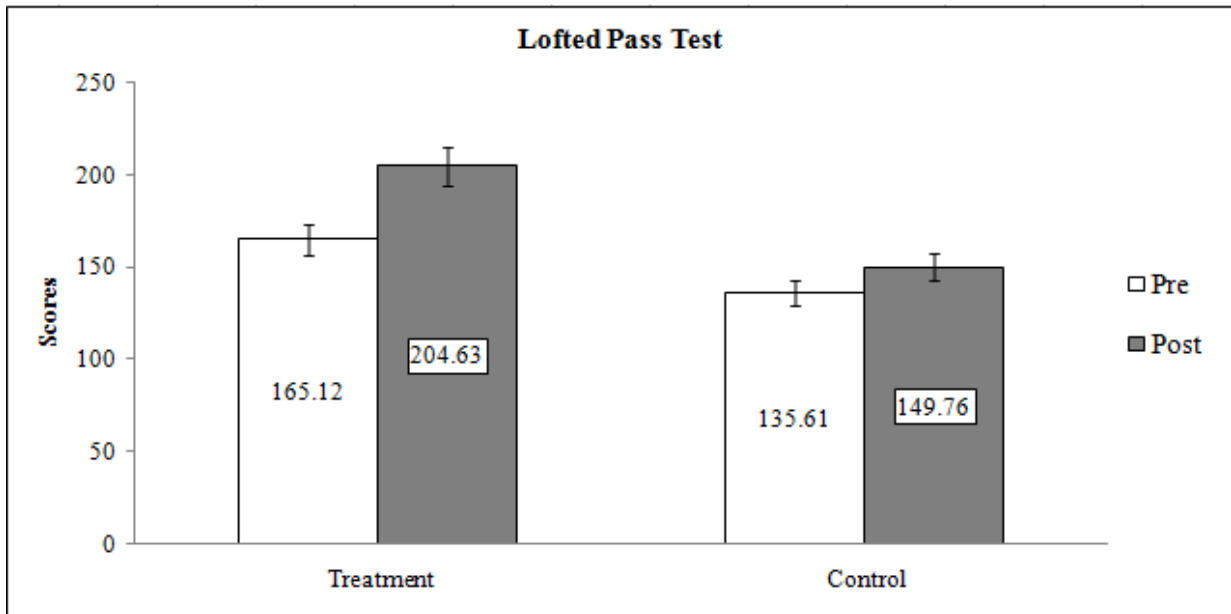


Figure 7.3.2: Lofted Pass Test

7.3.3 Shooting Test: Table 7.3.3 display, at baseline there was no significant difference between groups ($p=0.363$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 32.206, p < 0.001$] but, there is no significant difference in a group-time interaction [$F(1, 80) = 0.824, p=0.367$]. Further post-hoc, Bonferroni showed that there was a significant increase in 13.33% ($p < 0.001$) in the treatment group and also in control group 10.39%, ($p = 0.001$) when compared with pre to post scores as shown in figure 7.3.3.

| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
|--|-------------|--------------------------------|---------------------------------|-------------|-------|----------------|
| Shooting | T (n=41) | 106.10± 33.98 ^{*a} | 120.24± 26.12 ^{***} | 13.33 | 14.14 | 0.001 |
| | C (n=41) | 98.54± 40.53 | 108.78± 31.56 ^{***} | 10.39 | 10.24 | |
| Abbreviations-Treatment; C-Control | | | | | | |
| * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons) | | | | | | |
| ^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in the score for Shooting | | | | | | |

