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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to compare and analyse the variations in selected anthropometric, motor performance, physiological and psychological variables among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University Intercollegiate level medal winning team players.

The present study was conducted on 120 male subjects from selected four games namely Football, Basketball, Volleyball and Kabaddi. Thirty male players each from four selected team games who had participated in the Kuvempu University Intercollegiate tournaments and secured first three places were selected as subjects for this study. The age of the subjects were ranging from 19 to 24 years.

The research scholar had gone through the scientific literature pertaining to the analysis of anthropometric measurements, motor performance, physiological and psychological variables from different

sources and also consulted the experts in these areas. Along with the said literature and expert opinion, the administrative feasibility in terms of availability of instruments and expertise for measuring and recording of data was also given due consideration while selecting anthropometric measurements, motor performance, physiological and psychological variables. Based on the above mentioned criteria the following variables were selected.

The anthropometric measurements, namely, height, body weight, upper arm girth, chest girth, thigh girth and calf girth of the subjects were measured.

The motor performance were measured by administering tests; namely pull-ups to assess explosive strength, 50 m dash to assess the speed, 4x10m shuttle run test to assess the agility, standing broad jump to assess the power, and 600 yards run / walk test to assess endurance of the subjects.

In order to analyse the status of physiological variables among the selected team game players, the resting pulse rate, the systolic and diastolic blood pressures, vital capacity were measured to assess cardio-

respiratory fitness. In order to assess the body composition in term of body fat percentage, skin fold measurements at biceps, triceps, sub-scapular and super iliac sites were taken.

The psychological variables namely, sports achievement motivation and sports competition anxiety tests were carried out using standard questionnaires, SAMT and SCAT respectively.

One way analysis of variance (ANOVA) was administered for comparing the anthropometric measurements, motor performance and physiological and psychological variables among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University intercollegiate level players. Least significant difference (LSD) post hoc test was administered, whenever f-ratio found significant.

The finding related to anthropometric measurement, reveals that there was significant difference in height, upper arm girth, thigh girth and calf girth among Football, Basket ball, Volley ball and Kabaddi players of Kuvempu University intercollegiate level. No significant difference was found in body weight and chest girth among the selected game players.

In body height, Volleyball players were found to be tallest and significantly superior to Football and Kabaddi players. No significant differences were found in the height between Football and Basketball players; Football and Kabaddi players; Basketball and Volleyball players; and Basketball and Kabaddi players of Kuvempu University Intercollegiate level.

The findings reveal that, in upper arm girth between Kabaddi players were significantly superior to Football, Basketball and Volleyball players of Kuvempu University Intercollegiate level. The football players were found to be with low upper arm girth among the groups.

The finding related to thigh girth reveals that, Volleyball players found to be significantly low in thigh girth in comparison with Football, Basketball and Kabaddi players of Kuvempu University Intercollegiate level. The Kabaddi players were found to be with highest thigh girth.

The results reveal that, the Volleyball players showed significantly lesser calf girth in comparison with Football and Kabaddi players of Kuvempu University Intercollegiate level. The Kabaddi players found to be with biggest calf girth among the selected groups.

The findings pertaining to motor performance variables such as strength, speed, agility, power and endurance revealed the following results among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University. There were significant difference in strength, speed and power among Football, Basket ball, Volley ball and Kabaddi players of Kuvempu University intercollegiate level. No significant difference was found in agility and endurance among them.

In strength ability, the Volleyball players were found to be significantly superior to Football, Basketball and Kabaddi players of Kuvempu University Intercollegiate level. The Kabaddi players were found to be inferior among selected groups.

The results reveal that, there were significant differences in speed between Football and Basketball players, Football and Volleyball players; and Volleyball players and Kabaddi players of Kuvempu University Intercollegiate level. The Volleyball players found to be fastest in speed ability, where as Football players were found inferior in comparison with other selected team game players of Kuvempu University Intercollegiate level.

The power of Football players found to be significantly lower than that of Basketball, Volleyball and Kabaddi players of Kuvempu University Intercollegiate level. Kabaddi players were found to be superior in power among four selected groups.

The results pertaining to Physiological variables such as resting pulse rate and vital capacity found to be significantly different among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University intercollegiate level. No significant difference were found in the blood pressure and body fat percentage among the selected four team game players of Kuvempu University.

In resting pulse rate, the Kabaddi and Volleyball players were found to be significantly superior to Football and Basketball players. The Kabaddi players were with least count in resting pulse rate, where as Football players were with the highest among the selected group team players of Kuvempu University Intercollegiate level.

In vital capacity the football players were found to be significantly inferior to Basketball, Volleyball and Kabaddi players of Kuvempu University Intercollegiate level. The Volleyball players found to be with the highest vital capacity among selected groups.

The results pertaining to the psychological variables reveals that, there was significant difference in sports achievement motivation among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University intercollegiate level. Whereas, there was no significant difference found in sports competition anxiety among the selected groups.

In sports achievement motivation, the Basketball players were found to be significantly inferior to Football, Volleyball and Kabaddi players of Kuvempu University Intercollegiate level. The Kabaddi players were found to be with high mean value of sports achievement motivation scores among selected four game players.

Conclusions

With in the limitations of the present study and on the basis of findings, the following conclusions may be drawn.

