Chapter II

REVIEW OF RELATED LITERATURE

Sincere efforts have been made by the research scholar to locate literature related to this study. The relevant studies selected from various sources which the research scholar has come across and which are of direct relevance to the present study are cited below.

French\(^1\) constructed a satisfactory badminton test for college women. It contains two elements, a serve test and a clear test. Reliability coefficients ranging from .77 to .98 were obtained. For validity, a correlation of .85 was reported to a preliminary study between the test and a combination of subjective estimates and standing in tournament play.

Lockhart and McPherson\(^2\) proposed a badminton test for college women, which consists of volleying a shuttlecock against a wall. In the validation of the test, the originators obtained the following correlations: .71 between the test results and the evaluation of badminton playing ability by three experienced judges, and .60 between the test results and percentage of total games won in a round-robin badminton tournament. The test-retest reliability correlation for the volleying test was .90.

From a count of the strokes utilized in a United States Amateur Badminton Championship, Miller\(^3\) found that both the men’s and women’s finalists employed clears more than any other stroke in all of their games. After analyzing movies of the various types of clears, she devised a badminton test based on this stroke.


\(^3\)Frances A. Miller,” A Badminton Wall Volley Test” Research Quarterly 22:2(May 1951) : 208-213.
With one hundred college women as subjects, a reliability coefficient of .94 was obtained with the test-retest given one week apart. A validity coefficient of .83 was reported. The criterion was standing of the subjects after round-robin badminton play.

Chang\(^4\) presented a test of badminton skills for college men and women composed of the following five items: short serve, long serve, clear, smash, and overhead drop shot. The tests were identified as fundamental elements present in badminton play. The most effective tests were the clear for women and smash for men. Each of these tests accounted for 29-30 per cent of the variance in badminton playing ability as determined from tournament play.

Bobrich\(^5\) prepared a badminton observational rating scale to measure total skill development as a student participates in a regular game. The tool was developed using two classes of 67 girls enrolled in a high school beginning badminton course. The reliability was estimated on a test-retest basis using three qualified judges. Both Pearson's 'r' and analysis of variance techniques were used to determine the reliability of the testing tool. The coefficients ranged from .77 to .87 for section I of the observational rating scale and from .60 to .83 for section II.

Hicks\(^6\) conducted a study to measure a player's ability to execute selected badminton strokes and general playing ability using 64 college women enrolled in badminton classes. Originally, she wanted a five-item battery of valid and reliable tests, but concluded by recommending three items: a clear test, a smash test, and a strategy test. Reliability was determined by the odd-even method for each test item.

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French\textsuperscript{7} constructed a short serve test to measure the ability to serve accurately and low. A validity coefficient of .66 was reported using a criterion of tournament rankings. The test-retest reliability was .96. Four concentric quarter circles were drawn on the right service court. A rope was stretched 20 inches above the net and parallel to it. The final score was the total of the values made on 20 serves.

GSC Badminton clear test was developed to measure the skill of beginning level players in hitting the deep clear shot. The test was administered on 61 male and 65 female students enrolled in seven beginning badminton classes at Georgia Southern College. A badminton court was marked and a rope was stretched across the court at a height of 8 feet and at a distance of 13 feet six inches from the net. The zone in which the shuttle landed was recorded as the score. The score was the total points for the ten trials. Reliability was found to be .87 for males and .89 for females. The validity of the test was .85 for both males and females\textsuperscript{8}.

Sebolt\textsuperscript{9} developed a test to measure the achievement of the badminton short service. Logical validity of the service was .61. The inter-class reliability for the students was estimated at .72 and .79. The test was administered on a standard court, with scoring zones marked. A string was stretched 16 inches directly above and parallel to the net. The student's score was the sum of the 20 serves.

\textsuperscript{7}M.G. Scott et al.; “Achievement Examination in Badminton” Research Quarterly 12 (May 1941):242-253.


Scott\textsuperscript{10} constructed a test to measure the accuracy of the badminton long service. A validity of .54 was reported between the service scores and the subjective rating made by three judges during play. Reliability estimates with college women were .77 and .68. The test was administered on a standard court with scoring zones marked. A restraining rope at a height of eight feet was placed parallel to and 14 feet from the net. The student's score was the sum of 20 serves.

Bill Landin, Indiana University suggested a badminton rating scale. The four areas of badminton-playing ability may all be rated during competition. The areas of badminton playing ability were serve, stroke, strategy, and footwork and position. However, the first two areas may be rated in a non competitive situation, if so desired, by asking the student to demonstrate the various serves and strokes. Each sub-area was scored on a 3-2-1 basis\textsuperscript{11}.

Brumbach\textsuperscript{12} constructed a low service and a clear badminton test at the University of Oregon, with the students from the Service Course Division. For low service test a cord was strung tightly six inches above and parallel to the net; another cord was strung six inches above and parallel to the first. The student's final score was the sum of the best of the six services from each court. For administering clear test a cord was strung across net six feet from base line and nine feet high. The students were given 12 attempts; only the best 10 were counted.

