

Personality Traits and Emotional Arousal and their Relationship to the Orientation  
towards Athletic Excellence Dimensions among Basketball Athletes

أبعاد الشخصية والاستثارة الانفعالية وعلاقتها بالتوجه نحو أبعاد التفوق الرياضي عند رياضيي كرة  
السلة

<sup>1</sup>HARIZI Abdenour

<sup>1</sup> University of Djilali Bounaama, Khemis Miliana, Algeria . [a.harizi@univ-dbkm.dz](mailto:a.harizi@univ-dbkm.dz)

Received: 15/09/2019

Accepted: 23/10/2019

Published:05/12/2019

**Abstract:**

This study aims to investigate the correlations between Eysenck's personality traits (extraversion and emotional stability), emotional arousal and athletic excellence dimensions among Basketball Players at the National Sports High-School of DRARIA. These correlations were served as variables for GABNA. The study was conducted on a sample of student-athletes (15 female and 22 male high-school basketball players for the a. y. 2017/2018). A Descriptive Correlational approach was used. EPQS, CEAS, and AEDs psychometrics were examined by the use of SPSS software. The results indicate that there are no correlations between extraversion, emotional instability and athletic excellence dimensions on the one hand and emotional arousal and athletic excellence dimensions on the other hand. Most of the findings show that there are no statistically significant differences between the variables representing athletic excellence dimensions, among both female and male basketball players. Besides, there are only statistically significant differences between the variable representing respect for others in favour of males. Thus, the absence of a correlation between the variables mentioned is

attributed to a shortage in the number of samples tested.

**Keywords:** Personality Traits, Emotional Arousal and Athletic Excellence Dimensions

الملخص:

نهدف من خلال بحثنا هذا إلى دراسة العلاقة بين أبعاد الشخصية حسب " أيزنك " والمتمثلة في (الانبساطية، والاتزان الانفعالي) إضافة إلى الاستثارة الانفعالية وأبعاد التفوق الرياضي، ودراسة الفروق بين الجنسين لهذا الأخير، وتم اختيار عينة البحث بالطريقة القصدية والتي تمثل مجتمع البحث بتعداد (22) لاعبا و(15) لاعبة من رياضتي كرة السلة وهم تلاميذ ثانوية الرياضية الوطنية بدارية للسنة الدراسية (2017/2018)، منخرطين في النوادي المنتشرة في الجزائر العاصمة وضواحيها، واستخدم الباحث المنهج الوصفي الارتباطي، ولجمع البيانات استعملنا المقاييس النفسية كاختبار (أيزنك للشخصية EPQ ومقياس الاستثارة الانفعالية ومقياس أبعاد التفوق الرياضي)، وبعد استخراج البيانات ومعالجتها إحصائيا باستخدام برنامج (Spss) تم التوصل إلى عدم وجود علاقة ارتباطية بين بعد الانبساط والاتزان الانفعالي وأبعاد التفوق الرياضي، وبين الاستثارة الانفعالية وأبعاد التفوق الرياضي عند رياضتي كرة السلة. إضافة إلى عدم وجود فروق دالة إحصائية بين لاعبي ولاعبات كرة السلة في أبعاد التفوق الرياضي باستثناء بعد احترام الآخرين حيث أظهرت النتائج وجود فروق دالة إحصائية لصالح اللاعبين الذكور ويعزو الباحث سبب عدم وجود علاقة بين المتغيرات المذكورة لنقص عدد أفراد العينة.

- الكلمات المفتاحية: أبعاد الشخصية (الانبساطية، الاتزان الانفعالي) - الاستثارة الانفعالية - أبعاد التفوق الرياضي.

## INTRODUCTION TO THE STUDY

### 1- Introduction and problem statement:

Quite recently, considerable attention has been paid to psychology, which has become a science of significant interest to all nations, especially in the Western world where it developed rapidly and began to split into branches and disciplines, such as personality; the subject of particular importance in relation to the degree of difficulty and complexity (Mohammed Ayyash Kubaisi, 2010, P.

