Discussion on findings

The result of the study indicated that the Somatotype components such as Endomorphic Component, Mesomorphic Component and Ectomorphic Component, the Health Related Physical Fitness components such as Muscular strength and Endurance, Cardiovascular endurance, Muscular flexibility and Body composition, and Bio-Chemical Variables such as LDL, HDL, TG, VLDL, TC, FBS and Hb improved significantly by undergoing fourteen weeks of training on Yogic practices and Aerobics Exercises by the subjects of experimental groups.

The mean score of Experimental Variable for the control group, the Yogic group and the Aerobic group, pre test, post test and adjusted Post test is presented for discussion in table XXXVIII.
TABLE: XXXVIII

PRE TEST, POST TEST, POST ADJUSTED MEAN OF THE EXPERIMENTAL VARIABLES FOR THE CONTROL GROUP, THE YOGIC GROUP AND THE AEROBIC GROUP

<table>
<thead>
<tr>
<th>S.N</th>
<th>Variables</th>
<th>Control group</th>
<th>Yogic group</th>
<th>Aerobic group</th>
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<tr>
<td></td>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Adj</td>
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<tr>
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<td>ENDOMORPHIC</td>
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<td>169.20</td>
<td>168.55</td>
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<td>5</td>
<td>WEIGHT</td>
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<td>FUMER WIDTH</td>
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<td>CALF GIRTH</td>
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<td>ARM STRENGTH</td>
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<td>ABDOMINAL STRENGTH</td>
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<td>PERCENT BODY FAT</td>
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<td>9.82</td>
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<tr>
<td>14</td>
<td>TWELVE MINUTES RUN</td>
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<td>1993.33</td>
<td>1967.94</td>
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<tr>
<td>15</td>
<td>LDL</td>
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<td>98.51</td>
<td>97.82</td>
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<td>HDL</td>
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<td>TRIGLYCERIDES</td>
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<td>VLDL</td>
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<td>FASTING BLOOD SUGAR</td>
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DIFFERENCES AMONG CONTROL GROUP, YOGIC GROUP AND AEROBIC GROUP

1. The Endomorphic components showed no significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that the training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as showed in bar diagram (Figure:1) the Aerobic exercises reduces more the Endomorphic component than the Yogic practices (Asanas and Pranayama).

2. The Mesomorphic components showed no significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration and the age group relating to this particular study. But the above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as showed in bar diagram (Figure:2) the Aerobic
exercises reduces more in Mesomorph component than the yogic practices (Asanas and Pranayama).

3. The Ectomorphic components improved significantly among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out that the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:3) the Aerobic exercises improved more in Endomorphic component than the yogic practices (Asanas and Pranayama). The weight plays vital role in Ectomorphic component as the weight reduces. Further the height and weight are also discussed below.

4. The height showed a significant change among the Control group, the Yogic group and the Aerobic group fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out that the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:4) that the Aerobic exercises improved more in height than the yogic practices (Asanas and Pranayama).

5. The body weight improved significantly among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed
out that the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:5) that the Aerobic exercises improved more in body weight than the yogic practices (Asanas and Pranayama).

6. The Humerus width showed no significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean which showed in bar diagram (Figure:6) the yogic practices (Asanas and Pranayama) reduces more the Humerus width such as the subcutaneous fat, tendons and cartilage than the Aerobic exercises.

7. The Fumer width showed no significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within
the frame work of duration on the age group relating to this particular study.

But the above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean which showed in bar diagram (Figure:7) the yogic practices (Asanas and Pranayama) reduces more the Femur width such as the subcutaneous fat, tendons and cartilage than the Aerobic exercises.

8. The Bicep girth showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in the bar diagram (Figure:8) that the Aerobic exercises reduces more in Bicep girth than the yogic practices (Asanas and Pranayama). This proved that better muscle tonus and fat burning improved underneath the skin.

9. The Calf girth showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar
diagram (Figure:9) that the Aerobic exercises improved more in Calf girth than the Yogic practices (Asanas and Pranayama). This proved that better muscle tonus and fat burning improved underneath the skin.

