Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Good health and physical fitness cannot be taken for granted, especially with today's sedentary and automated styles; contrary to our modern lifestyle fostering unfitness. There has been a tremendous upsurge during the past few years to promote physical fitness. One is tempted to ask why there appears to have been a sudden emphasis on physical fitness over the last few years. The reason being that the problems existing today is that ordinary work of daily living no longer provides enough vigorous exercise to develop and maintain good muscle tone or cardio-vascular and respiratory fitness.

Machines have replaced man in the home, factory and on the farm. They have practically eliminated the need to walk, or climb stairs in many instances. In relation to school children, the television sets have particularly an effect on their physical activities.

The beneficial effects of regular exercises on maintaining and regaining physical fitness have been well
documented, and this has been accompanied by a great deal of activity in developing fitness programmes. Physical Education teachers, experts and parents express the need for specific guidance on how to assess the physical proficiency and progress of the individuals. It would seem that such guidance is best achieved when it is based on scientific research.

In Jammu and Kashmir State awareness about physical fitness has been growing steadily over the last few years, especially since the inclusion of physical education in the school curricula, but its evaluation procedures are still ill conceived. To enable physical education teachers, school officials and parents to make co-ordinated efforts towards the improvement of the fitness of male students of the state, there is a need to provide with specific guidance concerning the evaluation of physical fitness. Therefore, the present study was undertaken to evolve physical fitness norms for male students of high and higher secondary schools of Jammu and Kashmir State and for that purpose AAMPER Youth Fitness Test was adopted.

Four thousand and two hundred male students belonging to 6th to 11th class of age 13 through 19 years were randomly selected from high and higher secondary schools of Jammu
and Kashmir State, to act as subjects and they were administered the AAHPER Youth Fitness Tests. Variables selected for the study were pull-ups (arms and shoulder girdle strength); bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), shuttle run (agility), 50 metre dash (speed), 600 metre run walk (cardio-vascular endurance). The data on these items of the test were collected in accordance with the standard procedures laid down in the literature of AAHPER Youth Fitness Test manual, manual Virginia (1976), with the assistance of physical education teachers and coaches working in the various schools of the state. Subjects selected for the study comprised of seven groups i.e., from 13 through 19 years of age, each group comprised of 600 subjects.

Quantitative measurements for each of the subjects of each group were taken in selected variables using standard techniques. The mean difference in each of the variables were analysed by the analysis of the variance. The Scheffe Test was used wherever inter-group variance was found to be statistically significant.

The 'f' ratio was found to be statistically significant in all the variables i.e., pull-ups (arms and
shoulder girdle strength), bent knee sit-ups (abdominal strength), standing broad jump (explosive/strength), shuttle run (agility), 50 metre dash (speed), 600 metre run/walk (cardio-vascular endurance).

The analysis of variance and application of Scheffe test showed that age group 14 years was significantly superior to 13 years age group in bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), shuttle run (agility), 50 metre dash (speed), 600 metre run/walk (cardio-vascular endurance). However, mean gains made by 14 year age group and 13 year age group were not found statistically significant in pull-ups (arms and shoulder girdle strength).

The mean gains obtained by 15 years age group were significantly superior to 14 years age group in standing broad jump (explosive strength), 50 metre dash (speed), 600 metre run/walk (cardio-vascular endurance). However, mean gains made by 15 years age group and 14 years age group were not found statistically significant in pull-ups (arms and shoulder girdle strength), bent knee sit-ups (abdominal strength), and shuttle run (agility). The mean gains obtained by 16 years age group were significantly superior to 15 years age group in pull-ups (arms and
shoulder girdle strength), bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), shuttle run (agility), and 50 metre dash (speed). However, the mean gains made by 16 years age group and 15 years age group were not found statistically significant in 600 metre run/walk (cardio-vascular endurance).

The mean gains obtained by 17 years age group were significantly superior to 16 years age group in standing broad jump (explosive strength), 50 metre dash (speed). However, the mean gains made by 17 years age group and 16 years age group were not found statistically significant in pull-ups (arms and shoulder girdle strength), bent knee sit ups (abdominal strength), shuttle run (agility) and 600 metre run/walk (cardio-vascular endurance).

The mean gains obtained by 18 years age group were statistically superior to 17 years age group in pull-ups (arms and shoulder girdle strength), bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), 50 metre dash (speed) and 600 metre run/walk (cardio-vascular endurance). However, the mean gains made by 18 years age group and 17 years age group was not found statistically significant in shuttle run (speed).
The mean gains obtained by 19 years age group were statistically superior to 18 years age group, in 50 metre dash (speed). However, the mean gains made by 19 years age group and 18 years age were not found statistically significant in pull-ups (arms and shoulder girdle strength), bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), shuttle run (agility), 600 metre run/walk (cardio-vascular endurance).

The statistical analysis of the data indicates that three different scales for presenting physical fitness norms were constructed for male students of the high and higher secondary schools of the Jammu and Kashmir State. The three different scales were prepared because each has its own implications as follows:

Percentile scale can be used as a ready reckoner to compare one's performance with others in the group but it is not a standard scale.

Hull scale is a compromise between 6-sigma scale and T-scale and it is a standard scale which can be used for the same group as it covers the whole population.
T-scale is the most commonly used of all standard score scales and it provides for the grading of performances outside the normal range where performances may even be higher or lower as compared to the population considered, but its ends are seldom or never utilized.

These scales were prepared separately for different items of physical fitness test based on various age groups considered in this study. Age-wise norms were supported by the age-wise mean differences in their performances on different items of physical fitness.

Conclusions

Based on the findings and within the limitations of the present study, the following conclusions may be drawn:

1. The subjects belonging to the age groups 16 through 19 years showed better performances in pull-ups (arms and shoulder girdle strength), bent knee sit-ups (abdominal strength), standing broad jump (explosive strength), 50 metre dash (speed), shuttle run (agility) and 600 metre run/walk (cardio-vascular strength), over the other age groups 13 through 15 years.
2. On the average physical fitness improved linearly according to age with the subjects following in age group of 16 years and 19 years exhibiting superiority over the other age groups employed in this study.

3. The three scales namely, the Percentile Scale, Hull Scale and T-Scale prepared for age groups 13 years through 19 years separately for each of the test items of AAHPER Youth Fitness Test have been presented in Chapter IV, which could be referred to as for the objectives of grading.

**Recommendations**

In the light of the conclusions drawn, the following recommendations are made:

1. The teachers of physical education and coaches should utilise the findings of this study in developing scientific programmes of training and also while selecting potential sportsman for participation at different level of competitions.

2. It is suggested that norms prepared in this study may be adopted by the State Education Department to evaluate the physical fitness of the male students belonging to the ages 13 through 19 years.
3. The present study may be repeated with subjects of age groups and sex other than those employed in the study.

4. On the basis of prepared norms of various age groups and sex, the fitness levels of the students of different regions of the country may be compared.

5. Similar norms may be prepared separately for the male and female students belonging to rural and urban areas.

6. This study will provide one of the criteria for selecting potential beginners in games and sports.