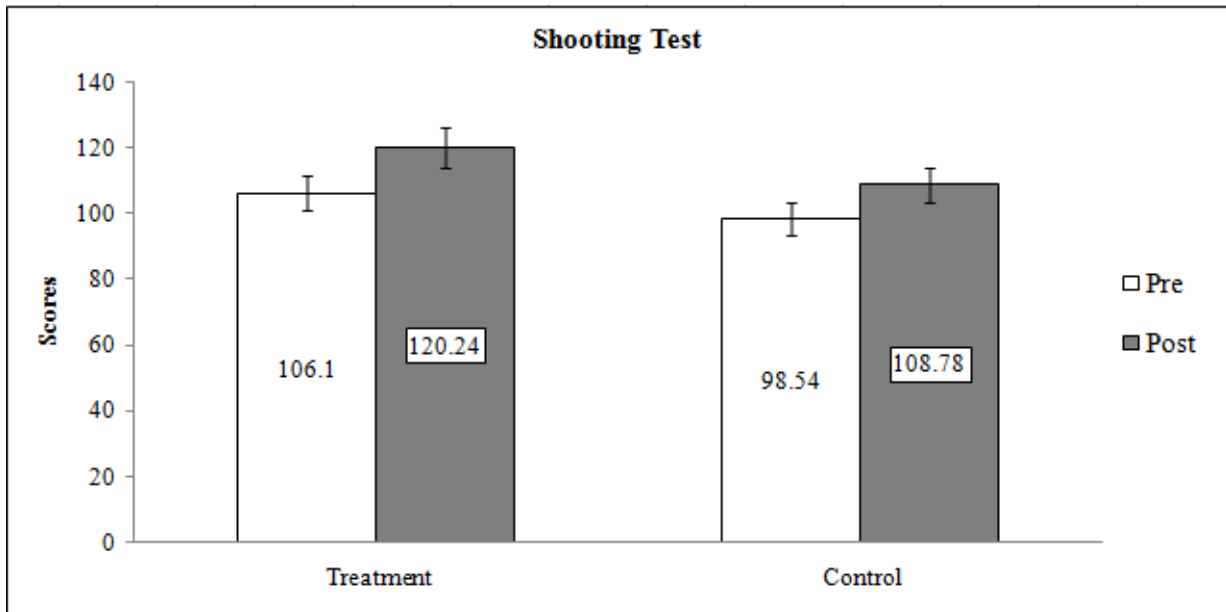


Figure 7.3.3: Shooting Test

7.3.4 Short Passing: Table 7.3.4 display, at baseline there was no significant difference between groups ($p= 0.824$). Repeated measures ANOVA found a significant difference between times [$F (1, 80) = 6.185, p= 0.015$] but, there is no significant difference in a group-time interaction [$F (1, 80) = 2.370, p=0.128$]. Further post-hoc, Bonferroni showed that there was a significant increase in 26.15% ($p<0.006$) in the treatment group whereas non-significant change found in control group (6.35%, $p =0.505$) when compared with pre to post scores as shown in figure 7.3.4.

| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
|-----------|-------------|-----------------|--------------------|-------------|-------|----------------|
| SP | T (n=41) | 79.27± 48.70 | 100.00± 43.30** | 26.15 | 20.73 | 0.128 |
| | C (n=41) | 76.83± 50.12 | 81.71± 47.11 | 6.35 | 4.88 | |

Abbreviations-SP-Short Passing; Treatment; C-Control
 $*p<0.05, **p<0.01, ***p<0.001$ (Within group comparisons)
 $^a p<0.05, ^b p<0.01, ^c p<0.001$ (Between group post-post comparisons)
Legend: Treatment group shows significant improvement in the score for Short Pass

