Chapter V
Summary, Discussion, Conclusions and Recommendations

5.1 Summary
Women have proved their mettle in every field and in every sphere. They are not just moving, but marching ahead with remarkable zeal and gusto. Every day they play myriad roles and take on a thousand responsibilities with amazing ease. Silently yet smilingly; they lead a very tough and strenuous life. Their sedentary lifestyle has been classified as a primary risk factor in cardiovascular disease approaching towards hypertension. Female teachers in Mumbai too have a hectic life, reaching school on time after travelling long distances, performing various responsibilities both at home and at school. This indeed leaves them with practically no time for themselves. But at the same time, it is of paramount importance to see that we are physically as well mentally fit. Since there are enormous responsibilities on teachers’ shoulders, the increase in stress could lead to hypo-kinetic diseases.

To overcome such problems, a viable solution is to perform physical activity or exercise. The world of fitness and exercise is becoming increasingly complicated and often time consuming. A women’s fitness program that is individually customized is usually very expensive because it usually requires hiring a personal trainer. It is a fact that most people cannot afford it because it can cost thousands of rupees as well as time. The researcher has seen a lack of Health and Fitness awareness in Teachers. Fitness has the least priority in their lives. Financial constraints, lack of motivation and their very busy schedule leave them very unfit more-so functionally unfit. The challenge is to find a solution which will be easy to follow scientifically designed, interesting and achievable.

The most probable solution to achieve Functional Fitness could be found in the practice of traditional form of exercises with less expenditure is SuryaNamaskar with Omkar Chanting and Assistive Yoga with Pranayama. It was, therefore, assumed that the combination of SuryaNamaskar, Omkar Chanting and Assistive Yoga with Pranayama might prove better especially for restoring the Functional Fitness of Secondary School Female Teachers in Mumbai.
This is the genesis of this present study and the objective of the study was to measure Functional Fitness of school teachers and design two Modules for improving Functional Fitness and to measure the retention effect of both the modules. Based on the observations three main research hypotheses were formulated with five sub-hypothesis in the first two.

This study was conducted on sixty secondary school female teachers from Mumbai (n=60), aged 30 to 50 years, residing at Mumbai were pooled for this controlled experiment. They were conveniently assigned to three groups, viz., Module I (Gr. I), Module II (Gr. II), and control group (Gr. III) and special care was taken in such a way that sufficient number of sample represents the population. All the subjects were from Guru Nanak Higher secondary school situated at G.T.B. Nagar in Mumbai. Total duration of the experiment was for 16 weeks i.e., 8 weeks for training, 8 weeks for follow-up.

5.2 Discussion
The discussion will throw light on the overall finding of the experiment and then elaborately discuss the results with respect to each variable of Functional Fitness. This discussion will also consider the effect of the follow up study. Consolidated tables of the results are given below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Module I</th>
<th>Module II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Endurance</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Agility</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Flexibility</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Balance</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Muscular Strength</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Functional Fitness</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓: Significant Difference; X: No significant Difference;
Overall Findings

The statistical analysis has revealed that both the modules, Module I (SuryaNamaskar and Omkar Chanting), and Module II (Assistive Yoga and Pranayam) have shown a positive effect in improving Functional Fitness. This finding corresponds to Cowens, V.S.’s work which found improvements in Functional Fitness in a Worksite yoga initiative. However there is no significant difference found between the two modules, meaning that both programs are effective and none is better than the other. This could be attributed to the fact that it has been proved scientifically that the traditional forms have an impact in improving various fitness factors. However, all the factors of Functional Fitness do not seem to respond to the treatments similarly in both the Modules. In Module I (SuryaNamaskar and Omkar Chanting) but for Flexibility and Muscular Strength, the other three factors have shown significant improvement, while in Module II (Assistive Yoga and Pranayam) all the five factors have shown significant improvement. It is therefore apparent that the use of props in Assistive yoga have facilitated the subjects to attain the correct posture and hold the same for longer duration, thereby giving them the maximum benefit of the asanas; which was not so in Module I, where they had to get into the different positions by themselves and were limited by their functional ability. This is substantiated further by findings by Kristine, A & Joseph, A. who also agree that the intensity of the activity make the regimen easily accessible. Paul, P., Hayden, J., Iyengar, B.K.S., et. al. further clarify that the use of props have a profound effect if correctly sequenced. Thus we can say that Assistive yoga and Pranayam helps to improve Functional Fitness as compared to
SuryaNamaskar and Omkar chanting. The study also supports the use of SuryaNamaskar which is a composite of several Asanas, and propounds it to be beneficial for improving Functional Fitness.

