

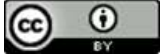
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A Comparative Study Using an Analytical Program for the Effectiveness of the Performance of the Sending and Receiving Skills of Female Premier League Volleyball Players

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Abstract

The two researchers decided to conduct a comparative study of the level of effectiveness of performance for the skills of serving and receiving the serve for players of clubs participating in the Iraqi Premier League in women's volleyball, using an analytical program for the purpose of revealing strengths and weaknesses, and through the two researchers' follow-up of the matches of the Iraqi Premier League in volleyball for the advanced category, and also the fact that one of the two researchers was a player in one of the clubs of the Iraqi Premier League in volleyball found that there is a weakness in the level of effectiveness of performance for some technical skills, namely the skills of serving and receiving the serve, as there is a disparity between one club and another, as well as between one player and another. The researchers used the descriptive approach in the style of comparative and analytical study for its suitability to the research problem, while the two researchers identified the research community. The number of teams participating in the Iraqi Premier League in volleyball for the sports season 2021-2022 is 10 clubs, while the research sample was chosen from the teams that qualified for the semi-finals in the Iraqi Premier League in women's volleyball for the sports season 2021-2022, where the number of clubs qualified was (4), namely (Akkad Ainkawa, Aphrodite, Sennacherib, Qaraqosh) and thus the percentage of the research sample reached 40%, as the matches were analyzed using the most famous statistical program in the world (Datavolley). The two researchers concluded that significant differences appeared in the level of effectiveness of the skill performance of the serving skill in favor of the clubs (Aphrodite, Qaraqosh, Akkad). Ainkawa) and the absence of significant differences in the level of effectiveness of the performance of the serving skill for the Sennacherib Club, and the emergence of significant differences in the level of effectiveness of the skill performance of the skill of receiving the serve for the benefit of the clubs (Qaraqosh, Aphrodite, and Sennacherib) and the absence of significant differences in the level of effectiveness of the performance of receiving the serve for the Akad Ainkawa Club. The two researchers recommended the necessity of adopting the principle of objective evaluation in each of the various stages of training and in the competition stage by selecting standardized tests and analytical programs for offensive skills to monitor the effectiveness of skill performance, address their fluctuations at appropriate times, and emphasize the development of tactical capabilities due to their close connection with physical and skill capabilities, and this achieves one of the sustainable development goals of the United Nations in Iraq which is (Quality Education).

Keywords | analytical program, performance effectiveness, serving and receiving skills, volleyball

Introduction:

The increasing development and excitement of the game of volleyball and the offensive and defensive skills performed by international teams have raised the level of sporting and technological development, and the excitement increases with the skill of serving and receiving the serve in exciting and exciting the masses and with the beauty it gives to the game. Therefore, clubs and teams have become mainly concerned with the level of effectiveness. These skills are achieved through the use of a computer analytical program that would reveal errors moment by moment, identify all match events, and evaluate the performance of competing teams in all skills. Therefore, the two researchers decided to conduct a comparative study of the level of effectiveness of performance for the skills of serving and receiving the serve for players of clubs participating in the Iraqi Premier League for women's volleyball, using an analytical program for the purpose of revealing strengths and weaknesses. The skill level of the team or player in the game of volleyball gives an indication of the extent of the team's individual and collective skill progress. The method of analyzing matches using the computer is one of the latest methods that coaches resort to to know the level of performance of their players and teams, address weaknesses and enhance strengths, which makes it easier for the coach to develop a plan and method. The appropriate game for each match, and as a result of keeping up with the advanced level in volleyball, we need to conduct an analysis of the team's technical skills in order to diagnose the players' weaknesses and strengths to raise the technical level and be on the right path in preparation, since serving and smashing are among the important and essential skills in winning the match. The two researchers decided to choose these two skills, and the research problem was summarized by the two researchers following the matches of the Iraqi Premier League in volleyball for the advanced category, and also the fact that one of the two researchers is a player

in one of the Iraqi Premier League volleyball clubs, with a weakness in the level of effectiveness of performance for some technical skills, which are the serving skills. And receiving the serve, as there is a discrepancy between one club and another, as well as between one player and another in performance. From the above, the first goal of the research is to identify the level of effectiveness of the performance of the skills of serving and receiving the serve for the advanced female players in the Iraqi Premier League in volleyball, and the second goal is to compare the level of effectiveness of the performance of the skills of serving and receiving the serve for the advanced players in the Iraqi Premier League of volleyball. As for the research hypothesis, there are significant differences Statistical significance in the level of effectiveness of the performance of the skill of serving and receiving the serve for female volleyball players. The field of human research represents the female players of the Iraqi Premier League in volleyball. As for the temporal field, the period extending from (8-12 of the month of August) until (10-10), and the spatial field is the Sulaymaniyah Sports Club hall.