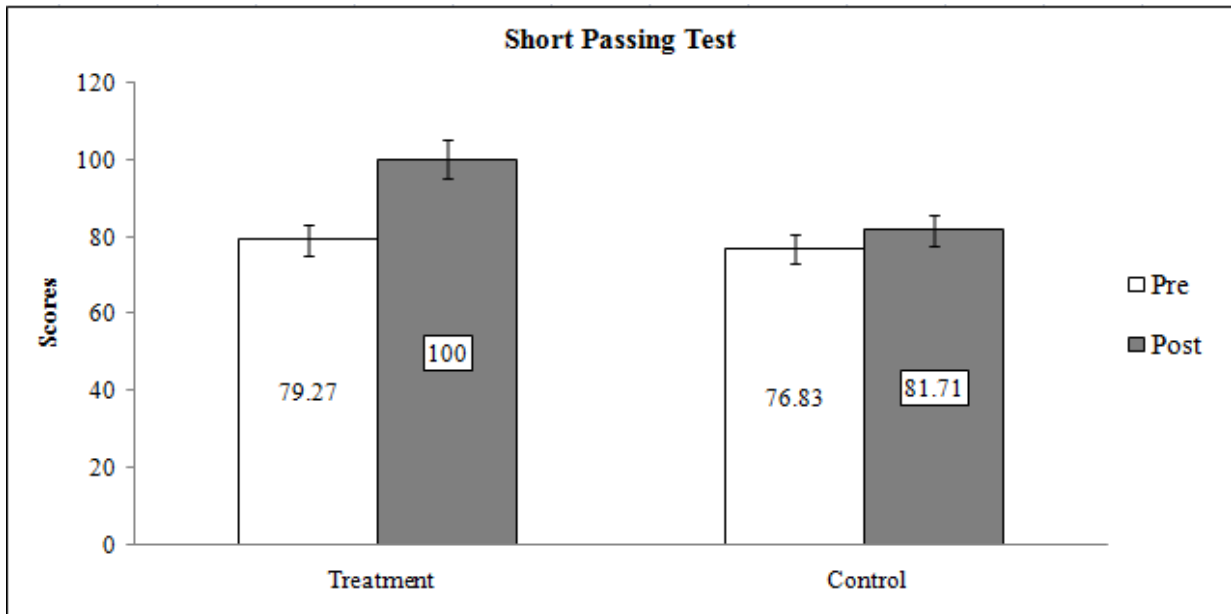


Figure 7.3.2: Short Passing Test

7.3.5 Juggling Test (seconds): Table 7.3.5 display, at baseline there was a significant difference between groups ($p= 0.924$). Repeated measures ANOVA found a significant difference between times [$F (1, 80) = 34.972, p< 0.001$] and a group-time interaction [$F (1, 80) = 9.956, p=0.002$]. Further post-hoc, Bonferroni showed that there was a significant increase in 41.80% ($p<0.006$) in the treatment group whereas non-significant change found in control group (12.89%, $p= 0.055$) when compared with pre to post scores as shown in figure 7.3.5.

| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
|--|-------------|-----------------|--------------------------------|-------------|------|----------------|
| Juggling (sec.) | T (n=41) | 12.68± 11.46 | 17.98± 9.19*** ^a | 41.80 | 5.30 | 0.002 |
| | C (n=41) | 12.49± 6.19 | 14.10± 6.68 | 12.89 | 1.61 | |
| Abbreviations-Treatment; C-Control | | | | | | |
| * $p<0.05$, ** $p<0.01$, *** $p<0.001$ (Within group comparisons) | | | | | | |
| ^a $p<0.05$, ^b $p<0.01$, ^c $p<0.001$ (Between group post-post comparisons) | | | | | | |
| Legend: Treatment group shows significant improvement in Juggling (sec.) | | | | | | |

