Chapter 5

Conclusions, Recommendations and Suggestions

5.1 Background of the study

In the existing literature, it has been reported that in all fields of a human being’s attempt, organized objectives and scientific practices were followed in accordance with the principles based on knowledge, understanding and application of knowledge of science. The field of games and sports was also no exemption to this. Nations like U.S.A., Germany, Russia, Australia, Britain and others have made progress in games and sports like track and field, soccer, hockey, basketball and so on. The presentation level of sportsman in various games and sports is showing substantial enhancement steadily. The important factor responsible for this enhancement is the expansion of new training methods based on scientific principles derived from exercise physiology. These are necessarily integrated in physical education and highly developed sports training. At the same time, development of improved techniques and tactics, of new equipment and improved facilities and scientific understanding rendered by the sport scientists is also responsible for improved performance.

5.1.1 Suryanamaskar

Fit physiological system of the body must function well enough to support the specific activity that the individual performs. To get rid of physical problems, Suryanamaskar is a simple yogic exercise that provides immense health benefits. Suryanamaskar is a sequence of yogic postures along with chants that together comprise complete yoga.
5.1.2 Breathing exercise (Pranayama)

Breathing exercise or Pranayama aims at bringing the involuntary functions of the respiratory mechanism within human control. The term Pranayama has been constituted by two words: Prana + Ayama. Prana is the vital force which pervades the whole cosmos. Prana is more subtle than air and can be defined as the energy essence that is within everything in the universe. In the process of breathing when the 'prana' air is inhaled, definite action takes place. One is related to the ingestion of oxygen into the alveoli and the other to the ingestion of the nervous energy into the brain system. Ayama means to control or to give a rhythm or a definite flow.

5.1.3 Om Chanting

"Om" or "Aum" is the universal sound that vibrates in the universe. Chanting this sound helps to bring peace and calm to the body, mind and soul by merging the vibrations of the body with that of the universe.

5.2 Statement of the Problem

Most investigations attempt to assess the value of physical exercises as a means of altering physical efficiency. The activities generally involve higher expenditure and are commonly believed to be effective in contributing to physical fitness and performance. The effectiveness of Suryanamaskar is very distinct, but the review of literature doesn't reveal many studies investigating the effects of Suryanamaskar on the performance of 50 metre dash in swimming. Swimming performance can be enhanced by improving breathing techniques. The breathing can be improved in indigenous way by implementing
Suryanamaskar, specific breathing exercise and Omkar chanting. Suryanamaskar and Omkar chanting are the easy and very economical ways to implement in the coaching system of the swimming. Therefore the researcher selected the topic for investigation “Effect of Suryanamaskar, Breathing Exercise and Omkar Chanting on Swimming Performance of Swimmers aged 8 to 16 years”.

5.3 Objectives of the study

Following are the objectives of the present study,

1. To prepare Suryanamaskar Program.
2. To prepare Breathing and Omkar chanting program
3. To compare the effects of Suryanamaskar, and Breathing and Omkar Chanting on 50 metre freestyle swimming performance of different age group boys. (Comparison of Mean performance of Post-test concerned with different treatments)
4. To study the effect of different treatments (Suryanamaskar, and Breathing and Omkar chanting and Control group) on 50 metre freestyle swimming performance of different age group boys. (Pre-test and Post-test comparison)

5.4 Hypothesis

On the basis of assumptions made and literature reviewed, the present investigator had formulated the following Research Hypotheses:

$H_0$: There would be no significant difference found between 50 metre freestyle swimming performance of different groups receiving treatments of Suryanamaskar, Breathing exercises and Omkar Chanting.
Researcher was also interested in finding the effect of each program on the swimming performance separately. To test the same, the researcher stated the following research hypotheses:

\[ H_1: \text{Different treatments would be found significantly effective for 50 metre freestyle swimming performance of different age-group boys} \]

5.5 Findings from the Review of Literature

The related reviews were divided into following groups:

- Reviews related to Suryanamaskar
- Reviews related to Breathing Exercises
- Reviews related to Omkar Chanting
- Reviews related to Swimming Performance
- Reviews related to Statistical Methods

The above reviews of the study were conducted on different physical, psychological, general motor fitness components related to health and fitness. They are related to this study, but from all these reviews the researcher found that the present study was totally different and not being covered by any other researcher. This review proves that the present investigation was totally new and no study was done previously in this area.

5.6 Design of the study

Design of the study is the blueprint of the procedures that enable the researcher to test hypothesis by reaching valid conclusions about relationships between independent and dependent variables. Present study was experimental in nature.
Pre-test post-test true experimental design was used to identify the effect of the training on the swimming performance of the subjects. The researcher has chosen a parallel group design for conducting experiment in the present study. This study consists of one control group and the other is an experimental group. The experimental group received selected dependent variable practice training, whereas the control group did not. Pre-test and post-test programs were organized before and after an experimental period of 12 weeks.

As the nature of the study was experimental, the study was to implement 2 X 3 X 4 factorial designs to identify the effect of Suryanamaskar, Breathing exercise and Omkar chanting program on boys only. In this study, there was a pre-test and post-test, three treatment variables namely Suryanamaskar, Breathing Exercise and Omkar Chanting and Control and four age groups included under 10 years, under 12 years, under 14 years and under 16 years.

