

Volleyball Skills among the girl Students of Community and Institutional Secondary Schools of Western Nepal

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Abstract

The objective of this article is to compare the volleyball skills among the girl students of community and institutional secondary schools in western Nepal. It also hypothesizes that there is a significant difference in volleyball skills between them. The research was based on the quantitative descriptive design. Altogether 40 girl students were selected as respondents, and 20 girl respondents from each type of school were taken through a simple random sampling method. The AAHPER volleyball skill test was applied as a tool. These test items are the indicators of the volleyball skills of an individual whereas volleying, servicing, passing and set-up measure the volleying, servicing, passing, and setter accuracy skill on the target point respectively. While comparing mean scores, the girls of institutional schools were found better than those of their community school counterparts. Furthermore, was applied p-value of the t-test in each test item separately at a 0.05 level of significance. Thus, it has found no significant difference between both groups in set-up and serving tests. In contrast, a significant difference was found in the passing and volleying tests, as well as a composite score. Hence, this paper concluded that there were found significant differences in volleyball skills between both girl groups on overall test items. Therefore, it is sufficient evidence to accept the hypothesis of this paper. This means the girls of a community school may be more involved in intramural and extramural volleyball competitions, as well as sporting activities.

Keywords: Volleying, servicing, passing, set-up

Introduction

The volleyball game's original name is "mintonette". William G. Morgan invented this game in 1895 when he was the physical director of the YMCA. It was popular during the first and second world wars in the USA (Goel, 1993). Nowadays, volleyball is known as an indoor game. However, it can be played outdoors by two teams. Players hit a ball in their opponent's zone through over a net. The team's

target is always the dead ball (Sherchan, 2002). During a volleyball match, the team's objective is to send the ball to the opponent's court across the net and to prevent the same effort by his/her opponent. The target of each player in the team is always seeking the dead ball to gain a score (Jha, 2002).

Volleyball is a sport played by two teams with six players each on a playing court 9 by 18 meters divided into two halves, with a net of 2.43 meters height for men and 2.24 meters for women. The players are designated as left, center, and right forwards and left, center, and right-backs. When it is a team's turn to serve, every player rotates one position clockwise and the right-back serves. There are different versions available for specific circumstances to offer the versatility of the game to everyone. Volleyball is a game of constant motion (Sherchan, 2002 as cited by Bohara, 2018, p. 30).

While playing volleyball, each team can touch three times on their court. Repeated touch as one then after is not permitted but each player can touch two times among three touches. The usual pattern is a dig (an underarm pass made with the forearms), a set (an overhead pass made with the hands), a block (opponent Spike), and a spike (the overhead attacking shot). The ball is served into play. Teams can also try to block the opponent's spike as it crosses the net. One player may execute two of the three hits, but not two in succession. In blocking, a maximum of three blockers can be performed simultaneously for the opponent spike. A block of a spike is not considered one of the three hits and the blocker may immediately play the ball again. The ball is put in play with a service hit by the server over the net to the opponent's court. The rally continues until the ball is grounded on the playing court, goes "out" or a team fails to return it properly. The team winning a rally scores a point. When the receiving team wins a rally, it gains a point and the right to serve, and its players rotate one position clockwise (Jha, 2003 as cited by Bohara, 2018, pp. 30-31).

FIVB volleyball men's and women's world cup was started in 1965 and 1973 respectively. Men's and women's volleyball made their Olympic debut at the 1964 Olympic games, in Tokyo whereas beach volleyball made its Olympic debut in 1996, in Atlanta (Jha, 2009). The women's volleyball player has secured second position in the 2019 13th SAG games in Kathmandu, Nepal. Moreover, Nepal has secured the second position in the medal tally among SAARC countries (Nepal, 2020).

