Chapter IV

ANALYSIS AND INTERPRETATIONS OF THE DATA

This chapter presents the results of the study from the data analyses of the experimental study. The analyses were carried out through various statistical techniques such as the dependent t-test, the univariate analysis of covariance (one-way ANCOVA), and the post hoc pair wise comparison using the Scheffe’s test analysis. The data were compiled and analyzed using the *Statistical Package for the Social Science (SPSS)* for windows computer software (Version 17).

The results of the pre-experimental study, in response to the groups’ equivalence are reported in chapter three. Hypothesis regarding the effects of the different training programme on participants’ cardio respiratory endurance, speed endurance, muscular endurance, VO$_2$ max, breath holding time and resting pulse rate were tested, and the findings of testing this hypothesis were presented. Next the hypothesis regarding the significant difference among the effects of different training programme on participants’ cardio respiratory endurance, speed endurance, muscular endurance, VO$_2$ max, breath holding time and resting pulse rate were tested, and the findings of testing this hypothesis were presented. Each hypothesis tested is followed by a summary of testing that hypothesis.
was also presented. Finally, the summary of findings to research questions one and two was presented.

**Testing of Hypothesis - I**

There would be significant improvement on selected dependent variables due to the effects of fartlek training and interval running programme.

Table IV presents pre and post test means, standard deviations, and adjusted post test means of each dependent variable by the experimental and control groups.
### TABLE IV
MEANS, STANDARD DEVIATIONS AND ADJUSTED MEANS FOR EACH DEPENDENT VARIABLE BY THE TRAINING GROUPS

<table>
<thead>
<tr>
<th>Tests</th>
<th>Fartlek training</th>
<th></th>
<th>Interval training</th>
<th></th>
<th>Control Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Pre test</td>
<td>2324.67</td>
<td>130.32</td>
<td>2343.33</td>
<td>175.89</td>
<td>2332.67</td>
<td>127.59</td>
</tr>
<tr>
<td>Post-Test</td>
<td>2558.67</td>
<td>242.75</td>
<td>2779.00</td>
<td>283.90</td>
<td>2323.67</td>
<td>151.57</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>2569.47</td>
<td>2767.12</td>
<td>2324.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre test</td>
<td>22.41</td>
<td>0.82</td>
<td>22.33</td>
<td>1.09</td>
<td>22.50</td>
<td>1.28</td>
</tr>
<tr>
<td>Post-Test</td>
<td>20.62</td>
<td>0.98</td>
<td>19.93</td>
<td>0.58</td>
<td>22.34</td>
<td>1.21</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>20.63</td>
<td>20.00</td>
<td>22.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre test</td>
<td>34.80</td>
<td>3.14</td>
<td>34.80</td>
<td>4.84</td>
<td>34.67</td>
<td>5.04</td>
</tr>
<tr>
<td>Post-Test</td>
<td>39.13</td>
<td>2.85</td>
<td>44.13</td>
<td>4.73</td>
<td>34.80</td>
<td>4.25</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>39.10</td>
<td>44.10</td>
<td>34.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre test</td>
<td>45.39</td>
<td>3.90</td>
<td>44.31</td>
<td>3.96</td>
<td>45.18</td>
<td>4.11</td>
</tr>
<tr>
<td>Post-Test</td>
<td>48.76</td>
<td>3.62</td>
<td>53.22</td>
<td>4.81</td>
<td>45.17</td>
<td>3.76</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>48.36</td>
<td>53.82</td>
<td>44.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre test</td>
<td>41.00</td>
<td>5.20</td>
<td>41.12</td>
<td>3.37</td>
<td>41.27</td>
<td>8.41</td>
</tr>
<tr>
<td>Post-Test</td>
<td>48.81</td>
<td>4.57</td>
<td>52.09</td>
<td>4.34</td>
<td>41.15</td>
<td>8.96</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>48.93</td>
<td>52.10</td>
<td>41.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre test</td>
<td>69.00</td>
<td>2.14</td>
<td>69.00</td>
<td>1.81</td>
<td>69.13</td>
<td>1.68</td>
</tr>
<tr>
<td>Post-Test</td>
<td>65.13</td>
<td>1.36</td>
<td>65.07</td>
<td>1.10</td>
<td>69.07</td>
<td>1.79</td>
</tr>
<tr>
<td>Adjusted Mean</td>
<td>65.16</td>
<td>65.09</td>
<td>69.02</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure I-VI presents pre and post test means, and adjusted post test means of each dependent variable by the experimental and control groups.
FIGURE I: MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON CARDIO RESPIRATORY ENDURANCE
FIGURE II : MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON SPEED ENDURANCE
FIGURE III : MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON MUSCULAR ENDURANCE
FIGURE IV : MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON VO₂MAX
FIGURE V : MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON BREATH HOLDING TIME
**FIGURE VI**: MEAN VALUES OF PRE, POST AND ADJUSTED POST TESTS OF FARTLEK TRAINING, INTERVAL RUNNING AND CONTROL GROUPS ON RESTING PULSE RATE
To examine if there were statistically significant improvement in dependent variables of fartlek training and interval training, and control groups separately, paired sample t-test was conducted.

