

The Relationship between Regular Participation in Sports Competitions and the Development of certain Physical Characteristics among Football Players during the First Half of the Season. « A Field Study on the first Team of Esperance Guelma E.S.G »

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Abstract:

This study aimed to investigate the relationship between regular participation in sports competitions and the development of some physical characteristics, namely aerobic endurance and explosive power, among football players during the first half of the season. A descriptive approach was used, and a sample of 20 football players from the first team (senior players) of Esperance Guelma was selected based on their participation levels in official matches, it was divided into two groups, the first includes the 10 most participating players during club competitions in the leg, while the second group consisted of the 10 least participating players. Physical tests were administered at the beginning and the end of the first half of the football season, and the results were analyzed using the statistical package program (SPSS). The findings of the study supported our hypothesis, showing that regular participation in sports competition is significantly related to the development of aerobic endurance and explosive power among first team football players. These findings have implications for coaches and athletes seeking to optimize training strategies and improve athletic performance.

Keywords: Sports Competition; Physical Characteristics; Football; Aerobic Endurance; Explosive Power.

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I- Introduction :

Sports plays an essential role in our lives, not only as a form of entertainment but also as a source of physical and mental well-being. For athletes and players, sports are of greater importance because it affects their overall performance and success in their respective fields, Participation in team sports such as football can have positive for person health, including reducing symptoms of anxiety and depression , Football is considered the best sport, being the most popular and successful, it is estimated that more than 4 billion people worldwide are football fans, making it the most watched and played sport globally “During the 1998 FIFA World Cup, Football Association (FIFA) estimated that more than 4 billion spectators watched the game on TV” (Magal & al, 2009, p. 1). The popularity of football can be attributed to its simplicity and accessibility. It has a global appeal. It can be played with minimal equipment and almost anywhere, from organized matches in professional stadiums to casual games in the streets. In addition, major international football tournaments such as the FIFA World Cup have a massive following and bring together people from different cultures and backgrounds different together to celebrate this sport. Despite its long history and global spread, football continues to grow and develop, to reflect the changing social and cultural landscape of our world. A large number of followers is deeply attached to various competitions, including local, continental and international championships, as well as matches between different teams As these competitions constitute the essence of football and provide the basis upon which training programs and preparatory camps are designed in order to secure titles and cups that will be contested throughout the year. Winning these competitions is essential for clubs to assert their worth, both domestically and internationally, as they are often judged on their achievements.

To achieve this, each coach must work to help the player reach the highest levels of performance in various aspects (tactical, technical and physical). The physical aspect in particular is very important, as it can “significantly affect the functional and organic levels of the athlete and contribute to the development of various physical, motor, tactical and voluntary capabilities that greatly affect the functional and organic levels of the athlete and contribute to the development of various physical, motor, tactical and voluntary capabilities” (علوي، 1994، صفحة 51) and this requires the use of modern training methods and techniques, which can be defined as “a set of physical exercises and efforts that lead to functional adaptation or change in the internal body systems to achieve a high level of athletic achievement” (البساطي، 1998، صفحة 2) or a functional change in the body's internal systems to achieve a high level of athletic achievement.

However, training alone is not enough for a player to excel at football. It is undoubtedly a crucial aspect of player development, but it is only one piece of the puzzle. To achieve their goals, footballers need to focus on developing a comprehensive skill set, as well as developing the right attitude and mindset. The role of competition cannot be underestimated, as it helps players assess their skills and measure their progress against their opponents. Various competitions are the best place and platform for players to showcase their abilities and learn from their mistakes, which ultimately leads to improving their overall performance, "Football matches are the real indicator of the level of the players physically, functionally, and dynamically" (سيف، 2010، صفحة 7)

In team sports such as soccer, players must not only maintain their skills, but also work together as a cohesive unit to achieve success. This requires players to not only compete but also play consecutively in multiple matches, which can be physically and mentally challenging. Which makes them all undergo harsh daily training in preparation for the upcoming matches, as the primary goal for them is to participate in matches regularly, which is a challenge and a primary goal that they seek to achieve since the beginning of the season. Regular participation in matches is an important motivator for players, giving them the confidence to show their abilities and skills.

But because of the laws of the game, not all players can participate in a football match. Instead, the coach chooses eleven players to start the match mainly, "Each team has 11 players on the field, one of whom is a goalkeeper." (Metcalfe, 2014, p. 9) While the reserve players remain on the sidelines, the others are not called up to the match. Where the coach depends in his choices on a set of criteria, the most important of which is the desire to win, which makes him choose the ready player who guarantees him a performance at the level according to his perception of the course of the match. From the continuation of all the players to train continuously and regularly, but with the passage of time, two groups of players are formed within the same team, a kind of difference appears between them, especially between the main players who participate regularly and the players who play only a little, so we find the main players with high physical and psychological fitness Positive compared to their colleagues, from a physical point of view, for example, we notice differences in stamina and

speeds between the two groups, and this observation is clearly confirmed when a key player misses an important match due to exhaustion, injury, or a change of tactics, and the coach is forced to include a reserve player who has not played in many matches, where he can The average spectator may notice this player's inability to keep up with him and coordinate the match compared to his colleagues, especially in his inability to win duels and his feeling of extreme fatigue at the end of the match.

In front of the repetition of this incident in most matches and in front of common phrases in football world like "the bench kills the player" or "the best way to train is competition" Since there is no clear scientific evidence to support these claims, we prompted this research study to explore the relationship between regular participation in athletic competitions and the development of certain physical characteristics.

All this made us ask the following general question:

Is there a relationship between regular participation in sports competition and the development of certain physical characteristics among football players?

