SUMMARY

The purpose of the study was to construct motor fitness tests (a test battery) for female volleyball players representing their colleges.

The subjects were 300 players representing different colleges of the State of Punjab. They were from different universities of Punjab. Their ages as obtained from the college records ranged from 17 to 22 years.

The tests under question were developed through the factorial analysis technique. The study was conducted in two phases.

In the first phase a list of test items was prepared in order to measure the desired qualities of motor fitness of volleyball players, through gleaning the relevant literature available, consulting coaches and other experts in the field and through direct observations of the performances of the players. Out of this list, 27 items were selected and were administered
to 100 college-representing female volleyball players in 1987-88. The subjects were tested on these 27 different items of the motor fitness test. The data collected from these tests was used for factor analysis. Through this analysis technique, 10 factors were extracted after an orthogonal rotation of each factor, except three. The test items which had the maximum loading were selected for a test battery. Each factor was given a suitable name.

The test battery consisted of seven tests, namely spike jump, W-M run, W-M agility, push-ups, the 20-metre run, the stick test and bend and reach. The scientific authenticity of the tests was established by computing reliability, objectivity, validity and specificity. The co-efficient of reliability obtained for the spike jump, W-M run, W-M agility, push-ups, the 20-metre run, the stick test and bend and reach were .82, .83, .88, .92, .90, .95 and .80 respectively. This indicates that the test items are reliable. For establishing reliability, the tests were administered on both occasions by the investigator herself.

For objectivity, an assistant administered the tests and the coefficient of objectivity for the spike jump,
W-M run, W-M agility, push-ups, 20-metre run, stick test and bend and reach were .80, .80, .78, .94, .91, .92 and .78 respectively. These values indicate that the motor fitness tests for female volleyball players are objective.

For establishing validity, construct validity, comparison validity and validity were computed by relating the performances of the volleyball players to each of the test items. To establish construct validity, the factor analysis technique was used. The second type of validity, which was termed comparison validity, was established by the significant differences that emerged upon comparing volleyball and non-volleyball players. In this instance the motor fitness tests developed by the researcher were applied to the two groups and the 't' test was applied on the data collected on the test items spike jump, W-M run, W-M agility, push-ups, 20-metre run, stick test and the bend and reach test. Significant differences were seen as the t-values were 3.78, 3.31, 6.16, 3.50 and 6.29, respectively, the exceptions being the 20-metre run and the bend and reach item. This comparison of t-values established the comparison validity of the test. It also established the specificity of the test.
The third type of validity was computed by relating the performances of the volleyball players to each of the test items and their playing ability. The resulting coefficients were spike jump .84, W-M run .79, W-M agility .76, push-ups .79, 20-metre run .72, stick test .69 and bend and reach .70, which were significant at the .05 level of confidence. Besides, the composite score of the selected test items was correlated with the playing ability of the volleyball players. The value obtained was .83.

The second phase related to the preparation of norms: Three hundred female volleyball players were administered the items of the test battery. The Hull Scale and the T-Scale were used to prepare the norms for different test items for college females playing volleyball.

CONCLUSIONS

Within the constraints and limitations of the study, the following conclusions can be enumerated:

1. The factor analysis study yielded 10 motor fitness factors.

2. The battery of tests developed by the researcher has the ability to predict the motor fitness of female volleyball players.
3. All seven tests (spike jump, W-M run, W-M agility, push-ups, 20-metre run, Stick test and bend and reach) showed a highly significant relationship with volleyball playing ability.

4. The relationship between the composite score of all the test items and the playing ability of the subjects was found highly related and significant as well.

5. A significant difference in the mean was found to exist between five test variables—spike jump, W-M run, W-M agility, push-ups and stick test—when applied to volleyball and non-volleyball players.

6. The newly developed battery of motor fitness tests meet the criterion of scientific authenticity, that is, the test items are reliable, objective and valid.

7. The motor fitness test battery has been developed and standardized for female volleyball players representing different colleges of three universities of Punjab—Punjabi University, Patiala; Guru Nanak Dev University, Amritsar; and Panjab University, Chandigarh.
RECOMMENDATIONS

In the light of the findings of the present study, the following recommendations could be made:

1. Coaches could develop specific conditioning programmes for female volleyball players in accordance with the findings of the study.

2. Volleyball coaches could use the battery of motor fitness tests periodically to evaluate the effectiveness of their conditioning programmes and monitor the progress made by the players. The norms of this study may also help in assessing the development of the motor fitness of upcoming female players for the future.

3. Similar studies could be taken up by involving both sexes of volleyball players at different levels.

4. Similar studies could be conducted for other sports disciplines as well.

5. The results of this study could be used by coaches as an aid to the process of screening and selecting players for their teams.
6. Finally, the study could help overcome the coaches' bias, if any, regarding the motor fitness of volleyball players as the test is an objective measure for assessment.