Table V presents the results of the paired sample t-test of six dependent variables (cardio respiratory endurance, speed endurance, muscular endurance, VO₂ max, breath holding time, and resting pulse rate).

**TABLE V**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fartlek training</th>
<th>Interval training</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardio Respiratory Endurance</td>
<td>-4.96*</td>
<td>-9.29*</td>
<td>0.54</td>
</tr>
<tr>
<td>Speed Endurance</td>
<td>13.43*</td>
<td>13.40*</td>
<td>1.55</td>
</tr>
<tr>
<td>Muscular Endurance</td>
<td>-7.54*</td>
<td>-11.46*</td>
<td>-0.32</td>
</tr>
<tr>
<td>VO₂ Max</td>
<td>-9.30*</td>
<td>-13.43*</td>
<td>0.05</td>
</tr>
<tr>
<td>Breath Holding Time</td>
<td>-14.80*</td>
<td>-9.18*</td>
<td>0.26</td>
</tr>
<tr>
<td>Resting Pulse Rate</td>
<td>10.64*</td>
<td>8.50*</td>
<td>0.29</td>
</tr>
</tbody>
</table>

* Significant at 0.05 level with df 14 is 2.14.

**Fartlek Training** The t-test value of df 14, cardio respiratory endurance 4.96 (p = .000), speed endurance 13.43 (p = .000), muscular endurance 7.54 (p = .000), VO₂ max 9.30 (p = .000), breath
holding time 14.80 (p = .000) and resting pulse rate 10.64 (p = .000),
respectively. This means that the fartlek training had effects on
participants’ dependent variables.

**Interval Running:** The t-test value of df 14, cardio respiratory
endurance 9.29 (p = .000), speed endurance 13.40 (p = .000),
muscular endurance 11.46 (p = .000), VO₂ max 13.43 (p = .000),
breath holding time 9.18 (p = .000), and resting pulse rate 8.50 (p =
.000), respectively. This means that the interval running had effects
on participants’ dependent variables.

**Control:** The t-test value of df 14, cardio respiratory endurance
0.54 (p = .60), speed endurance 1.55 (p = .143), muscular endurance
0.32 (p = .751), VO₂ max 0.05 (p = .963), breath holding time 0.26 (p =
.795), and resting pulse rate 0.29 (p = .774) respectively. This
means that the control group had no effects on participants’
dependent variables.

**Summary of Testing Hypothesis - I**

The statistical results confirmed the hypothesis, showing that
there was a significant improvement due to the effects of fartlek
training and interval running on selected dependent variables such as
cardio respiratory endurance, speed endurance, muscular endurance,
VO₂ max, breath holding time and resting pulse rate.
Testing Hypothesis II

There would be significant differences on selected dependent variables among the experimental and control groups.

