CORRELATION STUDY OF PSYCHOMOTOR PROFILE AND da PERFORMANCE OF UNIVERSITY VOLLEYBALL, BASKETBALL AND HANDBALL MEN PLAYERS IN TAMILNADU

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ABSTRACT

The present study was intended to find out the relationship between the psychomotor parameters and the performance in volleyball, basketball and handball. The secondary purpose of this study was to compare the psychomotor abilities between volleyball, basketball and handball men players. To achieve the purpose of this study, forty five men university players in each game were selected as subjects. Players who represented their universities were selected as subjects. Their age ranged between 19 and 25 years. The following psychomotor variables namely: 1.Visvospatial co-ordination, hand eye co-ordination, visvomotor co-ordination, leg eye co-ordination and psychomotor mobilization were chosen as variables besides total performance in each game. Data were collected using standard tests. To find out the relationship between psychomotor parameters and the total performances, Pearson's product Moment correlation, Partial correlation and Multiple correlation were employed separately for each game. To make the comparison of the psychomotor abilities among volleyball, basketball and handball players one way ANOVA (Analysis of Variance) was employed for each variable. Scheffe's post hoc test was also employed to find out the difference between paired means. **CONCLUSIONS :** On the basis of the findings of the study, the following conclusions were drawn. There was good relationship between total volleyball performance and the psychomotor parameters. There was good relationship between total basketball performance and psychomotor parameters. There was good relationship between total handball performance and psychomotor parameters. In the visvospatial co-ordination ability, there was no difference among players. All were found equal in that parameter. In the hand eye co-ordination ability, there was no difference among the players. All were found equal in that ability. In the visvomotor co-ordination ability, volleyball players were found better than other players. In the leg eye co-ordination ability, handball players were found better. In the psychomotor mobilization ability, volleyball players were found better. In the total performance, all payers were found equal.

KEYWORDS : Psychomotor, sports performance, volleyball, basketball and handball

INTRODUCTION :

Psycomotor is the combination of psychological factors and motor skills. This domain includes all movement behaviour objective that emphasizes the ability to demonstrate motor skill requiring neuro muscular co-ordination, and movements. The objective of psychomotor ability is one of the unique goals of physical education. Generally psychomotor ability means the development of body control and co-ordination so that the individual may perform with grace and efficiency. More specifically it concerns with the various skills of sports, dance and gymnastics.

Psychomotor Parameters Chosen for the Study

Among many psychomotor parameters the following psychomotor variables were selected for this study. They are 1. Visvo spatial co-ordination, 2. Hand-eye Co-ordination, 3.Visvo motor co-ordination, 4. Leg eye co-ordination and 5. Psychomotor mobilisation.

VISVO SPATIAL CO-ORDINATION AND IMPORTANCE

Visvo spatial co-ordination is a combination of eyes and movement in open space.

HAND-EYE CO-ORDINATION AND ITS IMPORTANCE

One of the most important factors in the performance of many sports skills is concerned with the co-ordination of the eye with the hands or head.

VISVO MOTOR CO-ORDINATION AND ITS IMPORTANCE

Visvo motor co-ordination is a combination of eye and motor actions.

LEG-EYE CO-ORDINATION AND ITS IMPORTANCE

All movements involving a ball (or) similar object and eye are concerned with a primary objective.

PSYCHOMOTOR MOBILISATION AND ITS IMPORTANCE

Psychomotor mobilisation is a combination of mind and motor system of body and movement. Psychomotor mobilization plays an important role in the field of sports. Perception kinesthetic sense and some other factors are involved in this ability.

METHODOLOGY

SELECTION OF SUBJECTS

For the purpose of this study fortyfive university women handball, fortyfive university women volleyball players and thirty university women basketball players were selected as subjects.

COLLECTION OF DATA

The primary purpose of this study was to find out the relationship between psychomotor parameters and the performance of handball, volleyball and basketball.

The secondary purpose of the study was to compare the psychomotors abilities between handball, volleyball and basketball male players.

The total performance in handball, volleyball and basketball for each player was determined individually through subjective rating by the three experts in handball, volleyball and basketball respectively. For this purpose ten point rating scale was used separately for volleyball, basketball and handball. This rating scale has ten important categories in the game.

Each category was scored with a maximum of ten points and a minimum of one point. The total score was the sum of the scores of all the categories. The total score was divided by ten to get each raters individual score from the rating scale. The average score of three experts was the measure of the total performance for each player.

The psychomotor abilities were measured for handball, volleyball and basketball players, using standing broad jump test (visvo spatial), basketball passing test (hand - eye co-ordination), volleyball volley test (visvo motor co-ordination), soccer volley test (leg - eye co-ordination) and skipping rope jumping test (psychomotor mobilisation).

The administration of the above tests and method of collecting the data are explained below.

