CHAPTER V

SUMMARY, CONCLUSION AND IMPLICATIONS

SUMMARY

The present ever transitionary, ever changing world or world of continuous perpetual leaves its inhabitance in a continuous imbroglio both physical and mental. If one wants to observe / witness the scenes he/she was to continuously move to comprehend its vivid form, mechanized world. Nothing gives a chance for a observer to stop think and form an opinion. The scientist themselves find lost in inextricable web of movement without a precise aim where this life is heading for.

Movement has been and is largely externally oriented in the world of facts and logic explained and written in black and white without any reference to internal and natural. Probably the reason why if one happens stroll through daily news paper generally its filled with news like rape, robbery, terrorism, diseases, unrest etc. Most astonishing is the rapid increase in news about juvenile i.e., young children involved in shootouts, rapes, drug abuses, robbery and ailments like stress, depression, cancer, heart attack etc. Its hearting that the wise are not sitting up & alarmed of the on going situation. All seen to succumb to same and accepting it. The whole aim and idea of education of our off springs is in question. Our children are growing externally and not laterly and internally. The knowledge is acquired for definite purposes like job,
security, status etc. Experience, originality, creativity is butchered at very tender age.

Yoga is an effort to communicate with “self”, internalized and experienced the bliss of getting in touch with internal world. The experimental knowledge of Yogic practice makes the individual grow internally wherein the Laws of nature gives deeper experience and understanding of the external. “Man the unknown” as noble Laureate Dr. Alexis Carrel noble price winner (1959) puts it is still at large without the comprehension of much of scientific achievements. The only way to have peep into its functioning is through internalizing and experience. Yoga is one form by which some form of understanding into man the unknown can happen but in total experimental nature.

The yogic literature is replete with the benefits of Yogic practices to heal various health related ailments and also how to remain in optionum, physical, mental and spiritual health.

It is extremely important to include the Yoga practices in regular school curriculum to help school children to achieve a subtle between internal and external growth for optimal exploitation of human potential. Yoga can help in enhancement of every area of human performance. The west has taken keen interest and has started its practice in nearly all fields i.e., space, industry, sports to education etc. As stated in Bhagavad Gita, that Through constant practices of Yoga, one can overcome all difficulties and eradicate all weaknesses. Pain can be transmitted into bliss, sorrow into joy, failure into success and sickness into perfect
health, Determination, patience, persistence lead us to the goal. With the view to assess the contribution of Yogic Practices on Motor Fitness, physiological and psychological variable the investigator conducted an experimental Senior Secondary School subjects.

**STATEMENT OF THE PROBLEM**

The purpose of this study was to investigate the “Effect of selected Yogic practices on motor fitness, physiological and psychological parameters”.

**OBJECTIVESOF THE STUDY**

This study was conducted keeping the following objective in view:-

1. To assess the effects of selected yogic practices on motor fitness parameters.
2. To examine the effects of selected yogic practices on physiological parameters.
3. To analyse the effects of selected yogic practices on psychological parameters.

**HYPOTHESES :**

This study sought to prove the following assumptions :-

1. It was hypothesized that there will be a significant effect of yogic practices on motor fitness variables of Senior Secondary School Boys.
2. It was hypothesized that there will be a significant effect of yogic practices on physiological parameters.

3. It was hypothesized that there will be a significant effect of yogic practices on psychological parameters.

SAMPLE:

This study was conducted on male subjects of 16 to 19 years of age studying in grades XI and XII in Government Model Senior Secondary School, Sector 23, Chandigarh. The total number of the students in these three grades were ninety eight percent (98%). To ensure the proper selection of subjects, the investigator checked the health records maintained by the school and with the help of a small team of physical instructors eliminated 70 subjects from the list and finally selected Eight (80) subjects by using the random sample procedure by drawing lots. The selected subjects were assigned the following four groups with each group comprising twenty (20) subjects only.

1. Experimental group I. Asana group
2. Experimental group II. Pranayama group
3. Experimental group III. Dhyana group
   Control group IV.

TOOL OF DATA COLLECTION:

Data was collected on the chosen variable at the pre and post experimental stage. The following tests were used to collect the data:
(a) AAHPER Youth Fitness Test (1989) was used to measure the following motor fitness ability of the subjects.