This general question is further broken down into two sub-questions:

- Is there a relationship between regular participation in sports competition and the development of aerobic endurance among first team football players?
- Is there a relationship between regular participation in sports competition and the development of explosive power among first team football players?

1- Hypotheses:

The main hypothesis:

Regular participation in sports competition is related to the development of specific physical characteristics among football players.

Partial hypotheses:

H1: There is a correlation between regular participation in sports competition and the development of aerobic endurance among football players.

H2: There is a correlation between regular participation in sports competition and the development of explosive power among football players.

2-Concepts and terms:

- Sports competition:

- **Idiomatically:** "Sports competition involves the pursuit of a goal or set of goals by two or more people or teams operating within a set of rules that specify the conditions under which goal attainment will be measured and the procedures for determining the winner." (Coakley, 2020, p. 141)

- **Procedurally:** It is the most important stage in the sports season. It is a struggle between two players or two teams, each of which aims to win over the other during a match or competition, according to specific laws that everyone respects, The competitors do their best.

- Football:

- **Idiomatically:** "Football is a game played by two teams of eleven players, each team seeking to score goals by kicking a ball into the opposing team's goal" (Dubois, 2010, p. 10).

-**Procedurally:** Football is a popular team sport that is played between two teams, each consisting of eleven players. The objective of the game is to score points by advancing an oval-shaped ball down the field and crossing the opponent's goal line while preventing the opposing team from doing the same.

- Physical qualities:

-**Idiomatically:** "Physical qualities refer to the underlying physical and physiological characteristics that enable athletes to perform sports skills. Examples of physical qualities include maximal strength, speed, power, agility, flexibility, and endurance" (R, Baechle, & Earle, 2008, p. 19).

-**Procedurally:** It is the sum of the abilities that the athlete possesses, which help him achieve his sporting goals. These are unstable qualities that improve with training and fade away with rest and laziness.

- Aerobic endurance:

- **Idiomatically:** «Aerobic endurance is the ability of the body to perform prolonged, large-muscle, dynamic exercise at moderate to high levels of intensity. The ability to sustain this type of exercise depends on the efficient delivery of oxygen to the working muscles, the capacity of the muscles to utilize oxygen to produce energy, and the removal of waste products from the muscles." (Dr. William D. McArdle, 2021, p. 26).

- **Procedurally:** Aerobic endurance known as cardiovascular endurance, refers to the ability of the body's cardiovascular system to supply oxygen to the muscles during prolonged physical activity.

- **Explosive power:**

- **Idiomatically:** "Explosive power is the ability to generate force rapidly, which involves a combination of speed and strength. This type of power is necessary in sports that require movements that are quick, powerful, and executed with maximum force, such as jumping, throwing, or sprinting." (Thomas R. Baechle, 2016, p. 47).

- **Procedurally:** Explosive power refers to the ability of the body to generate maximal force in a short amount of time. It is commonly associated with athletic movements that require rapid acceleration or maximal exertion, such as jumping, throwing, or sprinting.

II– Methods and Materials:

1- Population:

Is a group of individuals, objects, or events that share common characteristics and are of interest to the researcher (Nestor & Russell K, 2009, p. 167), in this study, the population consists of all the football teams that are actively playing in the inter-league section of the East, during the season 2021/2022. The total number of teams in this community was 16, with an estimated total of 350 players.

2- Sample:

Deborah define it "...so they select a subset of individuals from the population, study those individuals, and use that information to draw conclusions about the whole population, this subset of population is called a sample" (Rumsey, 2023, p. 31)

About our sample, it is consisted of players from Esperance Guelma's first team (senior players), who were selected as follows:

We intentionally chose our sample using the simplest method of selecting samples, which consisted of two groups. The selection process was carried out as follows:

Firstly, goalkeepers were excluded from selection as they are subject to special specifications and criteria and were not within the scope of our study. Additionally, two players who suffered serious injuries during a match were ruled out, as they were rested and medically monitored for a long time (approximately one and a half months).

We then ranked the remaining players in descending order based on their participation during the first leg of the season. The first group consisted of the 10 most participating players (who played regularly), with an average playing time of approximately 1259 minutes during 15 league and cup matches.

The second group consisted of the 10 players with the least participation (not playing regularly), with an average of 156 minutes played in 15 league and cup matches. We also excluded two players from the sample due to their low average playing time (about 610 minutes), as this would not serve the purpose of our research.

	Age(year)	Weight(kg)	Height(cm)	T.play(min)	T. trai(min)
Group N1 (10)	27,3 ± 0,6	75,6 ± 0,5	176 ± 2	1259±10	5760±20
Group N2 (10)	26,9 ± 0,3	76,1 ± 0,7	173 ± 3	156± 20	5760±20
Total .Sample(20)	27,1 ± 0,4	75,85 ± 0,2	174,5 ± 1,5	707,5± 15	5760±20

Table (1): characteristics of the sample

3- Variables:

- **Independent variable:** regular participation in sports competition.

- **Dependent variable:** the development of certain physical characteristics (aerobic endurance and explosive power) among football players.

4- Areas of research:

A- Spatial field: The field research was carried out at "Souidani Boudjemaa stadium" located in Guelma city (E.S.G Stadium).

B- Time field: The time period considered for our research was the first leg of the 2021/2022 season, test day was: 5th september 2021.

Retest day was: 06th juniary 2022.

c- Human field:

- 10 players who regularly participated in official competitions during the first leg of the 2021/2022 season.
- 10 players with the least participation in matches during the same stage, who did not play regularly.

Study approach: "The nature of the study is what determines the type of method used, because whatever the subject of the research, the value of the results depends on the value of the methods used". (انجرس و ترجمة بوزيد صحر اوي، 2004، صفحة 97).