Method and procedures:

The two researchers used the descriptive approach in the comparative and analytical study style for its suitability to the research problem, while the two researchers identified the research community with the teams participating in the Iraqi Premier Volleyball League for the 2021-2022 sports season, numbering 10 clubs, while the research sample was chosen from the teams that qualified for the semi-finals in the Iraqi Premier League. In women's volleyball for the 2021-2022 sports season, the number of qualified clubs reached (4), namely (Akkad Ainkawa, Aphrodite, Sennacherib, Qaraqosh), and thus the percentage of the research sample reached 40%. The two researchers filmed 10 matches from the Iraqi Premier League in volleyball using a high-resolution Sony camera. The filming angles were determined so that the players' numbers appeared clearly, in addition to the performance of the skill

of serving and receiving the serve with high accuracy. This information was entered into the Data Volley program used to analyze volleyball matches and extract the effectiveness of the skill performance of players and teams. This program analyzes the most minute details of the match for all skills and players, through which it is possible to analyze the strengths and weaknesses of both teams and read and analyze the players' performance on the field, starting with the serve and determining its direction as well as the player's reception of it and evaluating its quality, in addition to reading preparation trends and determining its direction across a group. Among the codes that the program gives for each skill, the Data Volley program was used to analyze the skill performance of female volleyball players in the Iraqi Premier League, which allowed us to collect and analyze data accurately and effectively during the matches. The program was used to analyze the

transmission and reception skills, where each transmission and reception was classified according to quality and result (direct transmission, strong transmission, weak transmission, incorrect transmission) and reception (excellent reception, good reception, weak reception, incorrect reception) and the effectiveness of the performance was obtained. skills through the program, and analysis of variance was used to evaluate the differences between the teams in transmission and reception skills. The statistical methods used are the arithmetic mean, standard deviation, F value for the purpose of analysis of variance, and LSD value to extract differences between groups. Degree of effectiveness: extracted directly from the analytical program using the computer (Fisher) (2)

Results:

Table (1)

Shows the results of the F test to analyze the variance between and within the four clubs for the level of effectiveness of sending performance

| Source of variance | sum Squares | Free degree | Mean squares | F calculated value | Semantic value | Connotation Differences |
|--------------------|-------------|-------------|--------------|--------------------|----------------|-------------------------|
| Between groups | 675.43 | 3 | 261.89 | 22.345 | 0.000 | significance |
| Within groups | 89.98 | 8 | 11.08 | | | |
| General total | 789.8 | 11 | | | | |

Below significance level (0.05) and degree of freedom (3-8)

Table (2)

It shows the results of the (L.S.D) test to determine the least significant difference between and within the four clubs and the ranking of the clubs according to the level of performance effectiveness of the sending skill.

| Source of variance | sum Squares | Free degree | Mean squares | F calculated value | Semantic value | Connotation Differences |
|--------------------|-------------|-------------|--------------|--------------------|----------------|-------------------------|
| Between groups | 781.82 | 3 | 260.6 | 23.482 | 0.000 | significance |
| Within groups | 88.78 | 8 | 11.09 | | | |

| | | |
|---------------|-------|----|
| General total | 870.6 | 11 |
|---------------|-------|----|

Table (3)

Shows the results of the f) test to analyze the variance between and within the four clubs for the level of effectiveness of performance in receiving the send

| Totals | The difference between means | Difference results | Significance value | The significance of the differences | Ranking of teams |
|-----------------------------|------------------------------|--------------------|--------------------|-------------------------------------|------------------|
| Aphrodite - Qaraqosh | 70.2-73.16 | 2.96 | 0.307 | random | Aphrodite |
| Aphrodite - Akkad Ainkawa | 66 -73.16 | 7.16 | 0.03 | significance | Qaraqosh |
| Aphrodite - Sennacherib | 52.1 -73.16 | 21.06 | 0.000 | significance | Almost Ainkawa |
| Akkad Ainkawa - Sennacherib | 52.1 -66 | 13.9 | 0.001 | significance | Sennacherib |
| Qaraqosh - Sennacherib | 52.1 -70.2 | 18.1 | 0.000 | significance | |
| Qaraqosh - Akkad Ainkawa | 70.2-66 | 4.2- | 0.161 | random | |

Below significance level (0.05) and degree of freedom (3-8)*

Table (4)

It shows the results of the L.S.D test to determine the least significant difference between and within the four clubs and the ranking of the clubs according to the level of effectiveness of performance for the skill of receiving the send.

