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The Relationship Between Higher-Order Mental Processes and Psychological Endurance Among Players of Some Football Clubs in the Wilaya of Djelfa

علاقة العمليات العقلية العليا بالتحمل النفسي لدى لاعبي بعض اندية كرة القدم لولاية الجلفة

Henni DEHLI[1]*, Brahim KADRAOUI[2], Soufiane MAHI[3]

[1] University of Chlef, Laboratory of Creativity and Motor Performance, Institute of Physical Education and Sports, Hassiba Ben Bouali University of Chlef, Chlef, Algeria. Email: d.henni@univ-chlef.dz

[2] University of Setif 2, Laboratory of Physical and Sports Activities Sciences and Public Health. Email: b.kadraoui@univ-setif2.dz

[3] University of Chlef, Laboratory of Creativity and Motor Performance, Institute of Physical Education and Sports, Hassiba Ben Bouali University of Chlef, Chlef, Algeria. Email: s.mahi@univ-chlef.dz

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Abstract

This study aimed to determine the relationship between higher-order cognitive processes and psychological endurance among players from some clubs in the Wilaya of Djelfa. The researchers used a descriptive survey methodology, deemed suitable for the nature of the research. The sample was randomly selected from senior football clubs in the Wilaya of Djelfa for the 2022-2023 season, comprising 64 players. Two scales were used: the Higher-Order Cognitive Processes Scale developed by Stefan Bull, John Albinson, and Christopher Shambrook (1996), and the Psychological Endurance Scale developed by Kamel Aboud Hussein (2004).

The results concluded that there is a statistically significant relationship between higher-order cognitive processes and psychological endurance among players from some clubs in the Wilaya of Djelfa.

الكلمات المفتاحية:

العمليات العقلية العليا

التحمل النفسي

لاعبي كرة القدم.

ملخص

هدفت الدراسة إلى معرفة العلاقة بين العمليات العقلية العليا التحمل النفسي لاعبي بعض اندية ولاية الجلفة استخدم الباحثون المنهج الوصفي للدراسة المسحية لملائمتها مع طبيعة البحث ، اما عينة البحث فقد تم اختيارها بطريقة عشوائية من نوادي ولاية لجلفة لكرة القدم (صنف اكابر) للموسم الرياضي(2022-2023)، قدر عددهم بـ(64) لاعبا، تم استخدام مقياسين: مقياس العمليات العقلية العليا الذي صممه كل من ستيفان بل bull وجون الينسون Albinson وكريستوفر شامبروك (1996) shambrook، ومقياس التحمل النفسي لكامل عبود حسين (2004).

وخلصت النتائج إلى وجود علاقة ذات دلالة إحصائية بين العمليات العقلية العليا والتحمل النفسي لدى لاعبي بعض اندية ولاية الجلفة.

* Corresponding author at: University of Setif 2, Algeria.
Email : b.kadraoui@univ-setif2.dz

1. Introduction

The progress achieved in football did not emerge from nothing; rather, it came as a result of the development that has taken place in the training process. Psychological preparation has become an integral part of physical, technical, and tactical preparation, and it plays an important role in modern training. A decline in a player's mental and psychological state causes performance to fall below its actual level. Mental and psychological training is one of the modern means used to activate the training process, and it has become one of the strategies of sports-training technology for developing good technical and tactical performance. Recent studies have shown that players who employ mental processes and psychological preparation perform their skills better than players who do not (Rashed Al-Masri, 2014).

The importance of paying attention to mental processes and the skills they include - such as imagery ability, mental preparation, self-confidence, coping with anxiety, and other mental skills - as well as the nature of their relationship with psychological endurance, has not received sufficient attention from researchers and scholars. Accordingly, the problem of the present research was defined as studying the relationship between higher-order mental processes and psychological endurance among players of some clubs in the Wilaya of Djelfa through the following question:

Is there a statistically significant relationship between higher-order mental processes and psychological endurance among players of some clubs in the Wilaya of Djelfa?