In our study, we chose the descriptive approach because it is most appropriate to the nature of the research.

5- Tools Used in Research:

5.1. Bibliographic Study: We conducted a comprehensive bibliographic study, collecting theoretical information from various sources related to the subject of our study. This helped us to form a strong theoretical background that we could draw upon when needed.

5.2. Physical Tests: We consulted a group of specialized doctors, physical attendants, and trainers with high levels of training. Based on their advice, we selected the following physical tests:

- For the study of endurance, we chose the 20-meter shuttle run test as an optimal option.
- For explosive power, we conducted Vertical Jump Test from Stability.

- Endurance Test: 20-Meter Shuttle Run Test:

Protocol:

Set up cones or markers 20 meters apart to mark the running distance.

Participants stand behind one of the cones, facing the other cone.

On the signal, the participant runs to the opposite cone and touches it with their foot before turning and running back to the starting cone.

The participant must reach the opposite cone before the beep sounds.

The time between beeps gradually decreases, indicating an increase in running speed.

If the participant reaches the opposite cone before the beep sounds, they wait for the beep before running back to the starting cone.

If the participant does not reach the opposite cone before the beep sounds twice in a row, the test is terminated.

The test continues until the participant can no longer keep up with the required running speed and misses the beep twice in a row.

The total distance covered in meters and the final level and shuttle reached are recorded.

The results can be used to estimate maximal oxygen uptake (VO₂max) and to provide an indication of cardiorespiratory fitness. (Linda S. Pescatello, Arena, Deborah Riebe, & Paul D. Thompson, 2018, p. 117).

- Strength Test: Vertical Jump Test from Stability.

- **Equipment:** You will need a wall-mounted or free-standing vertical jump measuring device, such as a Vertec or Just Jump system.

- **Set-Up:** Adjust the measuring device to the participant's reach height. The participant stands facing the measuring device with their feet shoulder-width apart and their dominant hand on top.

- **Testing:** The participant performs a countermovement jump, in which they bend their knees and jump as high as possible, reaching up and touching the highest vane possible. The participant is given two practice jumps, followed by three recorded jumps with a rest of approximately 30 seconds between jumps. The best jump height is recorded.

- **Interpretation:** The participant's best jump height is compared to normative data based on age and sex to determine their percentile rank.

- **Analysis:** The results are analyzed to assess the participant's lower body power and to monitor changes in power over time. (Haff & N. Travis Triplett, 2016, p. 269)

6- Scientific conditions of the tool:

The researcher reached the validity of the test based on the reliability coefficient, the researcher arrived at the validity of the test based on the stability coefficient, as to obtain the validity of the test, and we calculated the validity coefficient from the following equation :

$$\text{Validity} = \sqrt{\text{stability coefficient.}}$$

We got the following results:

	Test	Stability coefficient	Reliability coefficient
1	20metter shuttle run	0,98	0,98
2	Vertical jump	0,91	0,95

Table (2): results of stability and reliability coefficient.

It is clear from the table that all the values of the correlation coefficients are close to 1, meaning that the stability coefficient is strong and the degree of validity is high, and this indicates the validity of the stability of the used tests.

7- Procedures for the study:

- A- Conducting pre-tests:** The researcher conducted the pre-tests in the team's training stadium, on Sunday 5th September 2021, at 17, where the researcher started with vertical jump test, then 20metter scuttle run test.
- B- Following the competition:** This stage consisted of following up the time and duration of the team's participation in all official matches for the first leg of the 2021/2022 season, which extended from 10/09/2021 to 31/12/2022, with a total of 15 matches and a total time estimated at 1350 minutes plus 60 minutes of lost allowance. And 180 minutes of cup matches, (Global time: 1590 minutes)
- C- Conducting post-tests:** The researcher conducted the pre-tests in the team's training stadium, on Thursday 6th January 2022, at 16dc, where the researcher started with vertical jump test, then 20metter scuttle run test.

8- Statistical methods:

Statistical analysis is a fundamental aspect of research that enables us to better understand the factors that influence our study and reach meaningful conclusions. The choice of statistical methods depends on the type of problem, data characteristics, and research objectives. In our study, we used SPSS version 22 to perform statistical analysis, and we employed the following methods:

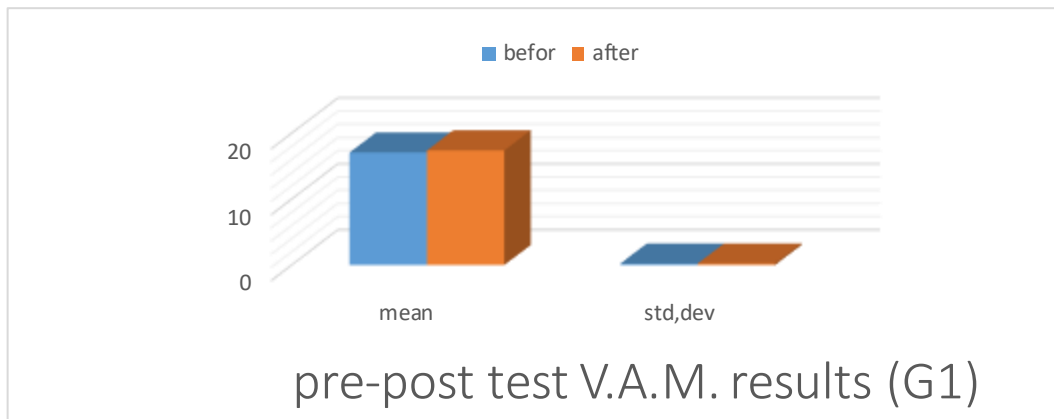
- **Mean:** the sum of all scores divided by the number of scores." (Gravetter & Wallnau, L. B., 2014, p. 110).
- **Standard deviation:** "The standard deviation is a measure of variability that reflects the average distance of any score in the distribution from the mean of the distribution. It is the square root of the variance." (Arthur Aron, Elliot Coups, & Elaine N. Aron, 2018, p. 121)
- **T test:** "A t-test is a parametric statistical test used to determine whether two groups of scores are significantly different from one another. It does this by comparing the means of the two groups while taking into account the variability of the scores within each group." (Coolican, 2014, p. 166)