| Totals | The difference between the means | Difference results | Significance value | The significance of the differences | Ranking of clubs |
|-----------------------------|----------------------------------|--------------------|--------------------|-------------------------------------|------------------|
| Qaraqosh - Aphrodite | 70.2-73.16 | 2.96 | 0.307 | random | Qaraqosh |
| Qaraqosh - Sennacherib | 66 -73.16 | 7.16 | 0.03 | significance | Aphrodite |
| Qaraqosh - Akkad Ainkawa | 52.1 -73.16 | 21.06 | 0.000 | significance | Sennacherib |
| Sennacherib - Akkad Ainkawa | 52.1 -66 | 13.9 | 0.001 | significance | Akkad Ainkawa |
| Aphrodite - Akkad Ainkawa | 52.1 -70.2 | 18.1 | 0.000 | significance | |
| Aphrodite - Sennacherib | 70.2-66 | 4.2- | 0.161 | random | |

Results:

Through Table (2) in the serving skill, the two researchers showed the emergence of significant differences in the level of effectiveness of the skill performance of the serving skill in favor of the Everdet Club during its matches with the rest of the clubs, which confirms the emergence of a

strength in the level of effectiveness of the performance of the serving skill among the female players of the Everdet Club. The two researchers attribute the reason for this strength to many factors, including the skill capabilities of the players of the Everdet Club, in addition to the fact that the skill of serving requires speed, agility, and accuracy in direction. This comes through

participation and increased practice of the skill, which develops accuracy in the skill performance of all technical skills in volleyball. The two researchers attribute the reason for the emergence of significant differences in favor of the players of the clubs (Qaraqosh - Akad Ainkawa) to the possession of these club's players who are distinguished by long experience and also physical characteristics and physical abilities, especially. In addition to these reasons, the two researchers believe that these teams use different types of serves (flutter and serve from above) and have female players who excel in implementing offensive plans with different serving skills. As for Sennacherib Club, there are few or low effectiveness rates for the serve facing from above, as this serve did not have a good effect or morale on the receiving players from the other three teams. The two researchers attribute the reason for this weakness to the lack of accuracy and correct focus in performing this transmission. The exercises must focus on using the serve in a concentrated manner. "Focusing on the skill well helps the player and becomes more motivated. "Then coaches must emphasize continuous training for this skill in order to master it and be effective in the match." (Ahmed) (5). With a high hitting speed and hitting the ball straight, strong, and directed at the player. When training this type of serve, which is considered a closed skill that depends only on the technical side of the player, or between two players, or in spare points, or on a player with poor reception, researchers advise training consistently and trying to isolate the player from external influences when performing the serve. Also, follow the gradual method and repeat the exercise according to the different playing situations, as you must stay away from the libero player if he is good when performing the confrontation from the top, as Nahida Abdel Zaid (7) states that the goal of the serve is to try to score a point, and the two researchers agree with this. The opinion is that the serving skill is an effective offensive skill from the tactical, technical and psychological aspects, especially after the

advanced teams used the jump serve for most of the match.

)Discussion of Table No. (4)) In the skill of receiving the transmission, the two researchers found, through Table (2), the emergence of significant differences in the level of effectiveness of the skill performance of the receiving skill in favor of Qaraqosh Club during its matches with the rest of the clubs, which confirms the emergence of strength in the level of effectiveness of the performance of the receiving skill. Serving for Qaraqosh Club players. The two researchers attribute the reason for this strength to many factors, including the skill capabilities of the Qaraqosh Club players, in addition to the fact that the skill of receiving the serve requires high response speed, attention, and accuracy in performance. This comes through participation and increased practice of the skill, which develops accuracy in the skill performance of all technical skills in volleyball (2021) (6). The two researchers attribute the reason for the emergence of significant differences in favor of players from the clubs (Averdit - Sennacherib) to the fact that these clubs have players who have long experience, as well as physical and motor characteristics, and special physical abilities. In addition to these reasons, the two researchers noted that the triangular formation in the skill of receiving the serve is the formation most used by the four clubs in terms of the formations of receiving the serve, relative to the quadrilateral formation. The reason for this greater use of the three-formation is a clear weakness in this formation, which was caused by the strength of the serves that it enjoys. Participating clubs, which need to use a four-sided formation that is more effective in receiving the serve than a three-sided formation. The effort in the reception process is distributed among four players, including the front line player, in addition to controlling the court, which is more comprehensive and precise in terms of standing and preparing for the reception process. Getting the players to the highest level of good

performance in the game of volleyball is achieved through developing various physical components, technical skills and tactical aspects in a way that increases their ability to achieve the best performance.

Studies indicate the importance of physical abilities such as strength and the ability to jump in the effectiveness of serving and receiving serves, as strengthening the muscles of the upper and lower limbs can improve the performance of skills (Pawlik & others) (4). In addition, some researchers evaluate the effectiveness of serving reception performance in light of the level of motor coordination abilities, indicating that matching motor abilities can improve skill performance in volleyball (Ahmed & El-Deeb,) (5). Moreover, it shows a kinematic analysis of the movements of the body and arms while receiving the transmission. Coordination between foot and arm movements depends on different control processes, which can affect the effectiveness of transmission and reception (Benerink, Bootsma, & Zaal), (1). Saya and Lama indicated that there is a significant correlation between mental motivation and the skill of receiving the serve in volleyball (3).