2. Research Hypothesis

-There is a statistically significant relationship between higher-order mental processes and psychological endurance among players of some clubs in the Wilaya of Djelfa.

3. Objectives of the Study

-To highlight the level of psychological endurance among players of some football clubs in the Wilaya of Djelfa.

- To study the relationship between higher-order mental processes and psychological endurance among players of some clubs in the Wilaya of Djelfa.

4. Previous and Relevant Research

4.1 A research conducted by Assad Ali Suaih in 2014

Researchers at the University of Al-Qadisiyah looked at how different mental and personality traits are related in sports coaches. During the school year 2011–2012, the researcher used a descriptive survey method and a purposive sample of 25 coaches. The Higher Mental Processes Scale, developed by Stephan Bull, John Albinson, and Christopher Shambrook in 1996, was the initial of two primary instruments employed. Later, Mohamed Hassan Allawi translated it into Arabic. This scale has 124 items that are split into six groups: imagery ability, attentional focus, self-confidence, relaxation ability, anxiety coping, and the drive to do well in sports. The Dominant Personality Traits Scale was the second tool. It is based on a shorter version of the Giessen Test from Germany. There are 56 items, and they are spread out over eight areas: calmness, irritability, sociability, nervousness, aggressiveness, depression, dominance, and competence. The study found that some personality traits are related to the levels of mental skills in the group of coaches.

5.2 Study by Marwa Mahmoud Mohamed Ammar and Iman Mohamed Abbas Ahmed (2021)

The goal of this study was to figure out how psychological endurance, emotional regulation, and academic stress are related to each other among graduate students at Alexandria University's Faculty of Education. There were 121 male and female students in the main sample, all between the ages of 22 and 34. There were 12 men and 109 women who were taking professional diploma programs, special diplomas, master's degrees, and doctoral degrees. The researchers made three tools themselves: the Psychological Endurance Scale, the Emotional Regulation Scale, and the Academic Stress Scale. The results showed that there was a statistically significant link between the three variables. Moreover, women exhibited greater psychological resilience than men, with no significant variations attributed to marital or employment status. The study also found that

psychological endurance varied based on academic degree. Emotional regulation and academic stress were two important factors in predicting psychological endurance among the people in the sample .

5.3 The study by Saadoun Chouaib (2022)

This study looked at how mental training can help football players stay mentally strong. The researcher employed a descriptive methodology, encompassing 80 players from four clubs in the Algerian first professional football league. A pilot group of 15 players tested the measurement tools to see how accurate and reliable they were. The main study had 65 players in it. The researcher used the Statistical Package for the Social Sciences (SPSS) to figure out the mean, standard deviation, and Pearson's correlation coefficients. The study revealed several significant findings, with the most notable being a statistically significant correlation between overall mental training and psychological endurance. Also, there were statistically significant links found between relaxation, attention, and mental imagery and psychological endurance in football players.

4. Research Procedures

4.1 Research Method

The researchers used the descriptive method through both the survey approach and correlational relationships.

4.2 Population and Research Sample

On this basis, the study population consisted of players from some football clubs in the Wilaya of Djelfa, senior category, during the 2022/2023 sports season. The research sample included 87 senior players. Sixteen players were excluded because they participated in the pilot study, four players were excluded for not completing the tests, one player was excluded for lack of discipline (absence from the test), and two players were excluded because of injury. Thus, the final main sample consisted of only 64 players.

The research sample was selected randomly from players of some football clubs in the Wilaya of Djelfa, senior category.

Table 1

shows the distribution of the study sample.