9- Presentation and analysis of the results of the maximum air velocity test:

A-The first group (play regularly):

Test	Befor		After		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
20m.Shuttle Run	17,06	0,21	17,40	0,23	4,63	2,26	0,01	Sig

Table (3): Comparison of the maximum aerobic speed results before the start of the out leg and after the end of the out leg for the first group that plays regularly.



The comparison of pre- and post-test results for the maximum aerobic velocity test in the first group (play regularly) was analyzed through tables. In the pre-test, the arithmetic mean was 17.06 with a standard deviation of 0.21, while in the post-test, the arithmetic mean was 17.40 with a standard deviation of 0.23. The calculated value of "T" was 4.63 at a significance level of 0.05 with 9 degrees of freedom is higher than tabular value of "T", indicating a statistically significant difference in favor of the post-test. Additionally, the Ttest table showed a significance level (sig 2-tailed) of 0.01, which is less than the significance level of 0.05, leading to the acceptance of the alternative hypothesis that there are significant differences between regular participation in sports competitions and the development of aerobic endurance.

From the above, we can conclude that there are significant differences in the maximum aerobic velocity test. The post-test results showed a clear improvement compared to the pre-test results for the group of players who regularly participated in the first leg of the season. This finding suggests that the regular participation of this group in consecutive matches contributed to improving the endurance of most players. Overall, these results underscore the importance of regular competition participation in enhancing physical fitness and endurance.

B- The second group (do not play regularly):

Test	Befor		After		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
20.mShuttle Run	16,97	0,26	17,02	0,32	0,83	0,26	0,42	N.Sig

Table (4): Comparing the results of the maximum aerobic velocity before the start of the first leg and after the end of the first leg for the second group that does not play regularly.

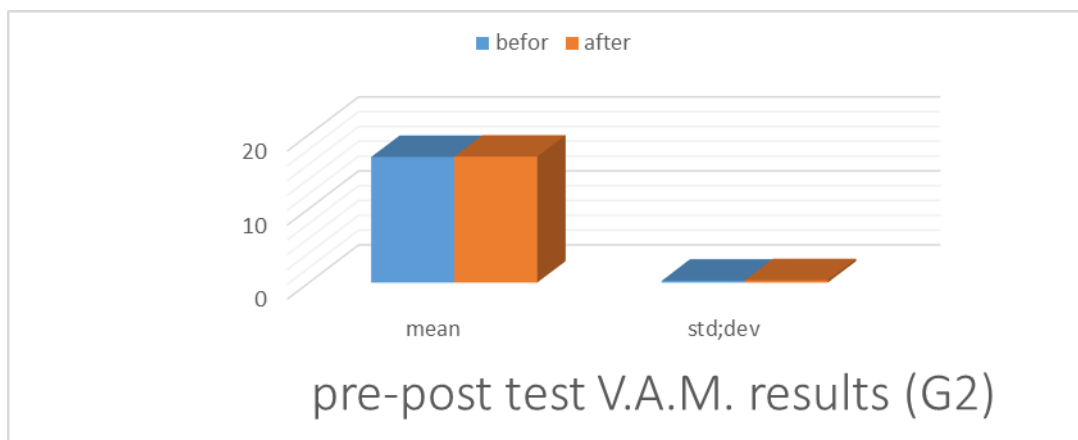


Table (4) presents a comparison of the pre- and post-test results for the maximum aerobic velocity test in the second group (does not play regularly). The pre-test had an arithmetic mean of 16.97 and a standard deviation of 0.26, while the post-test had an arithmetic mean of 17.02 and a standard deviation of 0.32. The calculated "t" value was 0.83 at a significance level of 0.05 and 9 degrees of

freedom. This value is lower than the tabular value of "T," which is estimated at 2.26, indicating no statistical difference between the pre- and post-test.

Furthermore, the Ttest table showed a significance level (Sig 2tailed) of 0.42, which is higher than the significance level of 0.05, leading to the acceptance of the null hypothesis. This hypothesis states that there are no statistically significant differences between the intensity of sports competition and the development of endurance.

Based on the results of Table (4), we can conclude that the second group of players did not show significant improvements in endurance over time. This could be attributed to their limited ability to participate regularly in matches and competitions. Therefore, the findings highlight the importance of consistent sports participation in developing and maintaining physical endurance.

C. Before the start of the competition:

Test	Group1		Group2		T cal	T tab	Sig(2tailed)	St sig
	Mean	Std.devi	Mean	Std.devi				
20m.Shuttle Run	17,08	0,22	17,01	0,31	1,00	2,10	0,32	N.Sig

Table (5): Comparison of the results of the maximum air velocity before the start of the competition for the first and the second group.