- **Follow up Study**

  The follow up study shows negligible improvement in Functional Fitness in Module I (SuryaNamaskar and Omkar Chanting) with a slight improvement in Module II. With respect to the factors, there is a significant improvement in Agility, Flexibility and Muscular Strength in Module I (SuryaNamaskar and Omkar Chanting) and Aerobic Endurance, Agility, Flexibility and Muscular Strength in Module II (Assistive Yoga and Pranayam). This indicates that Functional Fitness cannot be retained easily, and one needs to put in one’s sustained and consistent effort to maintain one’s Functional Fitness, in simple terms, one must exercise regularly. The most important finding is that there seems to be no retention effect in both Modules with respect to Balance. This highlights the need to continue lifelong practice for maintaining balance. In fact it is seen that balance scores are less than the Pre-test also in the follow up. The other factors show retention effect in both Modules, but the level is low, Aerobic endurance has shown no retention only in Module I.

- **Functional Fitness Factors**

  **Aerobic Endurance** has shown significant effect in both modules, indicating that both the treatments SuryaNamaskar and Omkar Chanting and Assistive yoga and Pranayama have both proved to be effective methods. These findings are in unison with research findings of Bhutkar, P.M. and others who concluded, that SuryaNamaskar practice can be advocated to improve cardio-respiratory efficiency.

- **Agility and Flexibility**

  Agility and Flexibility have shown a significant improvement in Module II, whereas only Agility has the desired positive effect in both the Modules. Flexibility has shown positive result only in Module II. The fact that Flexibility has not shown significant improvement in Module I (SuryaNamaskar and Omkar Chanting) is not in keeping with other research findings of Schatz, M. P., Tekur, P. et. al. and Bal,B.S., & Kaur, P. J. The researcher is of the opinion that this could be attributed to the duration of
the experiment, the basic fitness level of the subjects and the interest and commitment of the participants.

**Muscular Strength**
There is found to be no significant improvement in this factor in Module I which is totally opposed to the findings in Module II. This effect is similar to Adkins, M.A.’s results, but disagrees with the findings of Fondran, & Kristine, M. and Shankar, G. & Pancholi, B. (2011) who concluded that SuryaNamaskar was effective in improving flexibility and upper body muscle endurance. This disparity could be because the resistance and intensity required for the development of Muscular Strength may not have been sufficiently achieved in the course of the present experiment and would need further research.

**Balance**
This factor is singularly important as the age group and the lifestyle of the subjects warrant its assessment and development. Balance has shown to be significantly positively affected by the treatment in both the Modules, but there seems to be a loss in the retention effect. This is a great cause of concern, particularly for this age group and especially females, as studies have shown them to be susceptible to accidents arising due to lack of Balance. The bottom line then is to educate people to commit and sincerely pursue the achievement of Fitness particularly Functional Fitness.

### 5.2.1 Conclusions
This experiment, within limitations, helped the investigator to warrant the following conclusions:

- It can be rationally concluded that the training interventions (i.e., Module I, Module II), are beneficial for improving the Functional Fitness of the Secondary School Female Teachers from Mumbai.
- The major conclusions are that SuryaNamaskar and Omkar Chanting and Assistive Yoga and Pranayam can be effectively used to enhance Functional Fitness for females 30 to 50 yrs of age. The Assistive asanas and Pranayam which use props should be adopted initially as they seem to yield better results as all factors can be improved significantly in a short time. The fitness factor Balance
needs special attention and should be pursued for life as there is practically no retention effect. SuryaNamaskar and Omkar chanting need to be researched further with respect to the intensity, duration and modifications so as to yield better results. To sum up, the vast Traditional forms of Indian Exercise seem to hold the key to almost all of our Fitness requirements and pose to be acceptable, affordable and achievable for the urban population.

5.3 Recommendations
On the basis of the results and conclusion made, this study recommends:

- Secondary school female teachers from Mumbai can opt for either Module I (SuryaNamaskar and Omkar Chanting) or Module II (Assistive yoga and Pranayama) for achieving Functional Fitness.
- The government, schools, N.G.O’s., teacher training institution’s etc. should set up centers to teach SuryaNamaskar, Omkar Chanting, Pranayama and Assistive yoga, so that the common man can benefit from the same.
- The government and corporations should conduct mass programs for people specially women and educate them about the need for developing and maintaining Functional Fitness.
- Worksite facilities should be provided especially in urban cities to promote this concept and provide necessary infrastructure.
- Further research needs to be done on the different factors and their weightage in Functional Fitness given the present lifestyle.
- New methods of evaluating Functional Fitness should be developed through research.
- Functional Fitness and work efficiency, productivity and absenteeism needs to be studied at length.

5.4 Contribution to the Knowledge
Functional Fitness is a natural phenomenon for living beings. One can be functionally fit by adopting various strategies. Indian traditional texts claim the usefulness of Yoga as a means for being functionally fit and for controlling fitness related hazards. This study has scientifically proved and contributed the use of traditional forms in the improvement of Functional Fitness.
This study also gives a message to the Indian Fitness educationists that proper implementation of SuryaNamaskar and Omkar Chanting and Assistive yoga and Pranayama need to be further explored to achieve the desired effect.