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Construction of handball skill tests for women players of Karnataka

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Abstract
Purpose of this study was to develop and standardize a rating scale and match performance of Handball Players with the help of rating scale. The study was also done to find out the skill performance of players with the help of standardized handball skill tests. The study mainly focused on the construction o construct a new skill test battery and to develop for women Handball players of Karnataka state. Initially eight test items were designed on the Handball fundamental skills. A pilot study was conducted on thirty women Handball players from Belagavi region aged ranged from 18 to 23 years It was also necessary to compare the skill and match performance (Rating scale) of handball players along with finding out the relation among skill performance with match performance.

Keywords: Handball, evaluation, skill tests

1. Introduction
Evaluation is essential in the process of teaching and coaching. Through evaluation, a teacher/coach can know the extent to which learning has taken place. Hence, the teacher/coach must be aware of some evaluation techniques, which will enable him to measure the student's/player's skill objectively and classify them initially as wall as by measuring the progress made by them. There are few skill tests in various physical activities, which help to measure the playing abilities of the students/players in different games and sports.
Sports skill test are designed to measure the basic skills used in the playing of a specific sport. Because of the wide range of skills in most sports, a selection of the most important skill is invariably necessary. The selection is usually based keeping in mind the literature available, opinion of experts as wall as by applying appropriate statistical techniques. The skill items collectively are called test battery. The skill test helps the students to evaluate their performance in the fundamental skills the game and to provide an incentive for improvement. The test also serves the purpose of helping the teachers/coach to measure student's/player's performance and to evaluate their own teaching/coaching procedure and programme.

2. Importance of research in handball
Research is a tool for the improvement in all the fields. Scientific research in physical education and sports will bring many innovations. These innovations are certainly helpful for the better performance.
A lot of research is being done in all aspects of sports performance in various sports and games. Sports scientists have investigated sports performance in relation with anthropometric variables, physical fitness components, physiological efficiency of various organs, psychological effects and so on. But very few studies were conducted in Handball. Hence the investigator is much enthusiastic to do research in Handball and there by the present study was chosen. The result of the study certainly having the potential influence and explore the possibilities of investigating the ingredients responsible for the enhancement of Handball performance.

3. Purpose of the study
The purpose of the study was to construct a new skill test battery and to develop standard norms for women Handball players of Karnataka state. Initially eight test items were designed

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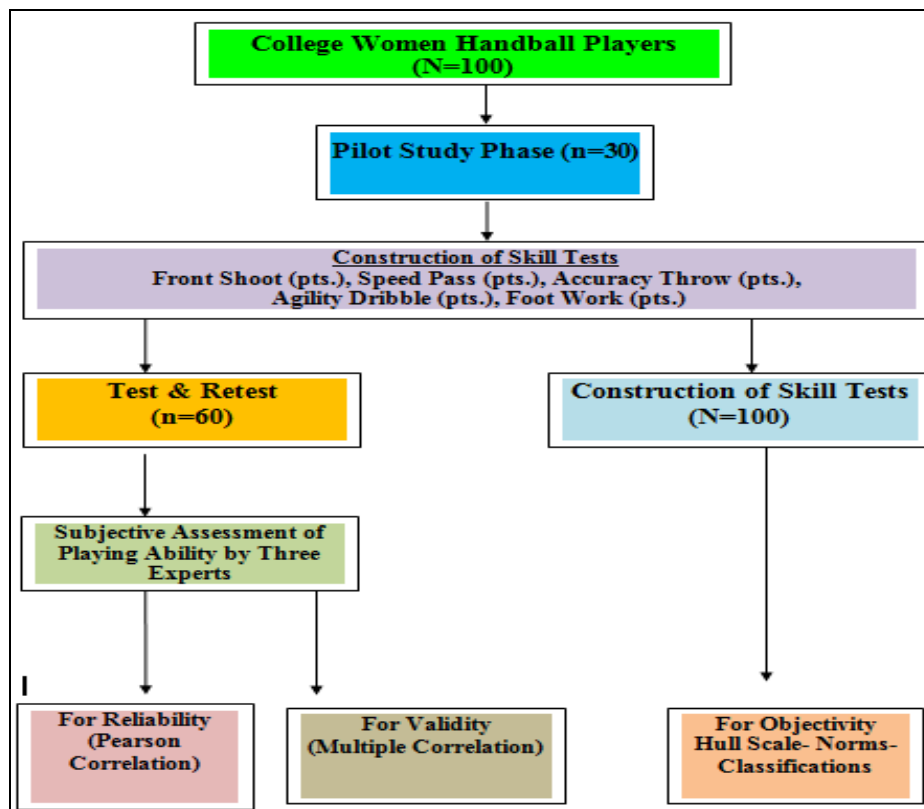College, Ankola, Karnataka,
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on the Handball fundamental skills. A pilot study was conducted on thirty women Handball players from Belagavi region aged ranged from 18 to 23 years. They were regular practitioner. To examine the relationship between the subjectively assessed Handball playing ability of the subjects with scores of the skill tests constructed and thereby establishes criterion related validity of the skill tests constructed. To examine the relationship between the scores of different age groups and thereby establish construct related validity for the skill tests constructed and finally to compute norms.