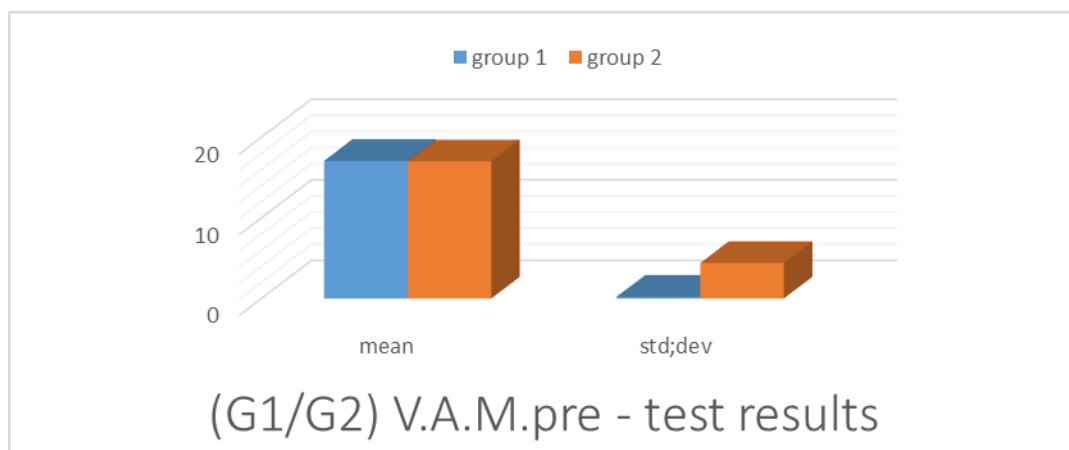


Table (5) compares the results of the maximum aerobic velocity test before the start of the sports competition for both groups under study. The first group, which plays regularly, achieved a mean of 17.08 and a standard deviation of 0.22, while the second group, which does not play regularly, achieved a mean of 17.01 and a standard deviation of 0.31, The calculated "t" value was 1.00 at a significance level of 0.05 and 18 degrees of freedom, which is less than the tabular "T" value of 2.10.

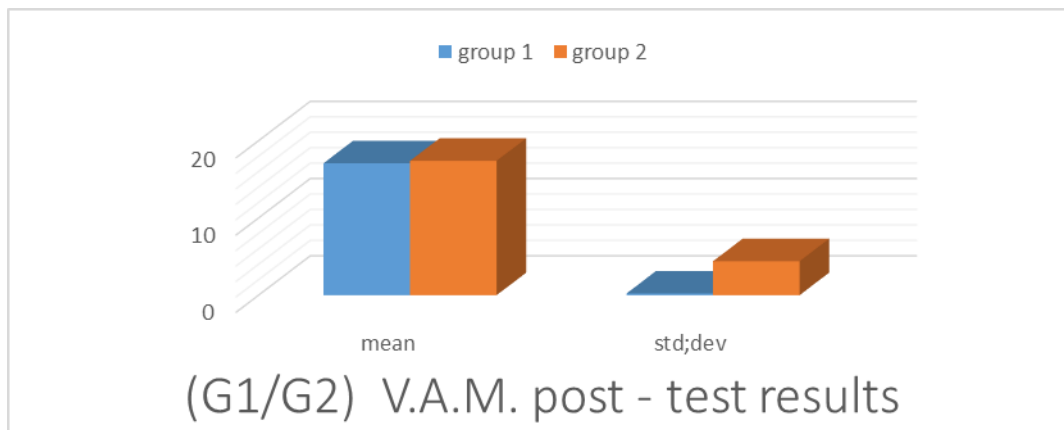
Also, through the T test table, we note that the value of the significance level (sig 2tailed) is estimated at 0.32, which is greater than the value of the significance level of 0.05, which makes us accept the null hypothesis, which states that there are no statistically significant differences between the results of the maximum air velocity test for the first group. And the second group before the start of competitions.

So based on our analysis of the results, we can conclude that there was no significant difference in the maximum aerobic velocity test of both groups before the start of the sports competition phase. This finding highlights the importance of examining the impact of regular and consistent participation in sports competitions on the development of endurance. Further analysis is necessary to determine how regular participation affects the development of endurance in players.

D. At the end of the first leg:

Test	Group 1		Group 2		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
20m.Shuttle Run	17,08	0,22	17,40	0,23	3,10	2,10	0,04	Sig

Table (6): Comparison of the results of the maximum air velocity before the end of the first leg for the first and the second group.



Based on the information provided, the analysis appears to be valid. The comparison of means and standard deviations in Table (6) suggests that the first group, who regularly engage in competition, has a lower mean maximum aerobic velocity than the second group, who do not engage in competition regularly. However, a two-sample t-test was conducted to determine if this difference is statistically significant.

The calculated "t" value of 3.10 is greater than the tabular "t" value of 2.10, indicating that there is a statistically significant difference between the means of the two groups in terms of maximum aerobic velocity. Additionally, the significance level (Sig 2tailed) of 0.04, which is less than the value of the significance level of 0.05, supports this conclusion.

Therefore, it can be concluded that regular participation in sports and physical activity has a positive impact on an individual's maximum aerobic speed, and that there are statistically significant differences between the first group and the second group at the end of the stage of going to the sports competition.

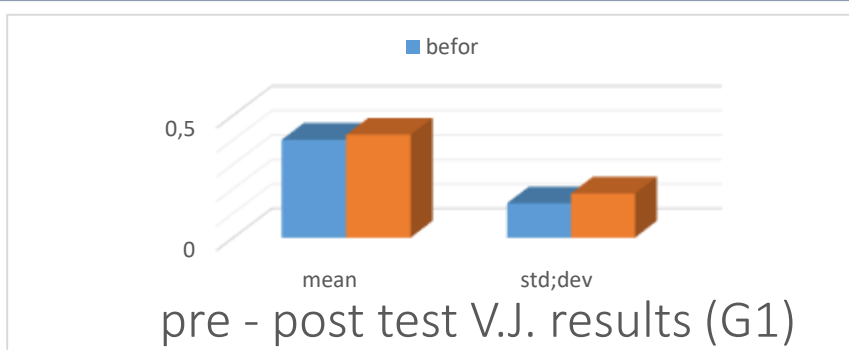
So through our reading of the results of Table (6), we can conclude that the endurance of the players of the first group, who played most of the first-leg matches, improved compared to the players of the second group, whose participation in the matches was irregular. This improvement is directly due to the size and intensity of these Participation in competitions, which makes us say that the intensity of matches and our follow-up during a significant period of time was a direct cause of improving the endurance of the football players under study.