Volleyball is not a game of recent origin. A YMCA physical educator, William G. Morgan of U.S.A. 1895 in Massachusetts, invented one of the most much-loved sports around the world and named it Volleyball. The Federation International de Volleyball or FIVB was founded in the year 1947. The first world championships for men and women were held in the year 1949 and 1952 respectively. In 1895, William G. Morgan, an instructor at the Young Men's Christian Association or YMCA in Holyoke city, decided to blend elements of basketball, baseball, tennis, and handball to create a game for his classes of executives, which would demand

less physical contact than basketball. He created the game of Volleyball, at that time called Mintonette and his book explained that Morgan borrowed the net from tennis, and raised it 6 feet 6 inches above the floor, just above the average person's head.

During a demonstration game, someone remarked to Morgan that the players seemed to be Volleying the ball back and forth over the net, and perhaps 'Volleyball' would be a more descriptive name for the sport. Volleyball is the national game of Nepal. It is played all over the country. The volleyball game was first played in 1942 in Nepal. The students of Tri-Chandra College played it. After 1945 AD, the game started to spread outside Kathmandu. However, due to the lack of proper rules and regulations for games in our country the development of this game was not uniform (regular) like other games. The National Sports Council gave a valuable contribution to the development of this game. Because of its contribution, the National Volleyball Competition was first organized in Nepal in 2030 BS. After this event, Nepal Volleyball Association was established in Nepal in 2032 BS, under National Sports Council. Only after it, the game has a new direction and new speed toward development. After this, the 'Nepal Volleyball Association' was able to send its players for participating in different international competitions.

In 1999, the female volleyball players of Nepal took part in the 8th SAF Games organized in Kathmandu, in which they occupied the third position and got the Bronze medal (Jha, 2009 as cited by Bohara, 2018, p. 31). The game was brought into Nepal very late. It is believed that the Ex-Gorkha army borrowed the game of volleyball from Nepal. However, authentically the game was found to be played by Trichandra college students in 1942 A.D., and later around 1945 A.D. the game was found to be played outside the Kathmandu valley. Volleyball is the national game of Nepal that is the most popular as well. Nepal developing its organization under the sponsorship of the National Sports Council. In this context, the volleyball association of Nepal was formed in 1973 A.D./2030 B.S (Sherchan, 2016, pp. 267–268).

The American Association for Health, Physical Education, and Recreation (AAHPER) volleyball skill test is used for testing volleyball skills ability. It has four test items e.g. volleying, servicing, passing, and set-up, its' face validity, and reliability have already been proven. These test items have intended to measure the fundamental skills of volleyball (Johnson & Nelson, 1988). Volleyball skill test is a discipline among sports skill tests. It reflects the ability of the pupils' to perform in a specific sport. Sports' possibility and status is determined through sports skill test (Jha, 2010). Scientific measurement of sports skill performance scores is dependent on the feature of the test. Test reliability, objectivity, and validity are essential features of test items so sports-related researchers are conscious at all times before using them on young groups (Mathews, 1978).

Upadhya has studied 'Experiment Developing Volleyball Skill among the Secondary Level Student of Rupandhi District'. His research tool was the Russell-

Lange volleyball test. His study concluded that the experimental group was significantly better after training in volleyball skills (Upadhya, 2007). Rai studied 'A Comparative Study of Volleyball Skill in Public and Private Secondary School Girls of Kathmandu District. His research tool was AAHPER Volleyball Skill Test. Except for passing tests, public schools were found significantly better than private counterparts (Rai, 2007).

In Ghimire's research study, his respondents were secondary-level students of the Tanahun district. He concluded that there was a significant difference between the controlled and experimental groups of students in basketball skills furthermore experimental group was significantly better than the control group (Ghimire, 2007). Thapa has concluded that public schools' students were slightly better than private schools' students in volleyball skills in raw scores. His research was conducted in Kirtipur municipality (Thapa, 2009). Chiluwal has concluded that the students of private campuses were better in the composite mean of raw scores than their government counterparts. His research was conducted on private and government campuses in the Kathmandu district (Chiluwal, 2010).