10. The Arm strength showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:10) that the Aerobic exercises increases more the Arm strength than the Yogic practices (Asanas and Pranayama).

11. The Abdominal strength showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:11) that the Aerobic exercises increases more the Abdominal strength than the Yogic practices (Asanas and Pranayama).

12. The Total Flexibility showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The
above finding pointed out if higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:12) that the Aerobic exercises increases the spine, back and shoulder Flexibility than the Yogic practices (Asanas and Pranayama).

13. The Percent body fat showed a significant change among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out that decrease in the score meant better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:13) that the Yogic practices (Asanas and Pranayama) reduces more the Percent body fat than the Aerobic exercises.

14. The Twelve minutes run showed a significant change in cardiovascular endurance among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:14) that the Aerobic exercises increases the cardiovascular endurance more than the Yogic practices (Asanas and Pranayama).
15. The Low density lipo protein showed no significant difference among the Control group, the Yogic group and the Aerobic group in on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out if lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as were shown in bar diagram (Figure:15) the yogic practices (Asanas and Pranayama) reduces the Low density lipo protein. But the Aerobic exercises showed an increase in LDL this may be due food habit such as egg, milk, more saturated oil usage, hotel food etc. which could not be controlled during the training period.

16. The High density lipo protein showed a significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out if higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:16) that the Aerobic exercises increases the High density lipo protein more than the Yogic practices (Asanas and Pranayama).
17. The Triglycerides showed no significant differences among the Control group, the Yogic group and the Aerobic group in on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out if lesser the score then better the result of the pre test mean, post test mean and post adjusted mean as shown in bar diagram (Figure:17). The Aerobic exercise reduces Triglycerides more than the Yogic practices (Asanas and Pranayama). This showed that Aerobic exercises induces more on hormones and regulate the release of triglycerides from fat tissue so they meet the body's needs for energy between meals.

18. The Very low density lipo protein showed no significant differences among the Control group, the Yogic group and the Aerobic group in on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out that lesser the score then better the result of the pre test mean, the post test mean and the post adjusted
mean as shown in bar diagram (Figure:18). The Aerobic exercise reduces Very low density lipo protein than Yogic practices (Asanas and Pranayama).

19. The Total Cholesterol showed no significant differences among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding may pointed out if lesser the score then better the result of the pre test mean, post test mean and post adjusted mean which showed in bar diagram (Figure:19) the Aerobic exercise reduces Total Cholesterol than Yogic practices (Asanas and Pranayama).

20. The Hemoglobin showed a significant difference among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. The above finding pointed out that higher the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:20) that Yogic practices (Asanas and
Pranayama) increases the Hemoglobin more than the Aerobic exercises.

21. The Fasting Blood sugar showed no significant differences among the Control group, the Yogic group and the Aerobic group on fourteen weeks of training as done by the subjects of experimental group. It showed that the training could not affect the above said variables within the frame work of duration on the age group relating to this particular study.

But the above finding pointed out that lesser the score then better the result of the pre test mean, the post test mean and the post adjusted mean as shown in bar diagram (Figure:21), the Aerobic exercise reduces Fasting Blood sugar than Yogic practices (Asanas and Pranayama) both stays in normal level.

DIFFERENCES BETWEEN SOMATO TYPE COMPONENT AND EXPERIMENTAL VARIABLE OF CONTROL GROUP YOGIC GROUP AND AEROBIC GROUP

22. The result of relationship between somatotype component and Experimental variables for pre test and post test showed a significance only with (1) Endomorphic component with percent body fat in both Yogic practices (Asanas & Pranayama) and Aerobic exercises (2) Mesomorphic component with percent body fat in both Yogic practices (Asanas & Pranayama) and Aerobic exercises (3) Ectomorphic
component with Arm strength in both Yogic practices (Asanas & Pranayama) and Aerobic exercises and Ectomorphic component with twelve minutes run in Aerobic exercises only.