10- Presentation and analysis of explosive power test results (vertical jump test):

A-The first group (play regularly):

Test	Befor		After		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
Vertical Jump	0,40	0,14	0,42	0,18	3,10	2,26	0,05	Sig

Table (7): Comparison of the vertical jump results before the start of the competition and after the end of the first leg for the first group.



Based on the comparison table of pre and post-test results for the first group (who play regularly) in the vertical jump test, it can be observed that the mean in the pre-test was 0.40 with a standard deviation of 0.14, while the mean in the post-test was 0.42 with a standard deviation of 0.18, The calculated "t" value was 3.10 at a significance level of 0.05 with 9 degrees of freedom, which is greater than the tabular "t" value of 2.26. This indicates that there is a statistically significant difference between the pre-test and post-test.

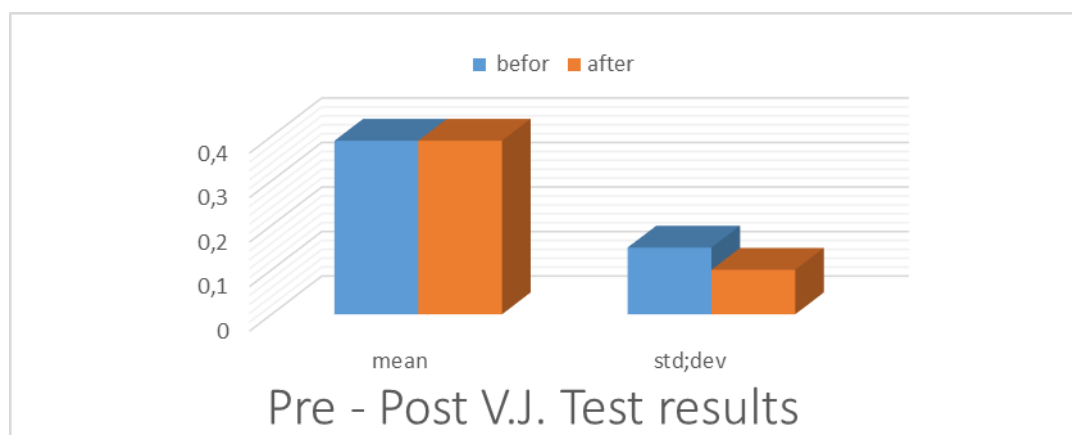
- Also, through the table, we notice that the value of the significance level (Sig 2tailed) is estimated at 0.05, which is equal to the value of the significance level of 0.05, which makes us accept the alternative hypothesis, which states that there are statistically significant differences between the regular participation of sports competition and the development of explosive power.

Through our discussion of the results of table (7), we conclude that there are differences in the vertical jump test from stability between pre and post test, through the improvement of the results recorded at the end of the first leg of the competition compared to the results recorded before the start of the competition, and this indicates that the regular participation of this group in the matches successively contributed to improving their explosive power.

B- The second group (do not play regularly):

Test	Befor		After		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
Vertical Jump	0,39	0,15	0,39	0,10	1,06	2,26	0,31	N.Sig

Table (8): Comparison of the vertical jump results before the start of the competition and after the end of the first leg for the second group.



Through the table it is shown that:

- In the pre-test, it achieved an arithmetic mean of 0.39 and a standard deviation of 0.15, while in the post-test the arithmetic mean was estimated at 0.39 and a standard deviation of 0.10, and the calculated "t" value was estimated at 1.06 at a significance level of 0.05 and The degree of freedom

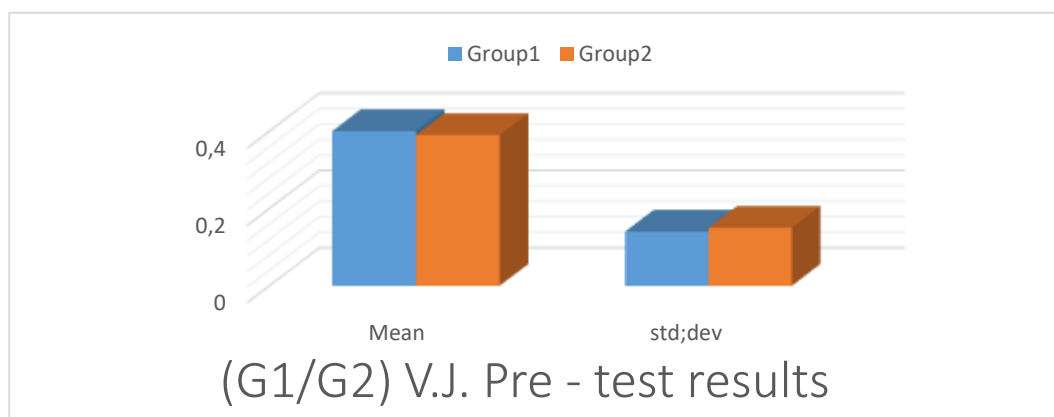
is 9, which is less than the tabular "T" value, which is estimated at: 2.26, and this indicates that there is no statistical difference between the pre and post test, also, we notice that the value of the significance level (Sig 2tailed) is estimated at 0.31, which is greater than the value of the significance level of 0.05, which makes us accept the null hypothesis, which states that there are no statistically significant differences between the pre-test and the post-test for the second group.