Population / Sample Category	Count	Percentage
Original population	720	100%
Research sample	87	12.08%
Main sample	64	8.88%
Excluded sample - pilot sample	16	2.222%
Excluded sample - lack of discipline	1	0.138
Excluded sample - injury	02	0.277
Excluded sample - incomplete tests	04	0.555%

4.3 Research Variables

To identify and select the research variables, it was first necessary to control the theoretical approach to the topic related to clarifying the relationship between higher-order mental processes and psychological endurance among players of some football clubs in the Wilaya of Djelfa. This made it possible to define the variables of the study precisely as follows:

Independent variable:

Higher-order mental processes were considered the independent variable of this study.

Dependent variable:

Psychological endurance was identified as the dependent variable.

4.4 Research Fields

- Human field: players of some football clubs in the Wilaya of Djelfa, senior category.

- Spatial field: municipal and neighborhood stadiums of clubs in the Wilaya of Djelfa.

- Temporal field: the period devoted to conducting this research extended from 11/09/2022 to 20/12/2023.

4.5 Data Collection Tools

The research tool is the only means through which researchers can solve the problem. In this study, two scales were used:

Higher-Order Mental Processes Scale:

The Mental Skills Questionnaire, designed by Stefan Bull, John Albinson, and Christopher Shambrook in 1996, aims to measure some important psychological aspects of sports performance. This scale includes six dimensions, including imagery ability, attentional focus, self-confidence, relaxation ability, and the ability to cope with anxiety. It contains 24 items, with each of the six dimensions represented by four explanatory statements. The instrument is answered on a six-point scale prepared and adapted by Muhammad Hassan Allawi. Scoring is carried out by assigning weights to positive responses (6, 5, 4, 3, 2, 1), and the scores of each dimension are calculated separately. The closer the score is to the maximum score (24) for each dimension, the more it indicates distinction in the characteristic measured by that dimension. Low scores indicate a need for more training in the mental skill being measured (Asaad Ali Sufaih, 2014, p. 112). Appendix 01.

Psychological Endurance Scale:

The researcher used the psychological endurance scale employed by Bahaa Mati Raphael Marcus and modified it for the sports field. It was presented to a group of experts and specialists to verify its suitability. The items were formulated as verbal situations, and three alternatives were provided for each situation. The first alternative measures a high level of endurance, the second a moderate level, and the third indicates a very weak capacity for endurance. Scores of 1, 2, and 3 were assigned respectively (Haider Naji Habash, 2010, p. 54). Appendix 02.

4.6 Psychometric Properties of the Research Tool

The validity and suitability of the two scales were verified by determining the psychometric properties of the research tool (validity, reliability, and objectivity). The first administration was applied on 20/08/2012, and it was re-administered 14 days after the first measurement, on 04/09/2012, to 16 players who were not included in the basic research sample. The researchers calculated the simple correlation coefficient between the scores of the two administrations, and the results of the correlation coefficient were as follows:

Table 2

presents the reliability coefficients of the physical tests:

Tests	R Value	Reliability Coefficient	Intrinsic Validity
Higher-order mental processes scale	0.68	0.82	0.90
Psychological endurance scale	0.71	0.84	0.91

4.7 Statistical Methods

SPSS package, version 26, was used.

5.Results and discussion

5.1 Presentation of the Results of the Research Hypothesis

Table 03

shows the arithmetic mean, standard deviation, and correlation coefficient (R) for the research results.

Scale	Higher-order mental processes scale	Psychological endurance scale
Arithmetic Mean	33.27	37.08
Standard Deviation	3.68	4.32
Correlation Coefficient (R)	0.67	0.67
Significance	Significant*	Significant*

* The calculated correlation coefficient is greater than the tabulated value (0.25) at 62 degrees of freedom and a significance level of 0.05.

5.2 Discussion and Conclusion

Based on the results shown in the previous table, the calculated correlation coefficient was greater than the tabulated value of 0.25 at 62 degrees of freedom and a significance level of 0.05. This indicates the existence of a statistically significant relationship between higher-order mental processes and psychological endurance among players of some clubs in the Wilaya of Djelfa.