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11). Among the many topics discussed in literature, the theories confirm what both theorists Eysenck and Jung have agreed on, namely; the theory of categorising personality types into introvert and extrovert patterns or as Eysenck named 'Personality Dimensions'. To the author's knowledge, theories that try to explain human motivation have been scarcely investigated from the theoretical point of view. In Clark L. Hull and Kenneth Spence theory, the authors had stated that there is a positive correlation between arousal and performance, and had concluded that sporting excellence is undoubtedly the ultimate goal of each athlete or coach at any level. Based on the theories already mentioned, the purpose of this paper is to take advantage of the dimensions of human character in order to improve athletic performances. In connection with the latter, we refer, in our study; to the second variable, which is the emotional arousal in the athlete that represents the degree of inner vital organs physiological arousal that are controlled by the autonomic nervous system. Further, we want to shed light on these elements and investigated the correlations between personality traits and athletic excellence dimensions as well as the relationship between emotional arousal and athletic excellence dimensions among Basketball Players at the National Sports High-School of the region of DRARIA. From this point of view, personality traits, emotional arousal and athletic excellence dimensions were served as variables for Gender-Aware Knowledge-Based Analysis (GABNA). The discussion may therefore consider the following main question: Is there a correlation between personality traits (extraversion and emotional stability), emotional arousal and athletic excellence dimensions among Basketball Athletes?

Following this, the sub-questions were:

1. Is there a correlation between extraversion, emotional stability and athletic excellence dimensions among Basketball Athletes?
2. Is there a correlation between emotional arousal and athletic excellence dimensions among basketball athletes?
3. Are there statistically significant differences between sports excellence dimensions among basketball athletes attributed to gender variable?

**- Research hypotheses:**

Main hypothesis: there is a correlation between personality traits (extraversion and emotional stability), emotional arousal and athletic excellence dimensions (restraint, responsibility, and respect for others) among Basketball Players.

**- Sub- hypotheses:**

1. There is a correlation between extraversion, emotional stability and athletic excellence dimensions, which involves restraint, responsibility, and respect for others among Basketball Players.
2. There is a correlation between emotional arousal and athletic excellence dimensions, which involves restraint, responsibility, and respect for others among Basketball Players.
3. There are statistically significant differences between the variables representing athletic excellence dimensions in favour of male basketball athletes.

**- Research Objectives:** We seek through this study to determine the following:

- 1- Highlight the correlation between personality traits and athletic excellence dimensions.
- 2- Determine the relationship between emotional arousal phenomenon and athletic excellence dimensions.

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3- Shed the light on the subject to contribute on further researches from different aspects.

### - **Research Importance:**

1- Identifying the most important personality dimensions and theories that differed in classifying them socially, physically, neurologically, and psychologically.

2- Revealing the psychological aspect secrets that are related to athletic performance.

3- Providing a scientific reference related to the psychological aspects for use.

4- Detecting the factors affecting the variables under study.

5- Contributing towards increasing the ratios for predicting future success in athletes and developing champions by studying personal patterns and their relationship to personality traits or dimensions.

### **2- Research Terms and Definitions:**

1- **Personality:** defined in Eysenck (1970) as the most or least persistent organization of the individual's temperament, mind, and body that determines his/her distinctive compatibility with the environmental circumstances in which he/she lives (Abdulmutallab Amin al-Quraiti, 1998, p. 223).

\* **Procedural definition:** is a relatively consistent integrated organization of the individual's physical and mental traits. It also can be identified on the basis of the following key dimensions: extraversion vs. introversion, emotional stability vs. instability.

2- **Extraversion:** is the psychological orientation of individuals toward the outer world, which is the axis that regulates predominantly behavioural traits and activities.

**3- Emotional Stability:** is the axis that regulates the emotional activity orientation by controlling the intensity of emotions that match traumatic situations to suit the stimuli severity away from overreaction. It is characterized by some stability and freedom compared to emotional instability (Paulhan, and Quintard, p 1997).

**4- Emotional arousal:** the term arousal is used to indicate the physiological status, which represents the degree of body organs activity under the autonomic nervous system control. The term physiological activation, which defines behaviour, is also used to indicate the intensity that releases the potential energy stored in the activities of the organisms (Abdel Aziz Abdel Meguid Mohamed, 2005, pp. 89-90).

\* **Procedural definition:** we can say that emotional arousal is the amount of emotion or motivation necessary for the athlete to perform various athletic skills during training or competition.