We conclude through our analysis of Table (8) and the T-test table that there are no differences and differences in the results of the pre-test and the post-test of the results of the vertical jump from stability; which represents players who are less involved and who do not play regularly, this indicates that their lack of regular participation in matches led to a lack of improvement in their explosive power as required.

C. Before the start of the competition:

Test	Group1		Group2		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
Vertical Jump	0,40	0,14	0,39	0,15	1,01	2,10	0,32	N.Sig

Table (9): Comparison of the results of the vertical jump before the start of the competition for the first and the second group.



From the table it is shown that:

- The first group (playing regularly) achieved in the pre-test an arithmetic mean of 0.40 and a standard deviation of 0.14.
- The second group (not playing regularly) achieved in the pre-test an arithmetic mean of 0.39 and a standard deviation of 0.15.

And, the calculated value of the "t" value estimated at 1.02 at the significance level 0.05 and the degree of freedom 18 is less than the tabular "t" value, which is estimated at 2.10, and this indicates that there is no statistical significance. Between the pre and post test.

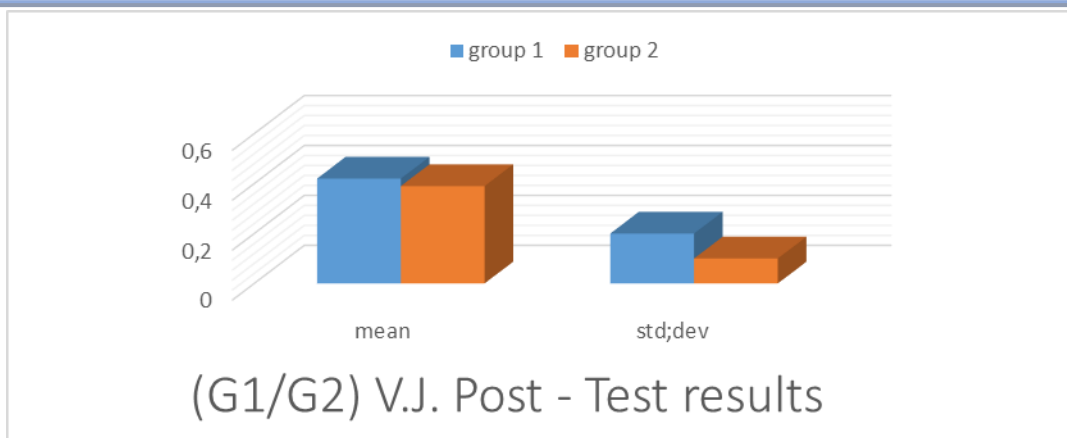
- Also, through the table, we note that the value of the significance level (Sig 2tailed) is estimated at 0.32, which is greater than the value of the significance level of 0.05, which makes us accept the null hypothesis, which states that there are no statistically significant differences between the results of the first and second groups.

So we conclude through our analysis of Table (9) that there are no differences in the pre-test results for explosive power between the first group (regular players) and the second group (non-regular players). This indicates that both groups had similar levels of explosive power gains before the start of the competition.

D. At the end of the first leg of competition:

Test	Group1		Group2		T cal	T tab	Sig(2tailed)	Stat sig
	Mean	Std.devi	Mean	Std.devi				
Vertical Jump	0,42	0,20	0,39	0,10	4,22	2,10	0,01	Sig

Table (10): Comparison of the results of the vertical jump at the end of first leg of competition For the first and the second group.



Through Table (10), we show that:

In the post-test, the first group who played regularly had an arithmetic mean of 0.42 and a standard deviation of 0.20, while the second group who did not play continuously had an arithmetic mean of 0.39 and a standard deviation of 0.10. The calculated "t" value was 4.22 at a significance level of 0.05 and 18 degrees of freedom, which is greater than the tabular "t" value of 2.10. This indicates a statistically significant difference in favor of the first group. The table also shows a significance level (Sig 2tailed) of 0.01, which is less than 0.05, leading us to accept the alternative hypothesis that there are statistically significant differences between the two groups.

Therefore, based on our analysis of Table (10), we can conclude that there are differences in the results of the vertical jump test between the two groups after the first leg. The improvement in the first group can be attributed to their regular participation in competition, which led to an improvement in their explosive power compared to the second group, whose players participated in a limited number of matches during the first leg, compared to the second group, whose players only participated in a very limited number of matches during the entire first leg of season.

III- Results and discussion :

Partial Hypotheses Discussion:

The first hypothesis:

Assumed the existence of a statistical relationship between the regular participation in sports competition and the development of endurance. The results of the study supported this hypothesis, as there were statistically significant differences in endurance between the first group of players who play regularly and the second group that do not play regularly, with the first group showing better results. This is evident from the results presented in Tables 3, 4, 5 and 6.

Table 5 shows that there were no statistically significant differences between the two groups in the pre-test. This is likely because the training program followed during the preparatory stage was the same for all team players, leading to similar results in the pre-test for most players in both groups.

Table 3 shows statistically significant differences between the pre-test and post-test results for the first group, indicating an improvement in endurance. This improvement can be attributed to the nature of the training sessions completed during the competition phase, which aimed to preserve the gains achieved during the preparatory phase, as well as the regular participation in sports competition itself.

So, through the above, we can confirm the validity of the first hypothesis, which states that there is a correlation between regular participation in sports competition and the development of aerobic endurance among football players.

