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An analytical study of comparison of reaction and determination test among advanced and intermediate handball players

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Abstract

Aim: The purpose of the present study was to compare the reaction and determination test among advanced and intermediate Handball players. For the present study a total of 10 handball players (5 in each group i.e., advanced and intermediate group) age ranged from 18 to 25 years were selected from Pacific College of Physical Education, Udaipur, and Rajasthan. To assess the reaction and determination test a Vienna Testing System machine were used. The mean, standard deviation along with 't' test has been functional to ensure the difference between samples mean of two tests i.e., Reaction and Determination Test among advanced and intermediate Handball players at a level of significance 0.05 and in determination Test a significant difference was found between the correct scores of advanced and intermediate Handball players whereas an insignificant difference was found between the incorrect and omitted scores of advanced and intermediate Handball players. But in reaction test a significant difference was found between the mean reaction of advanced and intermediate Handball players whereas an insignificant difference was found between Men Motor of advanced and intermediate Handball players.

Keywords: reaction test, determination test, vienna testing system, handball players.

Introductions

Nowadays children are more involved in mobile phones, internet streaming, internet browsing, and watching T.V., movies. Sports like badminton, cricket, football, table tennis and volleyball etc., are preferred less with modernization. These sports not only make them physically healthy but would also improve their alertness and concentration. Reaction time is duration between applications of a stimulus to onset of response. The time required to response to visual stimuli is called "visual reaction time". Reaction time acts as a reliable indicator of rate of processing of sensory stimuli by central nervous system and its execution in the form of motor response. Reaction time can be divided into three parts. The first is perception time, which is time for the application and perception of the stimulus and giving the necessary reaction to it. The second is decision time, which signifies the time for giving an appropriate response to the stimulus. The third is motor time, which is the time for compliance to the order received. Sports performance is depend on a complex and intricate diversity of variables, which includes physical (general and specific conditions), psychological, sociological and physical characteristics (body morphology, anthropometry and body composition factors). Different factors play an important role in in sports and games in determining the performance level, however, great significance is assigned to biomechanical, psychological, physiological parameters in competitive sports.

Methodology

For the purpose of the present study a total 10 Handball players (5 in each group i.e., advanced and intermediate group) age ranged from 18 to 25 years were selected from Pacific College of Physical Education, Udaipur, Rajasthan. The participants in advanced level have represented PCPE, Udaipur at All India Intravarsity Competitions and the participants in intermediate level have not faced competitions. In order to assess the reaction and determination test a VTS (Vienna Testing System) machine was used. Reliabilities of the reaction test lies between $r = 0.83$ and $r = 0.98$ for reaction time and between $r = 0.84$ and $r = 0.95$ for motor time and the reliability of the determination test lies between $r = 0.98$ and $r = 0.99$.

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Before the final commencement of the tests, a demonstration was given by the researcher and proper instructions regarding the objectives of the study and procedure of performing the test were also given to all the participants.

Results of the study

The obtained data was analyzed by using statistical software (SPSS 17 version). The mean, standard deviation along with ‘t’ test has been functional to ensure the difference between samples mean of two tests i.e., reaction and determination test among advanced and intermediate Handball players at a level of significance 0.05.

Table 1: Descriptive Statistics of Determination Test among Advanced and Intermediate Handball Players

	Group	N	Mean	Std. Deviation	Std. Error Mean
Correct Score	Intermediate	5	164.00	21.65	9.68
	Advanced	5	228.20	37.45	16.75
Incorrect Score	Intermediate	5	35.20	13.40	5.99
	Advanced	5	29.60	13.20	5.90
Omitted Score	Intermediate	5	23.60	6.22	2.78
	Advanced	5	22.80	5.35	2.39

Table 1 reveals that in terms of correct score the mean of advanced Handball players (228.20) is comparatively higher than the means of intermediate Handball players (164), whereas in incorrect scores the means of intermediate Handball players (35.20) is comparatively higher than the

means of advanced Handball players (29.60) respectively but in omitted scores the means of intermediate Handball players (23.60) is comparatively higher than the means of advanced Handball players (22.80).

Table 2: t-Statistics of Determination Test Among Advanced and Intermediate Handball Players

		Sig.	t	df	Sig. (2-tailed)
Correct Score	Equal variances assumed	.38	- 3.31	8	.011
	Equal variances not assumed		- 3.31	6.40	.011
Incorrect Score	Equal variances assumed	.65	.66	8	.52
	Equal variances not assumed		.66	7.99	.52
Omitted Score	Equal variances assumed	.67	.21	8	.833
	Equal variances not assumed		.21	7.82	.833

Table 2 shows that a significant difference was found in correct scores (.01) of advanced and intermediate Handball players, whereas an insignificant difference was found in incorrect scores (.52) and omitted score (.83) of advanced

and intermediate Handball players, the value of t-statistics is .66 and .21, this t-values is insignificant as the p-value is .52 and .83 which is larger than 0.05.

Table 3: Descriptive Statistics of Reaction Test Among Advanced and Intermediate Handball Players

	Group	N	Mean	Std. Deviation	Std. Error Mean
Mean Motor	Intermediate	5	265.20	37.58	16.80
	Advance	5	255.80	30.84	13.79
Mean Reaction	Intermediate	5	148.00	35.62	15.93
	Advance	5	102.80	24.34	10.88

Table 3 reveals that in terms of Mean Motor the mean of intermediate Handball players (265.20) is comparatively higher than the means of advanced Handball players (255.80), whereas in mean reaction the means of

intermediate Handball players (148.00) is also comparatively higher than the means of advanced Handball players (102.80) respectively.

Table 4: t-Statistics of Determination Test Among Advanced and Intermediate Handball Players

		F	t	df	Sig. (2-tailed)
Mean motor	Equal variances assumed	1.15	.43	8	.67
	Equal variances not assumed		.43	7.70	.67
Mean reaction	Equal variances assumed	3.60	2.34	8	.04
	Equal variances not assumed		2.34	7.06	.04

Table 4 shows that an insignificant difference was found in mean motor (.67) of advanced and intermediate Handball players, whereas a significant difference was found in mean reaction (.04) of advanced and intermediate. Handball players so the null hypothesis of equality of means of advanced and intermediate Handball players is rejected at a level of significance 0.05.

Conclusion

The aim of the present study was to compare the reaction and determination test among advanced and intermediate Handball players. The obtained data was analyzed by using statistical software (SPSS 17 version). The mean, standard deviation along with ‘t’ test has been functional to ensure the difference between samples mean of two tests i.e., reaction and determination test among advanced and

intermediate Handball players at a level of significance 0.05 and hi determination test a significant difference was found between the correct scores of advanced and intermediate Handball players whereas an insignificant difference was found between the incorrect and omitted scores of advanced and intermediate Handball players but in reaction test a significant difference was found between the mean reaction of advanced and intermediate Handball players whereas an insignificant difference was found between Mean Motor of advanced and intermediate Handball players because of the nature of the training provide by the coaches at both the levels (advanced and intermediate) and duration of the practice session may varies the result of the study. The number of competitions faces by the advanced Handball players give them a better match experience and helps them to control the motor nerves at the crucial point of the match.

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