4. Methodology

The purpose of this study was to construct a new skill battery and to develop standard norms for women Handball players. To achieve these purpose One hundred (N=100) women Handball players excluding goal keepers were randomly selected from various Colleges of Karnataka state, India and their age ranged between 18 to 23 years.

During pilot study phase, 30 subjects were involved for selection of skills, refinement process of the skill tests constructed and finalization of the tests constructed. During the Testing Phase for Reliability and Validity of tests constructed, the researcher found the reliability of the tests constructed through test – retest (intra class) methods. Reliability of the constructed tests were also done by inter-rater (outside expert) with the 60 subjects were selected for this purpose. To ascertain the validity (criterion related and construct related) the playing ability was determined by three experts when the selected subjects were in actual competitions. The obtained playing ability was related with the skill scores of the subjects to determine criterion related validity. To determine the construct related validity the playing ability and constructed skill scores of the subjects were found and related so as to find the validity of the constructed skill tests for the groups. To find out the objectivity of the constructed skill tests, the investigator administered the constructed skill tests for 100 subjects. Based on the scores, hull scales were computed and the subjects were classified and there by the objectivity of the skill tests could be proved. The research design of this study under different phases is detailed in Figure-I through a flow chart.

Flow Chart Showing the Metapology Adapted in the Study

5. Results and discussions

Deals with the analysis of data collected from the samples under study. This research was to construct a battery of objective skill tests in Handball to assess the Handball playing ability of the women Handball players. To achieve the purpose 100 women Handball players from various Colleges in Karnataka were selected at the age group of 18 to 23 years. The newly constructed batteries of skill test were administered on the subjects with appropriate skills, which measure the capability of each individual player. The investigator formed the research method in three phases, namely, Pilot Study Phase, Testing Phase for Validity and Reliability and Testing Phase for Objectivity. During pilot study phase, thirty subjects were involved for selection of skills, refinement process of the skill tests constructed and finalization of the tests constructed.

After careful assessment of the present skill tests, the investigator constructed skill tests namely Shooting, Passing, Throwing, Dribbling and Defensive foot work. During the Testing Phase for Reliability, Objectivity and Validity of tests constructed, the researcher found the reliability of the tests constructed through test – retest (intra class) methods. Reliability of the constructed tests was also done by inter-rater (outside expert). To ascertain the validity (criterion related and construct related), the playing ability was determined by three experts when the selected subjects were in actual competitions. The obtained playing ability was related with the skill scores of the subjects to determine

criterion related validity. To find out the objectivity of the constructed skill tests, the investigator administered the constructed skill tests for 100 subjects. Based on the scores, hull scales were computed and the subjects were classified and thereby the objectivity of the skill tests could be proved. Data were collected using the constructed skill tests and the playing ability of the subjects was scored with the help of a panel of three experts subjectively. The collected scores were subjected to statistical treatment using Pearson Correlation Coefficient, Correlation Coefficient Matrix, Multiple Correlation and Hull scale to determine the reliability, validity and objectivity of the tests constructed.