1. In anthropometric measurements, it is observed from the study that, there are significant differences in selected measurements such as height, upper arm girth, thigh girth and calf girth. Based on these findings, following conclusions were drawn;

- Volleyball and Basketball games, demands for taller stature in comparison with football and Kabaddi games.
 - Kabaddi players marked with bigger upper arm girth, thigh girth and calf girth reveal the demand of strong arms and lower extremities comparison with the other selected games for the purpose of the study.
 - Body weight of the selected game players, is not a major concern and has got no significant impact among players of chosen games for the study.
2. The motor performance among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University has shown its significant differences in strength, speed and power. Where as, the agility and endurance level of the selected team game players found to be with no significant differences. On the basis of these findings the following conclusions were drawn;
- Volleyball player's shoulder and arm strength is superior in comparison with the remaining game players selected for the purpose of this study.
 - Kuvempu university intercollegiate level Volleyball players were with superior speed ability, though the speed is highly demanded ability in case of Basketball and Football. Lack of

speed in the demanded games could be an expression of inadequate and inappropriate training.

- Football players need to possess powerful legs, on contrary, they ranked lowest in leg power among Kuvempu University players in Kabaddi, Basketball and Volleyball games. This could be because of inadequate and inappropriate training. And also may be due to improper selection procedures.
- All the selected games, namely Football, Basketball, Volleyball and Kabaddi, are with homogeneous in terms of its demand on agility and endurance among Kuvempu University intercollegiate level players. Though, homogeneity in agility is acceptable in these selected games, but surely not the endurance level. Big field and long duration games always demands the player for better endurance level. On contrary, Kuvempu university Football and Basketball players were found with lower level of endurance in comparison with Volleyball and Kabaddi players. This could be due to the inadequate and inappropriate training. And also may be attributed to the improper selection procedures.

3. The physiological variables among Football, Basketball, Volleyball and Kabaddi players of Kuvempu University have

shown its significant differences in resting pulse rate and vital capacity. The blood pressure and body fat percentage were found to be clustered in close range without any significant differences. Based on these findings of the study, the following conclusions were drawn;

- The Kabaddi and Volleyball players are with lowest resting pulse rate. Football and Basketball players, being demanded to be with better cardiac- adaptations, are found inferior in Kuvempu University.
 - Tall stature players have higher vital capacity. Basketball and Volleyball players are with high vital capacity in comparison with Kabaddi and Football games.
 - Blood pressure (Both systolic and diastolic pressure) is not showing any significant differences among the players of selected players in Kuvempu University.
 - Body fat percentage is not showing any significant differences among the players of Football, Basketball, Volleyball and Kabaddi from Kuvempu University.
4. In psychological variables, it is observed from the study that, there is a significant difference in sports achievement motivation among the selected team game players of Kuvempu University.

Another psychological variable of this study, namely sports competition anxiety has not shown any significant difference among the selected groups. Based on these findings, following conclusions were drawn;

- Basketball players of Kuvempu University lack Sports achievement motivation. Kabaddi, Volleyball and Football team players are found to be better and of same level as far as sports achievement motivation is concern.
 - The sports competition anxiety of all the four selected game players of Kuvempu University namely, Football, Basketball, Volleyball and Kabaddi are of same level.
5. The overall view of findings of this study, leads to the following conclusions. They are;
- Every game is different in terms of its demands on the status of anthropometry, motor performance, physiological and psychological fame in many ways expect for few variables demand to be homogeneous.

Recommendations

In the light of the findings and the conclusions drawn, the following recommendations are made.

1. Overall structural outlook vary in comparison to their peer group.
This is evident in terms of anthropometric measurements and motor performance abilities. Because of variability in structural and motor performance among the selected four team game players it is especially important to assess the individual's level of function and provide an adequate and appropriate programme, based on individual needs.
2. As there is clarity in findings and conclusions regarding the variation in physique and stature of different games selected for this study, adequate care to be executed while selecting the sports persons and training for the games.
3. Selection of tall stature players is essential for Volleyball and Basketball games.
4. Players with bigger size upper body with strong lower extremity are to be preferred to game of Kabaddi.
5. Adequate care to be exercised while selecting and training the players for various motor performances such as, speed, strength and power, as it has got huge contribution to the performance structure of each game selected for this study.

6. Basketball and Football team players to be trained for the development of better speed ability among Kuvempu University.
7. Adequate care to taken to improve the leg strength of Football players as, it was found to be inferior in comparison with the other games.
8. Endurance level of Football and Basketball players is quite inferior though the game demands much higher ability in comparison with Kabaddi and Volleyball. Hence, it is recommended to pay attention for the improvement of endurance among the Football and Basketball players of Kuvempu University.
9. Lack of cardiac adaptation to training among Football and Basketball players is depicted by the status of resting pulse rate. This condition was also referred by the findings of field motor performance test report on endurance. Hence, it is recommended to care for the development of adequate endurance among the said groups for better performance.
10. The Basketball player of Kuvempu University lacks sports achievement motivation status. Hence, it is recommended to pay

attention to these players to enhance this status to improve in their game performance.

11. Similar studies may be conducted on different sports and games groups of Kuvempu University, which are not carried out in this study.

12. Similar type of study may be conducted by taking subjects from the universities which are situated at different parts of the country.

13. Similar study may be conducted on female team players.

14. Similar study may be carried out to compare the sports persons of different universities and different games.

15. To develop the sports persons with necessary potentialities, regular coaching programmes to be introduced in all the university level and also at institution level.