5.7 Population and Sample

For the present study the population was of 200 competitive boy swimmers of age between 8 to 16 years practicing at various swimming pools of Pune city. The swimming pools included S.P. College swimming pool, Tilak, Choice Health Club, Harmony, Chaitanya Health Club, Pegasus, and Phule swimming pool. From the population, 120 subjects were conveniently selected and distributed in Suryanamaskar training group, breathing exercise and Omkar chanting group and control group. (Table 5.1)
Table 5.1 Sample of the Study

<table>
<thead>
<tr>
<th>Group</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suryanamaskar</td>
<td>40</td>
</tr>
<tr>
<td>Breathing Exercise &amp; Omkar Chanting</td>
<td>40</td>
</tr>
<tr>
<td>Control</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

Selection of sample:

120 students were pooled as sample from the population by using the convenient sampling technique. They were divided into three groups viz, two experimental groups and one control group, consisting of forty students each. Experimental group was given specific selected practice training program of 12 weeks to observe the performance of boy swimmers of age ranging between 8 to 16 years.

5.8 Selection of Variables and Tests

5.8.1 Independent Variables

In this study, Suryanamaskar, Breathing Exercises and Omkar Chanting were the independent variables.

5.8.2 Dependent Variables

In the present study, the dependent variable was the 50 metre freestyle swimming timing.
5.9 Criterion Measures and Tools used

In this present investigation the researcher decided to see the effect of Suryanamaskar, breathing exercises and Omkar chanting on the performance in 50 metre Freestyle swimming. Norms were not required; hence 50 metre Freestyle swimming performance was tested for comparison and was recorded nearest to 1/100th of a second.

5.9.1 Description of 50 metre swimming freestyle timing test

**Purpose** was to measure forward swimming speed.

**Instructions** - The player assumes a ready position on the starting. On the whistle command the player jumps into the pool and starts swimming 50 metre as fast as possible.

**Equipment** used was a standard swimming pool, a stop watch, whistle, score cards or recording sheets and pencil.

**Scoring** - The total time elapsed between the start and the moment the student touches the finish wall is the recorded score. Time is reported to the nearest tenth of second.

5.10 Procedure of the study

The boy swimmer students (N=120) were conveniently selected by the researcher for the present study. Their name, birth date and age was collected and confirmed from the school register. These subjects were divided into three groups namely, two experimental groups and one control group, each consisting of 40 students. After discussing with the experts, the duration and repetitions of
each selected Suryanamaskar, breathing exercises and Omkar chanting were fixed and accordingly the training program was planned.

The entire study or training program was conducted in three phases

a. Pre test

b. Suryanamaskar, Breathing exercises and Omkar Chanting training program of 12 weeks

c. Post test

5.11 Statistical Tools

As the present study is for identifying the effect of two training methods on the swimming performance, the following test was utilized

1. Mean - Mean is the arithmetic average of 50 metre freestyle swimming performance score.

2. Standard Deviation - The standard deviation is the square root of the variance of 50 metre freestyle swimming performance score. (Best & Kahn, 2014)

3. One-Way ANOVA – Simple analysis of variance (ANOVA) or one-way ANOVA is an effective way to determine whether the means of more than two samples are significantly different. (Thomas, Nelson, & Silverman, 2005)
5.12 Major Findings

On the basis of the findings after testing null and research hypotheses, the researcher concluded the following results:

i) Post-test means compared by one way ANOVA for 50 metre swimming performance of boys in the age group under 10 years showed that Suryanamaskar and Breathing and Omkar Chanting exercise were significant for improvement in 50 metre swimming performance. Also, using Post hoc test, researcher stated that both these treatments were equally best to improve 50 metre swimming performance.

ii) Post-test means compared by one way ANOVA for 50 metre swimming performance of boys in the age group under 12 years showed that Suryanamaskar and Breathing and Omkar Chanting exercise were significant for improvement in 50 metre swimming performance. With the use of Post hoc test, researcher stated that both these treatments were equally at par to improve 50 metre swimming performance.

iii) Post-test means compared by one way ANOVA for 50 metre swimming performance of boys in the age group under 14 years showed that Suryanamaskar and Breathing and Omkar Chanting exercise were significant for improvement in 50 metre swimming performance. Using Post hoc test, researcher stated that both these treatments were equally best to improve 50 metre swimming performance.

iv) Post-test means compared by one way ANOVA for 50 metre swimming performance of boys in the age group under 16 years showed that
Suryanamaskar and Breathing and Omkar Chanting exercise were significant for improvement in 50 metre swimming performance. And using Post hoc test, researcher stated that Suryanamaskar treatment was best compared to Breathing and Omkar Chanting exercise to improve 50 metre swimming performance.

v) In this study applying paired sample ‘t’ test, researcher found that Suryanamaskar was an effective treatment to improve 50 metre freestyle swimming performance for the age group under 12, 14 and 16 years. But, Breathing and Omkar Chanting exercise was an effective treatment to improve 50 metre freestyle swimming performance only for the age group under 16 years. In this study, significant improvement was found in control group for the age group under 10, 14 and 16 years.

5.13 Conclusion

Researcher after stating major findings concluded that 12 weeks of training program in Suryanamaskar, breathing exercises and Omkar Chanting had significant effect on 50 metre freestyle swimming performance of 8 to 16 years old boy swimmers from Pune city except for age group under 10 years.

5.14 Recommendations

On the basis of the findings and conclusions of this research study, the following recommendations and suggestions were stated:

a) In this study, findings were based on boys sample only. Researcher suggested that study on girls sample would be necessary as they could have different abilities.
b) Further investigations with large sample and different variables may add some new findings.

c) This study was based on age group of 8 to 16 years. Next study would be on different age groups like youth, older adults etc.

d) It was recommended that similar study can be conducted on other swimming styles and for a different distance.

e) It was recommended that the control and training of treatment variables should be very strict.
References