This result is consistent with findings from other scientific articles and doctoral theses:

A study published in The Journal of Sports Creativity Magazine. The study concluded that there is evolution in fitness variables (aerobic endurance) during the first leg of competition on soccer players. (الرحمن و غضبان، 2020)

Another study published in the Journal of Strength and Conditioning Research in 2010 investigated the effects of regular soccer or swimming exercise on anthropometric and physiological measurements in adolescent boys. The study found that regular participation in soccer matches improved aerobic endurance in male players compared to those who did not participate in regular matches. (Gratas, et al., 2010)

Another study published in the International Journal of Sports Medicine in 2012 investigated the effects of a handball match on repeated sprint ability and peak power output. The study found that regular participation in handball matches improved aerobic endurance and maximal oxygen uptake in female players. (Gorostiaga, Granados, & Ibanez-Asenjo, 2012)

Taken together, these studies provide strong evidence that regular participation in sports competitions can improve aerobic endurance among players, and this finding is consistent across different sports and age groups.

The second hypothesis:

Assumed the existence of a statistical relationship between the regular participation in sports competition and the development of explosive power. The results of the study supported this hypothesis, as there were statistically significant differences in explosive power between the first group of players who play regularly and the second group that do not play regularly, with the first group showing better results. This is evident from the results presented in Tables 7, 8, 9 and 10.

Table 9 shows that there were no statistically significant differences between the two groups in the pre-test. This is because the training program followed during the preparatory stage was the same for all team players, leading to similar results in the pre-test for most players in both groups.

Table 7 shows statistically significant differences between the pre-test and post-test results for the first group, indicating an improvement in endurance. This improvement can be attributed to the nature of the training sessions completed during the competition phase, which aimed to preserve the gains achieved during the preparatory phase, as well as the regular participation in sports competition itself.

So, through the above, we can confirm the validity of the first hypothesis, which states that there is a correlation between regular participation in sports competition and the development of endurance among football players.

This result is consistent with findings from other scientific articles and doctoral theses:

- A study of Arafa Mohamed published in the Journal of Sports Sciences in 2017, this study investigated changes in physical performance parameters, including explosive power, in male amateur football players after a competitive period of matches. The results showed significant improvements in explosive power as well as other physical performance parameters. (Mohamed, 2017, p. 10)

- Another study published in the Journal of Sports Science and Medicine in 2013. This study assessed changes in physical fitness, including explosive power, in elite young soccer players over the course of a soccer season. The results showed significant improvements in explosive power and other physical fitness parameters. (Mohamed Ali Hammami & al, 2013, p. 5)

A study published in the Journal Maaref in 2022. This study investigated Variations in physical fitness performance during the sport season in high competitive level males volleyball players, including explosive power, in elite women's soccer players over the course of successive days of competition. The results showed that explosive power significantly decreased after the first day of competition, but then significantly increased over the following days, suggesting an adaptation to the demands of competition. (KEBAILI & Zohra TAOUTAOU, 2022, p. 13)

Taken together, these studies provide strong evidence that regular participation in sports competitions can improve explosive power among players, and this finding is consistent across different sports and age groups.

General Hypothesis Discussion:

Through the above and the results of the partial hypotheses, we can confirm that the general hypothesis has been achieved, and regular participation in sports competition is related positively to the development of certain physical characteristics among football players.

IV- Conclusion:

In summary, this article has provided valuable insights into the importance of sports competitions. Through a field study conducted on a small sample of football players in Algeria, we were able to clarify some of the mysteries surrounding the role of sports competitions beyond simply determining the value of teams and players.

Our findings suggest that sports competitions are also an effective means of demonstrating the effectiveness of training programs, as well as a tool for developing the capabilities of individual

players. By participating in sports competitions, players can improve various fundamental physical characteristics such as endurance, as well as more complex abilities such as explosive strength.

We have confirmed the validity of the commonly held belief among coaches and players that "the best type of training is competition". As such, we recommend that students and researchers conduct similar scientific research on different age groups and championships at all levels to gain a broader understanding of the benefits of sports competitions.

Furthermore, we recommend that athletes recognize the importance of regular participation in sports competitions to improve and develop their physical abilities. Coaches should include mini-games and applied matches as part of their training units to ensure that players develop both physical and technical skills.

It is also important to provide alternative competitions for reserve players to help them reach the same level as their main colleagues. We hope these recommendations will contribute to a greater appreciation of the benefits of sports competitions and lead to more effective training programs for athletes.

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- Appendices:

Table (10): Results of 20m Shuttle Run Test

Player	First group (play regularly)		Second group (do not play)	
	Pre-test(km/h)	Post-test(km/h)	Pre-test(km/h)	Post-test(km/h)
1	17,1	17,8	17,3	17,2
2	17,5	17,6	17	16,9
3	17,2	17,1	17,2	17,2
4	17,3	17,6	17,5	17,6
5	17	17,5	16,5	16,4
6	16,9	17,2	16,7	16,9
7	16,8	17	16,9	17
8	16,8	17	17,1	17
9	17,2	17,3	16,9	17
10	17	17,2	17,1	17,2

Table (11): Results of jump vertical test

Player	First group (play regularly)		Second group (do not play)	
	Pre-test(m)	Post-test(m)	Pre-test(m)	Post-test(m)
1	0,38	0,40	0,40	0,38
2	0,4	0,41	0,38	0,39
3	0,39	0,41	0,39	0,38
4	0,41	0,41	0,37	0,39
5	0,42	0,41	0,40	0,38
6	0,41	0,44	0,41	0,41
7	0,40	0,45	0,38	0,39
8	0,40	0,43	0,42	0,38
9	0,39	0,43	0,41	0,40
10	0,43	0,45	0,40	0,40