Ghimire studied on agility aspect, he found that a significant difference was not found between students of lower secondary and secondary schools in the Tehrathum district (Ghimire, 2007). Pandey has studied basketball skills between community-run and organization-run lower secondary school students in Sitapaila, Kathmandu. His study concluded, that there was seen no significant difference in basketball skills between students of community-run and organization-run counterparts (Pandey, 2008).

Mahato (2018) conducted a study entitled "An Effect on Counter Attack Practice on Ball Speed Rally in Table Tennis among Boy Students". The main objectives of this study were to compare the table tennis ball speed rally of an experimental and control group of respondents. The Mott-Lockhart table tennis test was the main tool of this study. The researcher selected only one College where table tennis materials were available. Altogether 40 boy students were selected from Sagarmatha Multiple College, Kathmandu. Doing this procedure, the 20 boy students were from the college hostel as an experimental group and 20 boy students were from the out-of-college hostel as a control group. The training program was planned and applied to the boy students of grades 11-12 of Sagarmatha Multiple College, Dillibazar. The experimental group was given a counter-attack practice training program for six weeks. Ball speed rally test of table tennis, a significant difference was found between both groups (Mahato, 2018 as cited by Shahi, 2018, pp. 12-15).

The above introduction parts conclude that volleyball is a famous game all over the country of the world. However, it is most popular in Nepal among females than the counterparts of males. Furthermore, the AAHPER volleyball skill test is a key tool to find out the players' volleyball skills.

Lamjung is a district of western Nepal. It was the research district of this paper. It is a part of the Gandaki Province of Nepal. The district headquarter is Besisahar. Previously, the place Kunchha was its district headquarters (Pathak, 2018, as cited by Shahi, 2019, p. 104). Moreover, he explained that Lamjung lies in the mid-hills of Nepal spanning from tropical to trans-Himalayan geo- ecological belts. It has mixed habitation of different cast and ethnicity, with the highest density of the Gurung ethnic population in the country.

Volleyball is the most popular game in the Lamjung district. In addition, Volleyball used to be the major game in the Birendra shield tournament. However, nowadays, the popularity of this game has been replaced by other games like football and cricket (Shahi, 2017). Future Star Secondary English Boarding School, an institutional school, and Mangala Secondary School, a community school are the research schools of the Lamjung district. Future Star Secondary English Boarding school has more infrastructure and sporting facilities than Mangala Secondary School.

Furthermore, the management committee of Future Star Secondary English Boarding School has been frequently organizing intramural and extramural volleyball tournaments than the Mangala Secondary School. In addition, Sagun Gurung, a women's national volleyball player has emerged from this school. In comparison to Future Star Secondary English Boarding School, Mangala Secondary School lacks such sporting activities. Furthermore, this kind of research has not been conducted in these areas so far, it is a research gap for this title. The query of this research is the comparative analysis of the volleyball skills of girl students of institutional and community schools. Hence, the objective and hypothesis, as well as the title of this paper was formulated based on the above issues. This research paper's title was stated as "Volleyball Skills among the girl Students of Community and Institutional Secondary Schools of Western Nepal".

The objective of the Study

The main objective of this study was to compare the volleyball skills of groups of girl students in the community and institutional schools of western Nepal.

Methodology

This paper is based on a descriptive design of quantitative nature (Khanal, 2017). There were two schools whereas one from the community and the next one from institutional secondary schools in the Lamjung district. Altogether 40 girls were respondents, whereas 20 has taken from each school through a simple random sampling method (Baskota, 2009). The Mangala Secondary School and Future Star Secondary English Boarding School are community and institutional schools respectively. Likewise, the girl students of grades 9 and 10 have been taken as respondents, and an equal number of girls have been selected from each grade. **Tool:** Jha explained the

AAHPER volleyball skill test. The battery of the AAHPER volleyball skill test was applied as a research tool, these test items are indicators of the volleyball skill of an individual. These test items were volleying, servicing, passing and set-up (Jha, 2010).