1. **Pull-ups**: To measure arm and shoulder strength.
2. **Sit ups**: To measure abdominal strength and endurance.
3. **Shuttle run**: To measure speed and agility.
4. **Standing Long Jump**: To measure power.
5. **50 Yard Dash**: To measure Speed.
6. **600 Yard run walk**: To measure endurance.

(b) Physiological test were conducted with the following tools.

1. **Vital Capacity**: Spiromet er
2. **Blood Pressure**: (Sphygmomanometer and Stethoscope)
3. **Pulse Rate**: (Stop Watch)

(c) Following Test was used to collect the data on State and Trait anxiety.


**STATISTICAL DESIGN**:

To find out the significance of the differences among the groups as a result of yogic training the analysis of covariance was applied. Since the study employed the random group design and the four groups were
not equal with reference, to the factors examined through the analysis of covariance, the final means and the adjusted final means were listed for significance. In the case of variable where the F-ratio (ANCOVA) was found significant with regard to paired adjusted means. Scheffe’s post-hoc test was applied. The level of significance chosen to test the hypothesis was selected as .05, which was recognized as appropriate in relation to the research process adopted and the equipments used in this study. Finally, to find out the significance of the differences between pre-test and post-test means of the three experimental and control group (t) test was applied.

FINDINGS:

Analysis of covariance indicate that the experimental groups and control group differed significantly on Motor Fitness Variable Pull-up, Sit-up, Shuttle-run and 50 Yard Dash as a result of twelve weeks yogic practices. Whereas the Yogic treatment failed to influence the remaining motor fitness components i.e., Standing Long Jump and 600 Yard run-walk. Further Scheffe’s post-hoc test was applied to know the direction of differences among these groups. Asana group had significantly better level of performance in comparison to Pranayama, Dhyana and Control group. The analysis of covariance also demonstrated significant differences between the adjusted post-test means among the three experimental groups and control group. These differences were found significant (p < .05) The subjects of the Asana group performed more number of Pull-up in 60 seconds as compared to the other groups.
Analysis of covariance of the groups under study on the Motor Fitness Variable Sit-up demonstrated a significant difference between the adjusted post-test means among the three experimental groups and control group. Scheffe's post-hoc analysis confirmed that Asana and Pranayama proved better on the above said variable in comparison to Dhyana and Control groups. The subjects of Asana and Pranayama groups performed more number of Sit-up in 60 seconds.

The statistical results on Motor Fitness Variable Shuttle-run reveal significant difference between the three experimental and control groups. Analysis of covariance demonstrated significant difference between the adjusted post-test means. These differences were found significant (p < .05). Scheffe's post-hoc analysis demonstrate Pranayama group better than the other groups. Subjects performed better on this variable because of the Pranayama treatment.

The statistical results on Standing Long Jump reveal no significant differences among the adjusted post-test means of the three experimental groups and Control group. It shows that Yogic treatment failed to proved better on the above said variable.

The statistical results with regard to the variable 50 Yard-dash (motor fitness) variable demonstrated significant differences as a result of twelve weeks of Yogic practices. These differences were significant at (p < .05) Scheffe's post-hoc analysis reveals that Asana group proved significantly better on this variable.
Analysis of covariance on the variable 600 yard run-walk did not reveal significant differences among the adjusted post-test means of the three experimental and control groups. The above stated findings on the motor fitness components (Pull-up, Sit-up, Shuttle-run, 50 Yard-dash, 600 Yard run-walk) confirms that the hypothesis 1 is partially rejected and partially retained.

Analysis of covariance indicate that the three experimental groups (Asana, Pranayama, Dhyana) and control group differed significantly on physiological variable Vital Capacity, Blood Pressure, and Pulse Rate. Analysis of covariance demonstrated significant differences between the adjusted post-test means among the three experimental groups and control group. These differences were found statistically at \( (p < .05) \). Scheffe’s post-hoc test was applied to know the direction of differences among these groups. Pranayama group was found better in comparison to other two experimental and control groups on the above said variable. The subjects of Asana group performed better on the physiological variable Vital Capacity.