The researchers attribute these results to the fact that the players in the research sample enjoyed a high level of psychological endurance, which was reflected in their mental skills. A player with high psychological endurance can control his mental skills in stressful situations, thereby reducing the degree to which he is exposed to pressure.

This is consistent with the study of Saadoun and Chouaib (2022, p. 5), which found a statistically significant correlational relationship between mental training and psychological endurance among football players; a statistically significant relationship between relaxation and psychological endurance among football players; a statistically significant relationship between attention and psychological endurance among football players; and a statistically significant relationship between mental imagery and psychological endurance among football players. The study of Marwa Mahmoud Mohamed Ammar and Iman Mohamed Abbas Ahmed (2021) also reached several results, including the existence of a statistically significant relationship between psychological endurance strength, emotional regulation, and academic stress among the study sample.

The results of the study by Asaad Ali Sufaih (2014) also indicated a positive relationship between higher-order mental processes and prevailing personality traits, except for the skill of imagery ability and the ability to concentrate and pay attention, where the results revealed a negative relationship between these two skills.

General Conclusion

Based on the findings of the present study, and within the limits defined by the sample of players from selected clubs in the Wilaya of Djelfa, the following conclusions can be drawn:

Mental processes, particularly higher-order cognitive functions such as attention, memory, perception, decision-making, and problem-solving, constitute a fundamental psychological determinant in the acquisition and refinement of motor skills. These processes not only facilitate the learning of technical and tactical elements during training sessions but also play a decisive role in the application of game plans and real-time decision-making under competitive pressure. Unlike purely physiological or biomechanical factors, higher-order mental processes distinguish human performance by enabling anticipation, strategic adaptation, and emotional regulation in dynamic sporting environments.

In light of the statistical analysis and the discussion of the hypothesis, the results revealed a statistically significant positive relationship between higher-order mental processes and psychological endurance among the athletes studied. This finding indicates that players who demonstrate stronger cognitive functioning—such as effective attentional control, rapid information processing, and strategic thinking—also exhibit higher levels of psychological endurance, characterized by the ability to persist in goal-directed behavior despite fatigue, stress, or adversity.

This relationship underscores the integrative nature of sports performance, where cognitive resilience and emotional stamina are not isolated traits but rather interconnected components of athletic expertise. Consequently, it is recommended that training programs in team and individual sports incorporate cognitive stimulation exercises alongside physical and technical drills, with the aim of enhancing both mental processing efficiency and psychological endurance simultaneously.

In conclusion, the study affirms that higher-order mental processes are not merely auxiliary to physical performance but are central to the development of psychological endurance. For athletes and coaches

in the Wilaya of Djelfa—and by extension, in similar competitive contexts—fostering cognitive skills may serve as a pathway to improving sustained performance under pressure, reducing error rates in critical match situations, and promoting long-term athletic development.

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Annex 1

Higher Mental Skills Scale

Dear Player,

The researchers are conducting a study on the topic: 'The relationship between higher-order mental processes and psychological endurance among players of some football clubs in the Wilaya of Djelfa.' Please read each statement very carefully and circle the number that appears to the left of the statement and indicates the extent to which the statement applies to your situation. Number (1) indicates that the statement does not apply to you at all. Number (2) indicates that the statement applies to you to a very small degree. Number (3) indicates a small degree. Number (4) indicates a moderate degree. Number (5) indicates a high degree. Number (6) indicates that the statement applies to you to a very high degree. Please do not leave any question unanswered

No.	Statement	1	2	3	4	5	6
1	I can imagine any motor skill in my mind.						
2	I know well how to relax at critical moments during a match.						
3	Many thoughts run through my mind while participating in a match and interfere with my concentration.						
4	I often feel that I may be defeated in the competition in which I participate.						
5	I participate in all competitions with thoughts full of self-confidence.						
6	Before participating in a competition, I am psychologically prepared to exert maximum effort.						
7	I can mentally picture players performing movements without actually carrying them out.						
8	My muscles are tense before I participate in competition.						
9	I am bothered by my inability to focus my attention at critical moments of the match.						
10	I fear not performing well in directing players during the match.						