Results and Discussion

The statistical values of all test items and composite scores are derived from the obtained raw scores (Best & Khan, 2002). The result and discussion of this paper analyze through descriptive quantitative methods (Baskota, 2009). Volleying, servicing, passing, and set-up are the fundamental skill of volleyball. Therefore, it is an essential skill to be a good player. In this paper, the items of volleying, servicing, passing and set-up scores of the AAHPER volleyball skill test, as well as composite scores, are explained separately. The results of all test items and composite scores of community and institutional girls' groups are discussed in quantitatively below:

Comparison of Volleying Test

The volleying test of AAHPER is an indicator of the volleying ability of a volleyball game. In the volleying test, the volleying area is 5 feet to 11 feet above 5 feet width on the wall. The performance shows their performance from 3-4 feet far against the wall. The subject volleys against the walls as many times as possible within one minute. Performer record is permitted up to fifty scores. There was administered volleying test in both groups to measure the volleying ability. Respondents have obtained the score according to their volleying performance. The results of obtained scores of the volleying test are presented in the table below:

Table 1

Volleying Test between Community and Institutional Girl Students

Cases	Community Students	Institutional Students
Mean	8.85	21.35
Standard Deviation	4.20	10.33
Standard Error	0.94	2.31
Minimum	1.00	5.00
Maximum	16.00	36.00
Range	15.00	31.00
CV ¹	0.47	0.48
CV (%)	47.41	48.37
p-value of t-test (at $\alpha = 0.05$), $p = 0.00$		
Conclusion	The test result is significant at a 0.05 level of significance($p < \alpha$)	

The volleying skills of girls vary in different ways among the girl students of community and institutional schools (table 1). The average scores on volleying tests are higher among the girl students of the institutional school (21.35) compared to the community school (8.85). The volleying score of the girl students of the institutional school is thus more than double the volleying score of the community school. However, the variation in volleying skills is higher among the girls in institutional schools (SD = 10.33) is quite higher compared to the girl in community schools (SD = 4.20). The range is also higher among the girl students of the institutional school (31) than the girls of the institutional school (15). In contrast, the inequality in the volleying skills among the girl students of the community school (CV = 0.47) and the institutional school (CV = 0.48) is almost similar. Thus, there is wider inequality/variation between the volleying skills/scores of girl students of the community and institutional schools of western Nepal. Since $p < \alpha$, it is concluded that there is a significant difference between both groups.

Comparison of Serving Test

The serving test is conducted to measure the skill of service accuracy ability of volleyball players. It is an indicator of service skills. In a volleyball tournament, the match starts through service. The subject is given only ten trials in this test. The score is the total points made according to the serve lands on the target zone; these zones indicate 1-4 scores. The serving test score is given according to her serving performance. The results of service test scores are discussed in table 2.

Table 2

Servicing Test between Community and Institutional Girl Students

Cases	Community Students	Institutional Students
Mean	5.85	4.95
Standard Deviation	3.88	1.70
Standard Error	0.87	0.38
Minimum	0.00	2.00
Maximum	17.00	8.00
Range	17.00	6.00
CV	0.66	0.34
CV (%)	66.38	34.36

p-value of t-test (at $\alpha = 0.05$), $p = 0.41$

Conclusion This result is not significant at a 0.05 level of significance ($p > \alpha$)

The servicing skills of girls vary in different ways among the girl students of community and institutional schools (table 2). The average scores on servicing tests are slightly higher among the girl students of community schools (5.85) compared to the institutional schools (4.95). The servicing score of the girl students of institutional schools is thus more than double the servicing score of the community schools. However, the variation in servicing skills is slightly higher among the girls in community schools ($SD = 3.88$) is higher compared to the girl in institutional schools ($SD = 1.70$). Furthermore, the range is also higher among the girl students of community schools (17) than that of the girls in institutional schools (6). In contrast, the inequality in the servicing skills among the girl students of community schools ($CV = 0.66$) and the institutional schools ($CV = 0.34$) is difference/nonequivalent. Thus, there is a narrower equality/variation between the servicing skills/scores of girl students of the community and institutional schools of western Nepal. While calculating between the probability occurrence value (p) and α ($p = 0.41 > \alpha = 0.05$). It is found at $p > \alpha$. Thus, it is concluded that there is no significant difference between the groups.