Table 1: Mean and Standard Deviation of Constructed Skill Tests for Test and Retest Scores

S. No	Name of the Skills	N	Test Scores		Retest Scores	
			Mean	SD	Mean	SD
1	Front Shoot	100	35.90	4.46	35.97	4.40
2	Speed Pass	100	20.94	4.83	20.99	4.73
3	Accuracy Pass	100	16.32	2.55	16.50	6.80
4	Agility Dribble	100	51.08	5.95	51.04	5.89
5	Foot Works	100	10.19	1.65	10.24	1.56

From Table-III, it is ascertained that the mean for the constructed front shoot was 35.90 with standard deviation ± 4.46 the retest mean was 35.97 with standard deviation ± 4.40. The mean value of 20.94 with standard deviation ± 4.83 was recorded for test scores of speed pass and retest mean was 20.99 with standard deviation ± 4.73.

Table 2: Showing Intra Class Correlation Coefficient Obtained on Constructed Skill Tests

S. No	Name of the Skills	N	Obtained 'r' Values	Required 'r' Value at 0.01 level
1	Front Shoot	100	0.99*	
2	Speed Pass	100	0.99*	
3	Accuracy Pass	100	0.95*	0.254
4	Agility Dribble	100	0.97*	
5	Foot Works	100	0.94*	

* Significant at 0.01 level.

The results presented in Table - IV proved that the obtained 'r' value between test and retest of front shoot was 0.99. The 'r' value of speed pass was 0.99; accuracy pass 'r' value was 0.95. The obtained 'r' value for agility dribble was 0.97 and foot work test was 0.94.

Table 3: Mean and Standar Deviation of Constructed Skill Tests for Researcher's Scores and Expert's Scores

S. No	Name of the Skills	N	Researcher's Scores		Expert's Scores	
			Mean	SD	Mean	SD
1	Front Shoot	100	35.90	4.46	35.86	4.31
2	Speed Pass	100	16.32	2.55	16.49	2.61
3	Accuracy Pass	100	20.94	0.48	21.07	4.75
4	Agility Dribble	100	51.08	5.95	51.11	5.96
5	Foot Works	100	10.19	1.65	10.31	1.68

From the Table -V it is ascertained that the constructed front shoot test means of investigator was 35.90 with standard deviation ± 4.46 and the experts' rating mean was 35.86 with standard deviation ± 4.31. The mean value of 16.32 with standard deviation ± 2.55 was recorded by the researcher for test scores of speed pass skill test and the expert mean was 16.49 with standard deviation ± 2.61.

Table 4: Showing Inter Rater Correlation Coefficient Obtained on Constructed Skill Tests

S. No	Name of the Skills	N	Obtained 'r' Values	Required 'r' Value at 0.01 level
1	Front Shoot	100	0.95*	
2	Speed Pass	100	0.99*	
3	Accuracy Pass	100	0.99*	0.254
4	Agility Dribble	100	0.97*	
5	Foot Works	100	0.94*	

* Significant at 0.01 level

The results presented in Table-VI proved that the obtained 'r' value between test and expert's test of Front shoot skill test was 0.95. The 'r' value of speed pass was 0.99; Accuracy pass 'r' value was 0.99. The obtained 'r' value for Agility dribble skill test was 0.97 and Foot works skill test was 0.94.

6. Conclusions
Within the limitations and delimitations of this study, the following conclusions were drawn.

1. There was significant relationship between test – retest scores of the constructed skill tests and there was significant relationship between investigator's scores and experts scores. Thus, it was concluded that the constructed skills tests have significant the intra class and inter rater reliability.

2. There was significant relationship between playing ability scores and individual skill test scores. There was significant relationship between playing ability scores and scores of skill tests put together as assessed through multiple regression analysis. Thus, it was concluded that the constructed skill tests have significant criterion related validity and construct related validity.

3. It was concluded that the skill tests constructed possessed objectivity as the tests have been carefully constructed with great care, clear test directions, precise scoring methods, and adherence of them. Through the constructed skill tests norms have been constructed and the women players were classified.

4. It was concluded that the newly constructed battery of tests would truly measure the women Handball skills of an individual.

5. It was concluded that the playing ability of Karnataka State women Handball players can be measured through the performance of players in the skill test of the battery proposed.

6. It was concluded that the women players in skill test would have positive correlation with the experts rating on the game performance.

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