The results with regard to the Systolic Blood Pressure (physiological) demonstrated significant differences between adjusted post-test means on the above said variable as a result of yogic training programme. These differences were found statistically at \( (p < .05) \). Scheffe’s post-hoc analysis reveals that the Asana and Pranayama group performed better in comparison to Dhyna and Control group.
Adjusted post-test means resulted significant differences on the physiological variable Diastolic Blood Pressure. Scheffé’s post-hoc analysis made an evidence of significance difference among three experimental groups and Control group. According to post-hoc analysis treatment of Asana and Pranayama improved the Diastolic Blood Pressure.

ANCOVA results indicate that the three experimental groups and control group differed significantly on Pulse Rate as a result of twelve weeks of Yogic training programme. Adjusted post-test means were found significant on the above variable. These differences were found statistically at (p < .05). Scheffé’s post-hoc analysis confirmed Asana, Pranayama and Dhyana groups better on the above said variable as comparison to control group. The above findings evidenced the validity of hypothesis 2, which has been retained since the results support this hypothesis.

The analysis of co variance resulted a significance difference among the three experimental groups (Asana, Pranayama, Dhyana) and Control group on psychological variables State and Trait Anxiety. The statistical results on State Anxiety indicate that three experimental group and control group differed significantly as a result of twelve week Yogic practices. The post-hoc analysis confirms Asana Pranayama and Dhyana group better in comparison to control group. The adjusted post-test also found significant at five (p < .05).
Analysis of covariance indicate significance differences between the adjusted post-test means of three experimental groups (Asana, Pranayama and Dhyana) and Control group on the variable Trait anxiety. Post-hoc analysis confirmed the significance of Asana, Pranayama and Dhyana group on the above mentioned variable in comparison to Control group. The above findings were significant (p < .05). The above findings justify the validity of hypothesis 3, which has been retained since the results supports this hypothesis.

CONCLUSION

Keeping in view the limitations of this investigation, the following conclusion can be drawn.

1. There were significant difference found between the subjects belonging to three experimental groups i.e. Asana group, Pranayama group, Dhyana group and that of Control group. Asana group performed better than the other groups on motor fitness variable Pull-up.

2. Significant differences were noticed on the variable sit-up as a result of Yogic treatment between the Asana group, Pranayama group, Dhyana group and Control group indicating increase in the number of Sit-up as a post-test result of Yogic practices. However, Asana and Pranayama groups proved significantly better on the above said variable as compared to other two remaining groups.
However, significant differences were not found among the three experimental groups on the variable Sit-up.

3. The subjects belonging to experimental groups i.e., Pranayama group and Dhyana group differed significantly in their respective level of performance (post-data results). However, experimental group (II); i.e. Pranayama group was better than experimental group (III); i.e. Dhyana group on the variable Shuttle-run. Significant difference was found on Shuttle-run between the pre-test and post-test levels of both Asana and Pranayama groups. Whereas no significant difference was found between the pre-test and post-test results of Dhyana and Control groups.

4. Subjects belonging to experimental groups and Control group did not differ significantly in their post experimental results on the variable Standing Long Jump as a motor fitness components. Whereas the Asana and Pranayama groups demonstrated significant pre-test and post-test means differences.

5. The experimental group (I); i.e. Asana exhibit significant difference as compared to Control group on the variable 50 Yard-dash. The three experimental groups did exhibit post-test significant difference on 50 Yard-dash. Whereas no significant differences were found among the three experimental groups.

6. No significance difference was observed between the three experimental groups and Control group on the variable 600 Yard
run-walk. Whereas the post-test results of Asana, Pranayama and Control group were found statistically better on the variable 600 Yard run-walk.

7. The experimental group (II); i.e. Pranayama group did exhibit significant differences on the variable Vital Capacity in comparison to other groups. Pranayama group exhibited significantly more improvement on Vital Capacity in comparison to Dhyana and Control group. Whereas the Asana treatment and Dhyana treatment failed to have any effect on Vital Capacity.

8. Significant differences were found on the variable Systolic Blood Pressure between Asana and Control group, whereas no significant differences were found between Asana and Pranayama group, Asana and Dhyana groups, Pranayama and Dhyana groups as a result of Yogic treatment on the variable Systolic Blood Pressure.