Comparison of Passing Test

In passing the test, the assistance person tosses a high pass to the examiner who attempts to execute a legal volleyball pass over the rope onto the marked area. Twenty trials are given alternately to the right or left. The trials counts but no points are given for any ball, which hits the rope or net or fouls outside the target area. The maximum score is twenty from twenty trials. It has also been conducted on the respondents to measure the skill of passing accuracy performance of an individual. Therefore, it has found passing scores for both groups of students. The results and discussion according to the statistical cases are as follows:

Table 3

Passing Test between Community and Institutional Girl Students

Cases	Community Students	Institutional Students
Mean	6.35	8.95
Standard Deviation	2.30	3.30
Standard Error	0.51	0.74
Minimum	3.00	3.00
Maximum	11.00	15.00
Range	8.00	12.00
CV	0.36	0.37
CV (%)	36.23	36.88
p-value of t-test (at $\alpha = 0.05$), $p = 0.01$		
Conclusion	The test result is significant at a 0.05 level of significance ($p < \alpha$)	

The passing skills of girls differ in different ways between the students' groups in the community and institutional schools (table 3). The average score of passing tests is higher among the girl students of the institutional school (8.95) compared to the community school (6.35). Likewise, the variation in passing skills is higher among the girls in institutional schools ($SD = 3.30$) and is slightly higher compared to the girl in community schools ($SD = 2.30$). The range is also higher among the girl students of the institutional school (12) than the girls of the institutional school (8). In contrast, the inequality in the passing skills among the girl students of the community school ($CV = 0.36$) and the institutional school ($CV = 0.37$) is almost similar. Thus, there is wider inequality/variation between the passing skills/scores of girl students in community and institutional schools of western Nepal. Hence (table 3) $p < \alpha$, it is concluded that there is a significant difference between both groups.

Comparison of Set up Test

Set up test is conducted for respondents. This test is an indicator of set-up performance; it measures the set-up skill accuracy for spiking in a volleyball game. Assistance tosses a high pass to the subject who executes a set-up over the rope and onto the target area. Two subjects can be tested simultaneously, one set up to the right and the other to the left. Ten are given to the right and ten to left. Any ball that touches the rope or net does not hit the target and receives zero for that trial. If any thrown ball does not toss into the 6–5 feet area, the trial is to be repeated. The maximum score is twenty from the permitted twenty trials. It has administered to measure the set-up test score in both groups. Hence, results and discussion through the statistical cases are explained below:

Table 4

Set-Up Test between Community and Institutional Girl Students

Cases	Community Students	Institutional Students
Mean	7.70	8.40
Standard Deviation	3.05	3.30
Standard Error	0.68	0.74
Minimum	3.00	3.00
Maximum	14.00	14.00
Range	11.00	11.00
CV	0.40	0.39
CV (%)	39.55	39.28

p-value of t-test (at $\alpha = 0.05$), $p = 0.56$

Conclusion This result is not significant at a 0.05 level of significance ($p > \alpha$)

The above (table 4) table shows that the set-up skills of girls vary in different ways among the girl students of community and institutional schools. The average scores on set-up tests are slightly higher among the girl students of community schools (5.85) compared to the institutional schools (4.95). Likewise, the variation in set-up skills among the girls in community schools (SD = 3.30) is slightly higher compared to the girl in institutional schools (SD = 3.05). Furthermore, the range among the girl students of community school (11) and institutional school (11) are equal in scores of ranges of set-up skills. In contrast, the inequality in the set-up skills among the girl students of community schools (CV = 0.40) and the institutional schools (CV = 0.39) is nearly equivalent. Thus, there is a narrower equality/variation between the set-up skills/scores of girl students of the community and institutional schools of western Nepal. While calculating between the probability occurrence value (p) and α ($p = 0.41 > \alpha = 0.05$). We have found $p > \alpha$, it is concluded that there is no significant difference between both groups in set-up skills.