23. The result of partial relationship between somatotype component and Experimental variables for pre test and post test showed significance only with (1) Endomorphic component with percent body fat in both Yogic practices (Asanas & Pranayama) and Aerobic exercises (2) Mesomorphic component with Total flexibility in both Yogic practices (Asanas & Pranayama) and Aerobic exercises.

24. The result of multiple relationship between somatotype component and Experimental variables for pre test and post test showed a significance only with (1) Endomorphic component with Health related physical fitness variables in both Yogic practices (Asanas & Pranayama) and Aerobic exercises (2) Mesomorphic component with Health related physical fitness variables in both Yogic practices (Asanas & Pranayama) and Aerobic exercises. (3) Ectomorphic component with Health related physical fitness variables in both Yogic practices (Asanas & Pranayama) and Aerobic exercises.

25. The result of difference between the relationship from pre and post test results of correlation coefficient between Somatotype components with Health Related Physical Fitness Variables and Bio Chemical Variables showed a significant relationship between the
Endomorphic Component and the percent body fat for the Aerobic group. There was no significant relationship obtained from the Somatotype component and the Experimental variables, except for the above relationship.

26. The result of difference between the partial relationship from pre and post test values of Fourth order Partial correlation between Somatotype components with Health Related Physical Fitness Variables and Bio Chemical Variables showed a significant relationship between the Endomorphic component and the Percent body fat of Health Related Physical Fitness Variables for Aerobic group. An insignificant relationship was obtained from the Somatotype component with Health Related Physical Fitness variable and Bio Chemical Variables, except for the above partial relationship.

27. The result of difference between the multiple relationships from pre and post test values of multiple correlations between Somatotype components and Health Related Physical Fitness Variables and between Somatotype components and Bio Chemical Variables showed a significant relationship between the Endomorphic components and the Health Related Physical Fitness Variables for the Aerobic group. An insignificant relationship was obtained from the Somatotype component with the Health Related Physical Fitness variables and Somatotype
component with Bio Chemical Variables except for the above relationship.

**SOMATOTYPE COMPONENT ON SOMATOGRAM**

**Control group on somatotype**

28. In control group, since there was no training given there no much difference seen in the somatotype between pre and post test. The Somatogram figure XXIII and XXXIV showed that the pre test mean (2.6 - 1.3 - 4.4) and post test mean (2.5 - 1.2 - 4.5) of the control group Somatotype component values lay in the Ecto-endomorphic area itself. There was very slight change seen in the mean values of first, second and third components of somatotype components (Endomorphic, Mesomorphic and Ectomorphic).

**Yogic group on somatotype**

29. In Yogic group, since the Yogic practices involves different types and variation of intensive practice of 14 weeks of asana and Pranayama, the effect was seen in the somatotype component between pretest and post test. The Somatogram figure XXV and XXVI showed that the pre test mean (3.3 - 1.4 - 3.3) was at the Endo-ectomorph area of Somatogram which was more on Endomorphic and after yogic practices the post test mean (3.2 - 1.1 - 3.6) value of somatotype components were in Ecto-endomorphic area but movement was noticed toward slight Ectomorphic type. There were
slight changes noticed in First component (Endomorphic) and more changes noticed in second and third component (Mesomorphic and Ectomorphic)

**Aerobic group on somatotype**

30. In Aerobic group, since the Aerobic exercises involves different types and variation of intensive practice of 14 weeks of moving, humping and turning movements, the effect was seen in the somatotype component between pretest and post test. The Somatogram figure XXVII & XXVIII showed that the pre test mean (3.2 - 1.9 - 2.9) were at the Endo-ectomorphic area of Somatogram which was more on Endomorphic and after Aerobic exercises the post test mean were (2.9 - 1.2 - 3.4) value of somatotype components were moved more to Ecto-endomorphic area but movement was noticed more towards Ectomorphy. There were more changes noticed in first, second and third component of Somatotype components (Endomorphic, Mesomorphic and Ectomorphic) when comparing with control and Yogic group.