9. Experimental groups; Asana and Pranayama groups exhibited significant differences as compared is Control group on the variable Diastolic Blood Pressure. Whereas no significant differences were found among the three experimental groups on the variable Diastolic Blood Pressure.

10. The subjects belonging to three experimental groups, i.e. Asana, Pranayama and Dhyana groups differed significantly from Control group on the variable Pulse Rate. The post-test results of all the
three experimental groups and Control group proved having positive effect of Yogic treatment on the variable Pulse Rate.

11. The statistical results of three experimental groups (Asana, Pranayama, Dhyana) exhibited significant difference as compared to Control group on State Anxiety. Significant differences were found on the said variable between pre-test and post-test results indicating positive effect of Yogic practices in lowering the State Anxiety of the Subjects.

12. On the variable Trait Anxiety, subjects belonging to experimental groups i.e., Asana, Pranayama and Dhyana groups differed significantly than the Control group. All the three experimental groups exhibited low post-test scores on the variable Trait Anxiety indicating positive effect of selected Yogic practices (Asana, Pranayama and Dhyana) in lowering the Trait Anxiety of subjects.

**IMPLICATIONS**

In the light of the findings of this study the following implication can be drawn.

The modern era has not only brought many blessing in the form of technological advancements, high standard of living, dream world of comforts, high achievements and new challenges, but has also brought worries, frustration, stress, anxiety, almost no physical work, etc. The most affected in today’s fast moving, highly competitive world is the
adolescent who passes through too many changes at a too rapid speed. Delay in providing a solution can cause serious consequences like their indulgence in the dark world of drugs, violence, anti-social activities, rapes etc. there may be many solutions to this problem. One effective solution can be to divert their young minds and energies towards creative and constructive goals and help them in leading a self directed, happy, satisfying and meaningful life. Among many yoga is the most effective method. It can play a vital role in helping an individual is cope effectively with their inner changes and adjust with the external forces by enabling them to develop an integrated, harmonious and balanced personality. It helps in developing positive personality traits like self-confidence, strong will power, mental calmness, poised and balanced altitude, emotional stability and social tolerance along with physical benefits. One attains a fine degree of physical, physiological, mental, moral and emotional health in yoga through self discipline.

The importance of yoga has been well established by several researchers. Studies conducted in this field have been limited in their scope as these has been carried out on specific population, mainly on people suffering from one ailment or other. The present researcher has tried to find the effects of selected yogic practices on Motor Fitness, Physiological and Psychological Variables. The study while confirming the positive contribution of Asana, Pranayama and Dhyana to Motor Fitness, Physiological and Psychological parameters of athletes made an astounding revelation that the groups using Yogic Practices demonstrated better performance which is evident from the post-test performance of the experimental groups to the Control group. It is therefore suggested that
Asana, Pranayama and Dhyana should be used for the improvement in the athletes performance. These Yogic Practices can also be used before competition because they may help in avoiding a number of distraction before the start of competition. Thoughts irrelevant and negative in content may cause disturbance and destabilize the competition. These are likely to create nervousness among the competitors leading a poor response syndrome that betrays the otherwise skilled performance.

Findings of this study also revealed that experimental groups (Asana, Pranayama and Dhyana) performed significantly better than the Control group on the Motor Fitness components (Pull-up, Sit-up, Shuttle-run and 50 Yard-dash). It appears that Yoga Asanas, Pranayamas and Dhyanas contributes positively and significantly on improving fitness, gaining poise, restoring harmonious functioning of the whole system, turning up of all organs, glands and muscles. Modern coach must be aware of the limitations and problems related to competitive sports and learn to practice yoga for better preparedness for competitive sports. It is therefore recommended that the Yogic Practices must be included in training schedule for better performance.

One of the most significant findings of this study was that the experimental groups indicated their superiority over the Control group on the Physiological Variables viz., Vital Capacity, Systolic and Diastolic Blood Pressure and Pulse Rate by performing better as compared to Control group. Further Pranayama group was found better on the Variable Vital Capacity in comparison to other groups. The vital force or primordial life force i.e., Prana manifests itself in the body as a
respiratory function. Pranayama is not simply the breathing, but the control of the muscular force activating the lungs. Healthy breathing depends on the respiratory muscles and their elasticity in Pranayama exercises, the chest muscles are stretched to the maximum and the lungs opened as far as possible. They are thus better prepared to carry out their task. They can exhale more volume of air force fully following maximal inspiration coaches therefore are suggested to use Pranayama exercises in their schedules to optimize the Vital Capacity of the athletes for better output.