To examine if there were statistically significant differences of dependent variables adjusted mean scores between the fartlek training, interval running and the control groups. While controlling the pre test data, one way univariate analysis of covariance (one-way ANCOVA) was conducted.

Table VI presents the results of the univariate ANCOVA tests of six dependent variables (cardio respiratory endurance, speed endurance, muscular endurance, VO$_2$ max, breath holding time and resting pulse rate).
TABLE VI
RESULTS OF ANALYSIS OF COVARIANCE FOR THE SELECTED DEPENDENT VARIABLES AMONG THREE GROUPS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obtained 'F'-ratio</th>
<th>ETA²</th>
<th>Account of Variance</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardio Respiratory Endurance</td>
<td>31.84</td>
<td>0.734</td>
<td>73%</td>
<td>.000</td>
</tr>
<tr>
<td>Speed Endurance</td>
<td>84.88</td>
<td>0.874</td>
<td>87%</td>
<td>.000</td>
</tr>
<tr>
<td>Muscular Endurance</td>
<td>66.00</td>
<td>0.840</td>
<td>84%</td>
<td>.000</td>
</tr>
<tr>
<td>VO₂ Max</td>
<td>91.66</td>
<td>0.881</td>
<td>88%</td>
<td>.000</td>
</tr>
<tr>
<td>Breath Holding Time</td>
<td>51.64</td>
<td>0.842</td>
<td>84%</td>
<td>.000</td>
</tr>
<tr>
<td>Resting Pulse Rate</td>
<td>64.65</td>
<td>0.789</td>
<td>79%</td>
<td>.000</td>
</tr>
</tbody>
</table>

(The table value required for 0.05 level of significance with df 2 & 41 is 3.23)

**Cardio Respiratory Endurance:** The F ratio of cardio respiratory endurance (2, 41) was 31.84 (p = .000). This means that the training methods had main effects on cardio respiratory endurance. This effects accounted for 73% of the variance on cardio respiratory endurance (Eta² = 0.734).

**Speed Endurance:** The F ratio of speed endurance (2, 41) was 84.88 (p = .000). This means that the training methods had main effects on speed endurance. This effects accounted for 87% of the variance on speed endurance (Eta² = 0.874).
Muscular Endurance: The F ratio of muscular endurance (2, 41) was 66.00 (p = .000). This means that the training methods had main effects on muscular endurance. This effects accounted for 84% of the variance on muscular endurance (Eta² = 0.840).

VO₂ Max: The F ratio of VO₂ max (2, 41) was 91.66 (p = .000). This means that the training methods had main effects on VO₂ max. This effects accounted for 88% of the variance on VO₂ max (Eta² = 0.881).

Breath Holding Time: The F ratio of breath holding time (2, 41) was 51.64 (p = .007). This means that the training methods had main effects on breath holding time. This effects accounted for 84% of the variance on breath holding time (Eta² = 0.842).

Resting Pulse Rate: The F ratio of resting pulse rate (2, 41) was 64.65 (p = .000). This means that the training methods had main effects on resting pulse rate. This effects accounted for 79% of the variance on resting pulse rate (Eta² = 0.789).

The ANCOVA results of comparing the three groups on the selected dependent variables indicated that there were statistically significant differences among the three groups in the selected dependent variables. Therefore, the researcher further investigated the post hoc pairwise comparison using the scheffe’s test for each dependent variable in order to identify significantly where the
differences in the adjusted means resided. Table VII is a summary of post hoc pairwise comparisons.