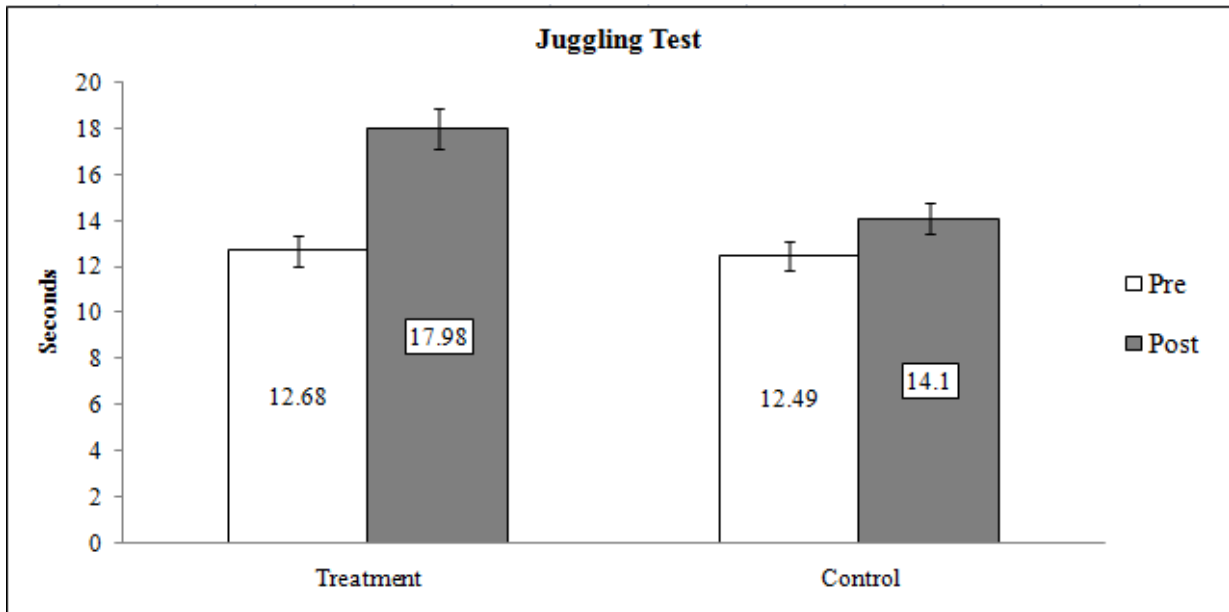


Figure 7.3.5: Juggling Test in seconds

7.3.5.1 Juggling Test (scores): Table 7.3.5.1 display, at baseline there was no significant difference between groups ($p=0.760$). Repeated measures ANOVA found a significant difference between times [$F(1, 80) = 22.555, p < 0.001$] and a group-time interaction [$F(1,80) = 2.506, p=0.117$]. Further post-hoc, Bonferroni showed that there was a significant increase in 19.24% ($p < 0.001$) in the treatment group and in control group (9.40%, $p = 0.028$) when compared with pre to post scores as shown in figure 7.3.5.1.

| Variables | Group | Pre M± SD | Post M± SD | % Change | Diff | Group* Time |
|----------------------|-------------|------------------|---------------------|-------------|-------|----------------|
| Juggling (scores) | T (n=41) | 101.46± 36.92 | 120.98± 18.41*** | 19.24 | 19.52 | 0.117 |
| | C (n=41) | 103.66± 27.09 | 113.41± 17.83* | 9.40 | 9.75 | |

Abbreviations-Treatment; C-Control

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Within group comparisons)

^a $p < 0.05$, ^b $p < 0.01$, ^c $p < 0.001$ (Between group post-post comparisons)

Legend: Treatment group shows significant improvement in the score for Juggling

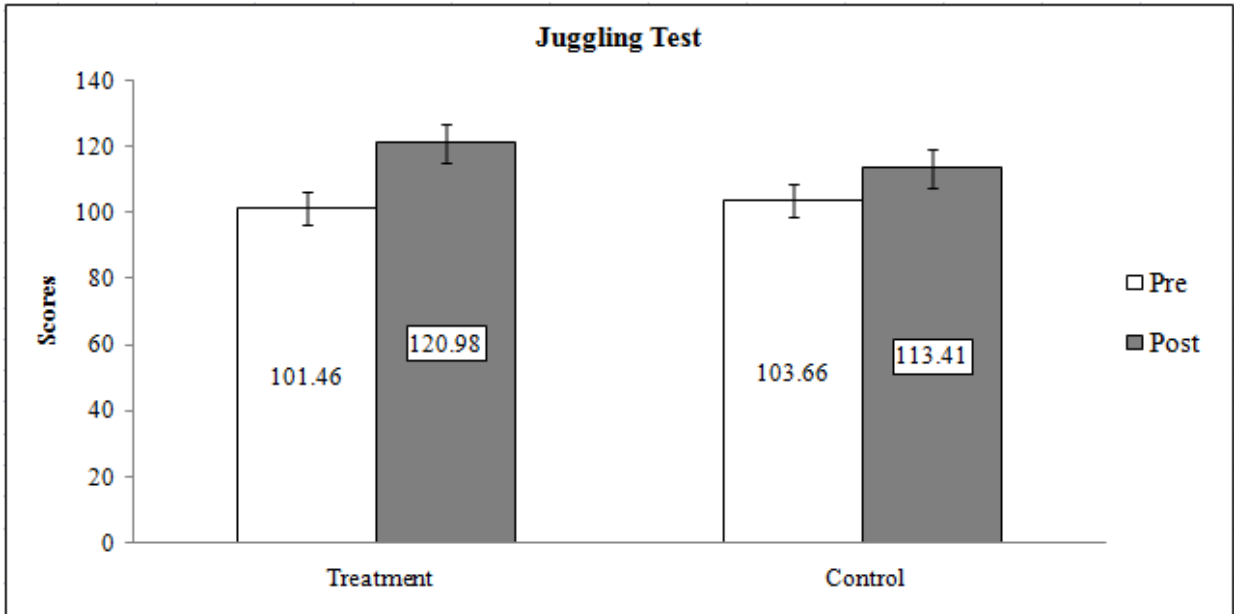


Figure 7.3.5.1: Juggling Test in scores