Conclusions:

1-The necessity of adopting and using statistical programs by the Central Iraqi Volleyball Federation to reveal the performance levels of teams, especially in official matches, to determine the true level of skills and tactics and work to develop it.

2-The necessity of having a statistical analyst for teams and clubs participating in volleyball leagues and their various categories to analyze the skill and tactical performance and record the data that occurs on the field and present it to the coach during and after the match.

3-Detecting the most prominent weaknesses in matches and working to address them during the training program.

4-Coaches analyze their teams' matches and present them to the players to increase their

awareness, discover their mistakes, and increase their motivation to provide their best.

Author's declaration:

Conflicts of interest: None

We confirm that all tables and figures in this article are ours and written by the researchers themselves.

Ethical-Clearance: this manuscript approved by local ethical committee of physical education and sport sciences college for women on (June /2024)

Author's contributions:

All contributions of this study were done by the researchers (S.T. and N.Z.) who get the main idea and work on writing and concluding also with number of experts, Rand Issa (Mustansirya University) in Statistics, Manal Bayat in revision, Taj Al-deen Alaa Al-deen in translating, Ali Makki in proofreading

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دراسة مقارنة باستخدام برنامج تحليلي لفاعلية الأداء لمهارتي الارسال واستقبال الارسال للاعبات الدوري الممتاز بالكرة الطائرة

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ارتأت الباحثتان إجراء دراسة مقارنة لمستوى فاعلية الاداء لمهارتي الارسال واستقبال الارسال للاعبات الأندية المشاركة في الدوري العراقي للممتاز بالكرة الطائرة للنساء باستخدام برنامج تحليلي لغرض الكشف عن نقاط القوة والضعف ومن خلال متابعة الباحثتان لمباريات الدوري العراقي الممتاز بالكرة الطائرة لفتنة المتقدمات وأيضا كون احدي الباحثتان لاعبة في أحد اندية الدوري العراقي الممتاز بالكرة الطائرة وجدتا ان هناك ضعف في مستوى فاعلية الاداء لبعض المهارات الفنية وهي مهارتي الارسال واستقبال الارسال حيث هنالك تفاوت بين نادي واخر وكذلك بين لاعبة وأخرى واستخدمت الباحثتان المنهج الوصفي بأسلوب الدراسة المقارنة والتحليلية لملائمته لمشكلة البحث في حين حددت الباحثتان مجتمع البحث بالفرق المشاركة في الدوري العراقي الممتاز بالكرة الطائرة للموسم الرياضي 2021-2022 وعددها 10 اندية في حين اختيرت عينة البحث من الفرق المتأهلة الى الدور النصف النهائي في الدوري العراقي الممتاز بالكرة الطائرة للسيدات للموسم الرياضية 2021-2022 حيث بلغ عدد الأندية المتأهلة (4) وهي (اكاد عينكاوة، افروديت، سنحاريب، قرقوش) وبهذا بلغت النسبة المئوية لعينة البحث 40 % إذ تم تحليل المباريات باستخدام البرنامج الاحصائي الاكثر شهرة عالمياً **Data volley** واستنتجت الباحثتان ظهور فروق معنوية في مستوى فاعلية الاداء المهاري لمهارة الارسال لصالح اندية (افروديت، قرقوش، اكاد عينكاوة) وعدم ظهور فروق معنوية في مستوى فاعلية الاداء لمهارة الارسال لنادي سنحاريب وظهور فروق معنوية في مستوى فاعلية الاداء المهاري لمهارة استقبال الارسال لصالح اندية (قرقوش، افروديت، سنحاريب) وعدم ظهور فروق معنوية في مستوى فاعلية الاداء استقبال الارسال لنادي اكاد عينكاوة. واوصت الباحثتان ب ضرورة اعتماد مبدأ التقويم الموضوعي في كل مرحلة من مراحل التدريب المختلفة وفي مرحلة المنافسات بانتقاء اختبارات مقننة وبرامج تحليلية للمهارات الهجومية لمتابعة فاعلية الاداء المهاري ومعالجة تذبذبها في الأوقات المناسبة والتأكيد على تنمية القابليات الخططية لترابطها الوثيق مع القابليات البدنية والمهارية . وهذا ما يحقق احد اهداف التنمية المستدامة للامم المتحدة في العراق (التعليم الجيد).

برنامج تحليلي، فاعلية الاداء، مهارتي الارسال والاستقبال، الكرة الطائرة

الكلمات المفتاحية