**TABLE VII**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fartlek Training Vs Interval Running</th>
<th>Fartlek Training Vs Control</th>
<th>Interval Running Vs Control</th>
<th>C.I. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardio Respiratory Endurance</td>
<td>197.65*</td>
<td>244.72*</td>
<td>442.37*</td>
<td>141.11</td>
</tr>
<tr>
<td>Speed Endurance</td>
<td>0.63*</td>
<td>1.65*</td>
<td>2.28*</td>
<td>0.46</td>
</tr>
<tr>
<td>Muscular Endurance</td>
<td>5.00*</td>
<td>4.23*</td>
<td>9.23*</td>
<td>2.04</td>
</tr>
<tr>
<td>VO₂ Max</td>
<td>5.46*</td>
<td>3.40*</td>
<td>8.85*</td>
<td>1.67</td>
</tr>
<tr>
<td>Breath Holding Time</td>
<td>3.16*</td>
<td>7.91*</td>
<td>11.07*</td>
<td>2.85</td>
</tr>
<tr>
<td>Resting Pulse Rate</td>
<td>0.07</td>
<td>3.87*</td>
<td>3.93*</td>
<td>1.01</td>
</tr>
</tbody>
</table>

C.I value – Confidence Interval value of scheffe’s post hoc test.

*Significant at.05 level

**Cardio Respiratory Endurance:** The interval running (Adj.mean = 2767.12) significantly outperformed the fartlek training (Adj.mean = 2569.47) and also two experimental groups namely fartlek training and interval running significantly outperformed than
control group (Adj.mean = 2324.75) in cardio respiratory endurance with adjusted mean differences of 197.65, 244.72 and 442.37 (CI = 141.11).

**Speed Endurance:** The interval running (Adj.mean = 20.00) significantly outperformed the fartlek training (Adj.mean = 20.63) and also two experimental groups namely fartlek training and interval running significantly outperformed than control group (Adj.mean = 22.27) in speed endurance with adjusted mean differences of 0.63, 1.65 and 2.28 (CI = 0.46).

**Muscular Endurance:** The interval running (Adj.mean = 44.10) significantly outperformed the fartlek training (Adj.mean = 39.10) and also two experimental groups namely fartlek training and interval running significantly outperformed than control group (Adj.mean = 34.87) in muscular endurance with adjusted mean differences of 5.00, 4.23 and 9.23 (CI = 2.04).

**VO₂ Max:** The interval running (Adj.mean = 53.82) significantly outperformed the fartlek training (Adj.mean = 48.36) and also two experimental groups namely fartlek training and interval running significantly outperformed than control group (Adj.mean = 44.97) in VO₂ max with adjusted mean differences of 5.46, 3.40 and 8.85 (CI = 1.67).

**Breath Holding Time:** The interval running (Adj.mean = 52.10) significantly outperformed the fartlek training (Adj.mean = 48.93) and
also two experimental groups namely fartlek training and interval running significantly outperformed than control group (Adj.mean = 41.03) in breath holding time with adjusted mean differences of 3.16, 7.91 and 11.07 (CI = 2.85).

**Resting Pulse Rate:** The fartlek training (Adj.mean = 65.16) and the interval running (Adj.mean = 65.09) were showed equal improvement but two experimental groups namely fartlek training and interval running significantly outperformed than control group (Adj.mean = 69.02) in resting pulse rate with adjusted mean differences of 0.07, 3.87 and 3.93 (CI = 1.01).

**Summary of testing Hypothesis - II**

The statistical results confirmed the hypothesis, showing that there was a significant difference among fartlek training, interval running, and control groups on selected dependent variables such as cardio respiratory endurance, speed endurance, muscular endurance, VO2 max, breath holding time and resting pulse rate.

**Summary of findings to Research Questions 1 & 2**

The findings to the two research questions are summarized below.

1. Would the fartlek training and interval running programmes improve the selected dependent variables while the presence of covariate (control)?
Overall, two training methods had significant positive effects on participants’ cardio respiratory endurance, speed endurance, muscular endurance, VO₂ Max, breath holding time and resting pulse rate. This was evidenced by the statistical results that the participants trained namely fartlek training and interval running programmes significantly improved better than the participants in the control group who did not any specific training other than the regular routine as like participants in experimental groups.