11	When the match result is not in my favor, my self-confidence decreases as the match approaches its end.						
12	I always prefer participating in sensitive and important matches.						
13	It is difficult for me to imagine in my mind what I will do during the match.						
14	It is easy for me to relax my muscles before participating in competition.						
15	My problem is that I lose the ability to concentrate at certain moments of the match.						
16	When I participate in a competition, I feel more anxiety.						
17	Throughout the competition, I can maintain a high level of self-confidence.						
18	I can always arouse my enthusiasm by myself during the match.						
19	I always engage in mental imagery of the performance I will execute in the competition in which I will participate.						
20	One of my clear traits is my ability to calm and relax myself quickly before participating in a sports competition.						
21	Events and noise outside the field contribute to distracting my attention during play.						
22	I feel upset when I commit some mistakes during competition.						
23	I suffer from a lack of confidence in controlling the course of the competition.						
24	I always feel that I exert maximum effort throughout the entire competition.						

Annex 2

Psychological Endurance Scale

No.	Situation	Alternative 1	Alternative 2	Alternative 3
1	If your family refuses your choice of the type of sport you love and want to practice, you:	Think about the reasons for their refusal.	Calmly persuade them of your choice.	Show anger toward them.
2	If you and a group of your friends decide to play a recreational game and you are very enthusiastic about it, but they postpone the game, you:	Accept the situation calmly.	Feel annoyed.	Become angry with them.

3	If you are watching an important match and suddenly the television stops working because of a malfunction, you:	Try to engage in some hobby.	Feel bored.	Feel very upset and distressed.
4	When you are hungry and know that the end of training will be delayed, you:	Endure the hunger until the end of training.	Feel uncomfortable and show dissatisfaction.	Become upset and blame others for the delay.
5	If you want to contact someone and the coach prevents you, you:	Face the prohibition calmly and try to understand the reason.	Become upset without showing it to him.	Object and refuse his prohibition.
6	If you need to buy sportswear for an important match but your financial circumstances do not allow it, you:	Wait until your financial situation improves.	Feel distressed.	Become tense and react emotionally.
7	When you face officiating situations and are unable to solve them, you:	Continue thinking until you reach a solution.	Avoid the solution and the officiating situation.	Ask the coach how to solve it.
8	If you have an exam the next day and, when you want to review your notebooks, you discover that a family member has tampered with them, you:	Try to handle the matter calmly.	Feel annoyed by the situation.	Become furious and very angry.
9	If you are busy preparing a match plan assigned to you by the coach and someone interferes in your work, you:	Continue your work calmly and pay no attention.	Feel uncomfortable because of the interference.	Become angry and prevent the person from interfering.
10	If you are on your way to an important match and a speeding car splashes your clothes with dirty water, you:	Try to handle the situation calmly.	Mutter complaints to yourself.	Utter harsh words.
11	If you are training for an important and urgent match and there is nearby noise, you:	Continue training and pay no attention.	Continue despite feeling uncomfortable.	Become angry and leave training.

12	If you expect a reward for your excellence in sports performance and do not receive it for some reason, you:	Try to obtain it without emotional reaction.	Feel upset and try to find another way to obtain it.	Feel distressed and complain.
13	If you have an appointment with a friend for training and the friend is late, you:	Wait as long as possible.	Become annoyed and wait only a few minutes.	Become tense and emotional and do not wait at all.
14	If you lose a dear teammate, you:	Feel sad and accept the reality.	Suffer greatly within yourself.	React emotionally and collapse.
15	If you are attacked during play by the opposing team, you:	Try to face the situation calmly.	Feel afraid.	Become disturbed and panic.
16	If you feel severe stomach pain early in the match, you:	Try to tolerate the pain until the end of the match.	Become disturbed and call on others for help.	Ask to be taken to the hospital.

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