Narain\textsuperscript{13} constructed and standardized specific physical fitness test for badminton players. He used factor analysis technique on the data of 100 Inter College/District Badminton players of North India. As many as seven factors of


\textsuperscript{11}Baumgartner and Jackson, Measurement for Evaluation in Physical Education and Exercise Science, p.369.

\textsuperscript{12}Wayne B. Brumbach, Unpublished Research at the University of Oregon cited by Ballou Teaching Badminton, p.p.126-132.

specific physical fitness were obtained, out of which, five were considered as meaningful to select test items from each factor. One test item having the highest loading was included in the test battery, from each factor. The test items thus derived were applied on 500 badminton players to develop the norms.

Ikeda\textsuperscript{14} conducted a relationship study of some selected measures with the badminton playing ability. During the last weeks of an eight week badminton unit, a series of tests including wrist flexibility, shuttle race and various measures of kinesthesia, such as arms-forward-spread, supination, pronation and grip. Pressure was administered to 72 women students. These test scores were compared to the results on the volley and clear badminton tests. There was no significant relationship between wrist flexibility, kinesthesia or agility and badminton playing ability.

Tergerson\textsuperscript{15} conducted a study on the relationship of selected measures of wrist strength, vision and general motor ability to badminton playing ability. The French short serve and clear test and Miller wall volley test were given to 23 Sophomore College women. Motor ability was measured through the Scott test, palmer and dorsi-flexion strength with a tensiometer, temporal vision with a parameter and depth perception with the Howard-Dolman apparatus. Total badminton playing ability correlated, significantly, with general motor ability, depth perception and peripheral vision. The wall volley just correlated, significantly, with motor ability and depth perception. The highest and the lowest six players differed significantly in motor ability, depth perception and peripheral vision, but not in total wrist strength.

O’Connor\textsuperscript{16} studied speed and skill in relation to success achieved by college women engaged in badminton singles competition. Various badminton

\textsuperscript{14}Namika Ikeda, “Relationship of Selected Measures of Wrist Flexibility, Kinesthesia and Agility to Badminton Playing Ability” \textit{Completed Research in Health, Physical Education and Recreation} 2 (1960): 44.


skills, specific movement times and success in singles competition were tested. Analysis by multiple correlation and regression showed that speed and skill were essential to success, but success depended to a greater degree on skill than on speed of movement. The Miller Wall Volley Test was the best predictor of success in the singles competition and total body movement was the best time predictor.

The study proved that skill is more dominant than speed of movement in the success of badminton but speed of movement is also considered to be essential. Other things being equal, speed of movement will influence success.

Poole and Nelson\textsuperscript{17} constructed a badminton skill test battery for high school and college students of both sexes. The skills test selected were long serve test, forehand clear test, and backhand clear test. The reliability for long serve, forehand clear and backhand clear test was 0.81, 0.90 and 0.78 respectively. The validity for long serve, forehand clear and backhand clear test was reported 0.51, 0.70, 0.56 respectively with the results of tournament play.

Using Johnson Badminton Set-up Machine Parker constructed a test to measure the ability in the overhead smash skill in badminton for junior high school boys and girls through college. Reliability and objectivity reported was 0.77 and 0.94 respectively. Face validity was accepted for the test. Percentile scores based on scores of 50 college men and 52 college women were also reported. Ten trials were allowed for score and the maximum score possible was ten points\textsuperscript{18}.

Brar\textsuperscript{19} evaluated the objective skill tests in Hockey. Sixty four students of the bachelor's degree classes of the Lakshamibai National College of Physical


\textsuperscript{18}Johnson and Nelson, Practical Measurements for Evaluation in Physical Education, p. 261.

\textsuperscript{19}Tejinder Singh Brar, "An Evaluation of Objective Skill Tests in Hockey" (Unpublished Master's Thesis, Jiwaji University, Gwalior, 1977.)
Education, Gwalior and 125 boys of the Government Secondary School, Patto Hira Singh, Punjab, served as subjects for the study. The three objective tests selected were: dribbling and hitting, pass receiving, fielding and drive and dribble, and goal shooting. The results of the study indicate that validity coefficient showed only a modest correlation between all the three tests and hockey playing ability. Absolute independence on objective tests was clearly contraindicated.

John evaluated the available objective skill tests in volleyball. Forty male students from different colleges of Jiwaji University were selected as subjects for the study. The two objective tests-Brady Volleyball Test and AAHPER Volleyball Test were administered to the subjects. Both the tests had significantly high reliability co-efficients.

A sample volleyball rating scale was designed for each of the three components of Volleyball playing ability with apoint value of 15 scored on 5-4-3-2-1 basis. The three components of volleyball playing ability were: serve, setting or spiking, and general team play.

In a swimming rating scale for elementary back stroke the arm stroke, leg kick, complete stroke, and stroke efficiency were rated on a three point scale. Complete stroke and stroke efficiency were double weighted so as to be twice as influential as arm stroke and leg kick in the total rating.

The posture body mechanics tests was developed by the women's Department of the Division of Physical Education, State University of Iowa. This test provides a three point rating scale for each of the following functional conditions: foot mechanics, standing position, walking, sitting, stooping to pick up a light object and ascending and descending stairs. A reliability coefficient of .97 for this posture scoring scheme was obtained.


22Ibid., p.370