In addition, control group had no significant positive effects on participants’ cardio respiratory endurance, speed endurance, muscular endurance, VO₂ max, breath holding time and resting pulse rate and this was also evidenced by the statistical results.

2. would the fartlek training and interval running programmes differs each other and also with control group while improving the selected dependent variables?

The fartlek training and interval running programmes differed each other and also with control group while improving the selected dependent variables. This was evidenced by the statistical results using univariate ANCOVA that the three groups namely fartlek training and interval running programmes and with control groups had significant differences towards improving the selected dependent variables such as cardio respiratory endurance, speed endurance, muscular endurance, VO₂ max, breath holding time and resting pulse
rate. In addition, two experimental groups outperformed than the control group on the selected variables.

According to constructivist theories, information and suggestions from many experts it was concluded that these two training had positive effects on the development of endurance parameters. The findings of this study support earlier findings presented in chapter two that fartlek training and interval running was effective for improving endurance parameters.

The past two decades have seen remarkable performances in sports. Athletes are breaking world records with monotonous regularity. Physiologically, the body has been operating the same way. So, what accounts for these phenomenal performances, which in many cases have been deemed physically impossible? Part of the answer is performance enhancement training based on controlled empirical research.

Previous studies have demonstrated that there was a significant improvement in selected endurance variables by the effects fartlek training and interval running.

Hsu, H., Ivy, J. L., & Kuo, C. H. (2008) conducted the study on the effects of high intensity interval training and sprint training on aerobic performance. This study shown that the high intensity interval
training was improved both aerobic and anaerobic endurance and Continuous training increased aerobic endurance.

Giorgos P. Paradisis, Athanassios Bissas, & Carlton B. Cooke (2009) examined the effects of sprint running training on sloping surfaces (3°) on selected kinematic and physiological variables. This study shown that uphill-downhill training method was significantly more effective in improving maximum running speed and the kinematic characteristics of sprint running than a traditional horizontal training method.

Clark, J.E. (2010) examined improvements in cardio respiratory fitness (VO₂) after the use of a mixed-intensity interval endurance-training (MI-ET) program in female soccer players. The mixed-intensity interval training program was shown a valid means to improved aerobic fitness as indicated by the mixed-intensity interval training group exhibiting significantly greater VO₂ measures after training.

Zacharogiannis, E., Tziortzis, S., & Paradisis, G. (2003) conducted the effects of continuous, interval, and speed training on anaerobic capacity. In conclusion of the study was moderate interval intensity training and continuous training mainly increased aerobic power in exercise.

Mujika, et al., (2000) examined physiological and performance responses to a 6-degree taper, and the influence of training intensity
and volume on these responses. This study resulted that the taper-induced physiological changes in trained middle-distance runners and that distinct physiological changes are elicited from low intensity continuous training and high intensity interval training during taper.

Mandroukas, A., et al., (2009) studied cardio respiratory and metabolic changes during and after three different modes of exercise (active recovery, passive recovery, and continuous running). In summary, heart rate and VO₂ gradually increased along with the muscle effort in all forms of exercise. There are greater cardio respiratory endurance and metabolic system loads with continuous running than with active or passive recovery. Active recovery promotes better use of the aerobic system in intermittent exercise.

Foster, C., Poole, C., Bushey, B., & Wilborn, C. (2009) investigated the potential impact of various aerobic training methods on VO₂, body composition, and anaerobic power. The both training groups were experienced significant increases in VO₂max. The greater impact on aerobic capacity was interval training distance than Long Slow Distance training. Both Interval Training Distance and Long Slow Distance training methods had significant impacts on aerobic capacity.

Sokmen, B., Beam, W., Witchey, R., & Adams, G. (2002) found the effect of interval versus continuous training on aerobic and
anaerobic variables. It concluded that both interval and continuous training improved aerobic work. Interval training produced greater anaerobic benefits than continuous work.