The Asana and Pranayama groups demonstrated significant differences with the Control and Dhyana group on the variables Systolic and Diastolic Blood Pressure. Blood is pumped around the body by the heart, passing through the arteries, veins and capillaries. The contraction and relaxation of heart force the blood through the body. And suitable Yogic postures (Asana) may always keep muscles heart in good working orders. Yoga Asana, like, Bandha i.e., raising of the diaphragm gives the heart an excellent massage by raising the diaphragm. The increase and decrease of pressure on the cavity helps maintain the cardiac muscle in good health. Many more Asanas like, Viparitakarani, Sarvangasana, Halasana, Salabhasana, Bhujangasana, Dharnurasana alternately augment and diminish pressure on the heart. Such alternate pressure maintain the correct functioning of the heart. The veins, helped by the arteries and capillaries, carry blood to the heart, struggling in places against the force of growing on the other hand inverted postures Halasana helps in relieving the strenuous effort the veins in the lower part usually made to carry the blood back to the heart, so that it flows without difficulty. Not
only this helps the veins maintain their health, but also strengthens the muscles of the heart. Thus preventing the sudden rise and downfall of Systolic and Diastolic Blood Pressure.

Same is true with Pranayama. During the execution of the Pranayama Ujjayi, Bhasrika and Kapalbhati vibrations are created that spread to almost all the tissues of the organism, including the arteries, veins and capillary vessels. The heart, bring the main organ of the circulation, becomes stronger. The whole circulatory system is toned up and makes itself ready to undergo any and every strenuous exercise. Coaches are therefore suggested to include Yogic Practices in the training schedule for better performance of athletes and better control on Blood Pressure. Asana, Pranayama and Dhyana groups were found significantly better on the variable Pulse Rate as compared to Control group. The Yogic Practices mentioned above make a positive but statistically significant effect on lowering the Pulse Rate of athletes. The Yogic practices not only facilitate the proper blood circulation but also provides sufficient exercise to the veins and arteries to keep functioning properly. Therefore the coaches are advised to include Yogic Practices in training schedule for better control of Pulse Rate.

The three experimental groups (Asana, Pranayama, Dhyana) proved better on State and Trait Anxiety in comparison to Control group. Often high levels of sports competition anxiety interfere with athletic performance. Fear of failure in competition, inferiority complexes, fear of performing low in competition etc. are the causes of such problems. Yoga helps in transforming the negative with positive attitude. It aims at
opening the source of creative inspiration hidden inside the human psyche. It is an act of self manifestation and the multiplicity of our being. It lays the foundations for a higher form of self-development and a deeper consciousness of self, eliminating the undesirable psychological causes. Relaxation along with deep breathing (Pranayama) lowers anxiety as well. Concentration (Dhyana) on the most relevant items prevents from distraction, of negative thoughts balancing of mind helps in gaining self mastery – a complete mastery over emotions. The power of concentration is the greatest strength to awaken the mind and animate the body. When properly directed, it illuminates the facts for us and brings the desired results. Yoga helps in maintaining a fit body, gaining calmness and stability of mind required for attaining higher objectives like self analysis, self evaluation, self realization and spiritual culture. This spiritual touch helps the individual in maintaining mental calmness, which definitely contribute in controlling anxiety.

An important point to be made here is that the future researchers must make an attempt to study the dynamics of Yoga, for more authentic findings.

IMPLICATIONS FOR FURTHER RESEARCH

* This study was conducted on the 16 to 19 years of age group. The same study is suggested to be conducted on the different high and low age groups.

* Similar study should be conducted on female subjects.
The scope of the present study could be extended to the different Motor Fitness, Physiological and Psychological parameter.

Experimental studies could be done by giving different combination of Asana, Pranayama and Dhyana exercise.

Other steps of Ashtang Yoga can be introduced in the experimental and theoretical studies.