STATISTICAL TECHNIQUES EMPLOYED

To find out the relationship between the psychomotor parameters and performance, Pearson's product moment correlation, partial correlation and multiple correlation were employed separately for handball, volleyball and basketball players as suggested by Cohen.[4]

$$r = \frac{N \sum XY - \sum X . \sum Y}{\sqrt{[N\sum X2 - (\sum X)^2]\ [N\sum Y2 - (\sum Y)^2]}}$$

Partial Correlation

$$r_{12.34\ldots.(n-1)} - r_{1n.34\ldots.(n-1)}$$

$$r_{12.345\ldots.n} = \frac{r_{2n.34\ldots\ldots n(n-1)}}{\sqrt{1-r^2}_{1n.34\ldots.(n-1)}\ \sqrt{1-r^2}_{2n.34\ldots.(n-1)}}$$

Multiple correlation

$$r_{1234\ldots.n} = \sqrt{1-[(\sqrt{1-r^2_{12}})(\sqrt{1-r^2_{13.2}})]\ldots..[\sqrt{1-r^2_{1n.23\ldots n-1}})]}$$

To make a comparison of psychomotor abilities among handball players, volleyball players and basketball players, one way ANOVA was employed for each parameter as suggested by Clarke.

The formula used by Clarke and Clarke

$$\text{Within sets MSW} = \frac{SSW}{K(N-1)} = \frac{\sum X^2}{N-K}$$

$$(df)\ W = N - K \text{ or } K(N-1)$$

$$\text{Between the sets MSB} = \frac{SSB}{K-1}$$

$$Df = K - 2$$

$$\text{f ratio} = \frac{MS_B}{MS_W}$$

When the 'F' ratio was significant scheffe's post hoc test was employed to find out the difference between the paired means.

RESUTLS AND DISCUSSION

COMBINED CONTRIBUTION OF PSYCHOMOTOR PARAMETERS TO VOLLEYBALL PERFORMANCE

Criterion variable	Independent Variables	Mutiple Correlation 'R'
Total Volleyball Performance	Visvo spatial co-ordination, Hand-Eye co-ordination, Visvo Motor co-ordination, Leg-Eye co-ordination, Psychomotor mobilisation	0.6793

Table value = 0.304 at 0.05 level
= 0.393 at 0.01 level

df = 40

Table 1 shows the combined contribution of psychomotor parameters to the total volleyball performance is 0.6793. The obtained multiple correlation is significant at 0.05 level. Hence it is found out that there is relationship between total volleyball performance and the psychomotor parameters.

COMBINED CONTRIBUTION OF PSYCHOMOTOR PARAMETERS TO BASKETBALL PERFORMANCE

Criterion variable	Independent Variables	Multiple Correlation 'R'
Total Basketball Performance	Visvo spatial co-ordination, Hand-Eye co-ordination, Visvo motor co-ordination, Leg-Eye co-ordination, Psychomotor mobilisation	0.6852

Table value = 0.304 at 0.05 level
= 0.393 at 0.01 level
df = 40

Table II shows the combined contribution of psychomotor parameters to the total Basketball performance is 0.6852. The obtained multiple correlation is significant at 0.05 and 0.01 level. Hence it is found out that there is relationship between total basketball performance and the psychomotor parameters.

COMBINED CONTRIBUTION OF PSYCHOMOTOR PARAMETERS TO PERFORMANCE IN HANDBALL

Criterion variable	Independent Variables	Multiple Correlation 'R'
Total Performance in Handball	Visvo spatial co-ordination, Hand-Eye co-ordination, Visvo Motor co-ordination, Leg-Eye co-ordination, Psychomotor mobilisation	0.6664

Table value = 0.304 at 0.05 level
= 0.393 at 0.01 level

df = 40

Table III shows that the combined contribution of psychomotor parameters to the performance in Handball is 0.6664. The obtained multiple correlation value is significant at 0.05 and 0.01 level. Hence it is found out that there is relationship between performance in handball and the psychomotor parameters.

DISCUSSION ON HYPOTHESES

It was apparent that the combined contribution of visvo spatial co-ordination, hand-eye co-ordination, visvo motor co-ordination, leg-eye co-ordination and psychomotor mobilisation to the total performance of volleyball players, basketball players and handball players had good correlation of 0.6793, 0.6852 and 0.6664 respectively. From the statistical analysis 1) it was found out that all the players namely volleyball players, basketball players and handball players are equal in the psychomotor ability. 2) It was found out that the all the players are equal in the psychomotor ability. 3) It was observed that the volleyball players were found better than other players. 4) It was found out the handball players are found better in the leg-eye co-ordination than other players. 5) it was observed that the volleyball players are found better in their psychomotor mobilization. 6) It was observed that the total performance of all the players are found equal.

CONCULSIONS

Based on the statistical findings and within the limitations of the present study the following conclusions were drawn.

1. There was a good relationship between total volleyball performance and the psychomotor parameters.
2. There was a good relationship between total basketball performance and psychomotor parameters.
3. There was a good relationship between total handball performance and psychomotor parameters.
4. In the visvo spatial co-ordination ability, there was no difference among volleyball, basketball and handball players. All were found equal in that parameter.
5. In the hand-eye co-ordination ability, there was no difference among volleyball, basketball and handball players. All the players were found equal in that ability.
6. In the visvo motor co-ordination ability, volleyball players were found better than basketball players and handball players.
7. In the leg-eye co-ordination ability, handball players were found better than the volleyball players and basketball players.
8. In the psychomotor mobilization ability, volleyball players were found better comparatively.

9. In the total performance, all players were found equal.

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