Thomas, T. R., Adeniran, S. B., & Etheridge, G. L. (1984) conducted the effects of different running programs on VO2max, percent fat, and plasma lipids. Interval training and continuous running were compared for effects on physiological adaptations. It concluded that the interval training benefits aerobic capacity more than does continuous training.

Dupont, G., Akakpo, K., & Berthoin, S. (2004) investigated on effects of in-season, high-intensity interval training on professional male soccer players’ running performances. The high-intensity interval training has shown that maximal aerobic speed was improved.

Zafeiridis, A., Sarivasiliiou, H., Dipla, K., & Vrabaš, I.S. (2010) conducted the study on effects of heavy continuous versus long and short intermittent aerobic exercise protocols on oxygen consumption, heart rate, and lactate responses in adolescents. This study shown that the long-intermittent was more effective in stimulating the aerobic system compared to both heavy continuous and short-intermittent, while heavy continuous aerobic exercise appears equally effective to short-intermittent.
Taylor, E. B., Parcell, A. C., Creer, A. R., Sawyer, R. D., Guthrie, M., & Eyestone, E. D. (2002) conducted the study on the effect of work and rest distribution on lactate production during interval training. In conclusion that the short intervals with short recovery times keep lactate accumulation down while longer work and rest periods elevate it. Work and rest intervals will determine the amount of work that can be performed at a particular quality level at training. Short work and rest intervals are conducive to a greater volume of specific work being performed.

Iaia, F.M., Rampinini, E., & Bangsbo, J. (2009) conducted the major physiological and performance effects of aerobic high-intensity and speed-endurance training in football, and provides insight on implementation of individual game-related physical training. Both aerobic and speed-endurance training can be used during the season to improve high-intensity intermittent exercise performance.

Iaia, F.M., & Bangsbo, J. (2010) reviewed the physiological and performance effects of speed endurance training consisting of exercise bouts at near maximal intensities in already trained subjects. Athletes from disciplines involving periods of intense exercise can benefit from the inclusion of speed endurance sessions in their training programs.

Fondran, and Kristine Marie (2008) determined the effects of a twice daily SN (Surya Namaskara) yoga practice on resting heart rate
(HR) and blood pressure (BP), flexibility, upper body muscle endurance, and perceived well-being in low to moderately active adult males and females. Surya Namaskara was effective in increasing hamstring flexibility reduced resting heart rate and improving upper body muscle endurance.

Burke et al., (1994) conducted a study to compare the effects of two interval-training programmes. The study concluded that both formats of high intensity aerobic interval-training produce similar changes in VO₂ max and that these changes appear to be independent of the length of the work interval.

Ziemba, A.W., et al., (2003) conducted a study on early effects of short-term aerobic training Physiological responses to graded exercise. This study has shown that decrease in the resting and sub maximal heart rate is the earliest effect of increased physical activity.

David Nunan, Djordje G. Jakovljevic, Gay Donovan, Lynette D. Singleton, & Gavin R.H. Sandercock, et al., (2010) identified the underlying role of resting heart rate variability in the hearts response to graded exercise testing. Resting short-term heart rate variability measurements should be considered when assessing cardiac autonomic health from the heart rate response before, during and/or after exercise.
It is inferred from the above literatures and from the results of the present study systematically designed training programmes would develop the performance standard as the selected dependent variables are very important qualities for better performance in almost all sports and games. Hence it is concluded from the results of the study that systematically and scientifically designed fartlek training and interval running training may be given due recognition and be implemented properly in the training programmes of all the disciplines in order to achieve maximum performance and develop endurance qualities.

The development and enhancement of endurance parameters are an important element in any sports. Currently, there is no research published that investigated the effects of fartlek training and interval running on endurance related parameters. However, research has shown that there was significant improvement on selected endurance parameters and an effective method for improving aerobic and anaerobic endurance/capacity.