Comparison of Composite Score

The composite score is the main statistical case according to the objective of this research paper. This score determines the result of overall test items. The sum of all test items' scores is a composite score (Shahi, 2019). In this research paper, volleying, servicing, passing and set-up tests of AAHPER has conducted on the respondents. There were calculated the composite score for community and institutional girl students. The result and discussion according to the composite score are presented in the table below:

Table 5

Composite Score between Community and Institutional Girl Students

Cases	Community Students	Institutional Students
Mean	28.75	43.65
Standard Deviation	8.21	16.26
Standard Error	1.84	3.63
Minimum	9.00	15.00
Maximum	44.00	68.00
Range	35.00	53.00
CV	0.29	0.37
CV (%)	28.57	37.24
p-value of t-test (at $\alpha = 0.05$), $p = 0.00$		
Conclusion	The test result is significant at a 0.05 level of significance ($p < \alpha$)	

The composite scores (table 5) of overall test items of girls differ in different ways between the girl students of community and institutional schools. The average composite score is higher among the girl students of the institutional school (43.65) compared to the community school (28.75). The composite score of the girl students of the institutional school is thus more than a score of the composite score of the community school. Furthermore, the variation in the composite score (all above-mentioned skills) is higher among the girls in institutional schools ($SD = 16.26$) and is quite higher compared to the girl in community schools ($SD = 8.21$). The range is also higher among the girl students of the institutional school (53) than the girls of the institutional school (35). In contrast, the inequality in the volleying skills (composite score) scores among the girls of community school ($CV = 0.29$) and the institutional school ($CV = 0.37$) is also varied.

Thus, there is wider inequality/variation between the volleying skills/composite scores of girl students of the community and institutional schools of western Nepal. Since $p < \alpha$, this research paper concluded that there is a significant difference between both groups of girl students.

The composite scores represent all four test items of volleyball skills. Therefore, the research objectives and hypothesis is depended upon the result of the composite score. Whether the significant difference in volleyball skills occurring or not? This research problem has already solved this result. There was an applied p-value of t-test or as a statistical test at the 0.05 level of probability occurring score (p) is found greater than the threshold of non-probability value (α) between these statements, i.e. $p = 0.00 < \alpha = 0.05$. Hence, there was found a significant difference in overall test items of volleyball skill scores between girl students of community and institutional counterparts. Therefore, it is enough evidence in the data to accept this hypothesis. This means the girls of a community school may be more involved in intramural and extramural volleyball competitions, as well as sporting activities.

Conclusion and Implication

The AAHPER volleyball skill test includes volleying, servicing, passing and set-up tests, it has intended to measure fundamental skills in volleyball of respondents. The research paper's objective was to compare the volleyball skills of groups of girls in the community and institutional secondary schools in the Lamjung district of western, Nepal. In addition, it was hypothesized that there is a significant difference in volleyball skills between them. While comparing the mean score, the girl students of the institutional school were found better volleyball skills than their community counterparts. Furthermore, a p-value of the t-test has applied at 0.05 significant level; it has found no significant difference between them in servicing and set-up of the test. In contrast, significant differences were found in volleying, passing, and composite

scores. Hence, this research paper found a significant difference between community and institutional girl students. Therefore, the hypothesis is accepted. This means the girls of a community school may be more involved in intramural and extramural volleyball competitions, as well as sporting activities.

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