**5- Athletic Excellence:** it is the personal best achievable performance that falls along the spectrum of sports specialization in comparison with other athletes' performances in the same (sports) field. (Zaki Mohammed Mohammed Hassan, 2006, p. 19).

\* **Procedural definition:** is the individual's athletic excellence in performing athletic movements and skills along with psychological and social skills and abilities compared to other athletes.

**6- Athletic Excellence Dimensions:**

\* **Trend towards self-restraint:** Athletes who have high scores are trended toward controlling their emotions during play and hiding their real nervousness in defeat.

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\* **Sense of Responsibility:** Athletes who have high scores are trended toward exerting effort in training and sports competitions, showing positive attitudes towards learning and sports responsibility, as well as accepting criticism.

\* **Attitude towards respect for others:** Athletes who have high scores are trended toward showing high positive attitudes, including with regard to respect for coaches, managers, trainers, team leaders, colleagues, competitors, referees and the audience (Mohammed Hassan Allawi, 1998, pp. 208-209).

### 3- Similar and Related Studies:

**3-1- Zeiad Barakat Study (2010):** study entitled 'Extraversion and Neuroticism and its Effect on Short and Long – Term Memory among Al-Quds Open University Students'. The study's purpose was to investigate the effect of the personality traits: Extroversion, introversion, instability (emotionality) and stability on short and long – term memory among Al-Quds Open University students. To achieve this, EPI was applied at a sample consisted of (200) students, and then the sample was divided into four equal groups of 25 male and 25 female for each group according to their scores on the above mentioned test: Extroverts, introverts, emotionality and stable students. After applying two tests for measuring the short and long – term memory, and by applying one - way analysis of variance, results revealed that extraverts and emotionally unstable students are better than introverts and stable students in short- term memory, whereas the introverts and stable students are better than extraverts and emotionally unstable students in long- term memory.

**3-2- Shaima Ali Khamis (2010):** study entitled 'Emotional Arousal and its Relation with Self-Experience among Some Volleyball Team Players'. The research community included volleyball players participating in the Mid-Euphrates Zone Championship for the 2009-2010 season. The research sample

consisted of (6) teams with a number of (78) players. The study aimed to measure the level of emotional arousal and self-experience as well as identify the type of relationship between both variables: emotional arousal and self-experience and thus the findings revealed that the sample is trended toward exerting higher emotional arousal and lower self-experience. There is an inverse correlation between self-experience and emotional arousal among the study sample members.

**3-3- Sawash Issa study (2013):** entitled 'Competitive Behaviour and Its Relation to the Orientation towards Athletic Excellence Dimensions among Physical Education and Sports Students'. The aim of the study was to determine the relationship between competitive behaviour and the orientation towards athletic excellence dimensions and set the level of competitive behaviour, as well as highlight the differences in the level of competitive behaviour; according to the sex variable and the type of sports (solo/or team sports) practiced. The study also aimed to measure the level of orientation towards athletic excellence dimensions, and highlight the differences in that level; according to the sex variable and the athletic specialization and thus the research uncover that the level of competitive behaviour was above average. There were statistically significant differences in the level of competitive behaviour in the variables indicating; sex in favour of males and type of sports in favour of team sports at the level of significance (0.05).

**- The practical chapter:**

**1- Research Field and Procedures:**

Exploratory Study: is considered the main pillar in the field aspect, it is an important stage in the research project, because of its relevance to the study field. According to Abdurrahman Issawi: 'The exploratory study is a scoping



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study that allows the researcher to obtain information about the subject matter and allows him to identify the conditions, the possibilities and the validity of the used methodological tools’.

After obtaining an important facility from the Institute's management, I visited the National Sports High-School of the region of DRARIA for the first time where I contacted the staff who had provided the necessary facilities to obtain the required information about the sample and its relevant characteristics. On the second visit, we distributed three study metrics to test the students’ ease of understanding and provide stable and true measurement tool. Following the 16<sup>th</sup> day of the exploratory experiment, the baseline study was conducted on a sample consisted of basketball athletes who studied at the NSH-School. Questionnaires containing the applicable metrics were retrieved and unloaded to obtain data.

- **Research methodology:** a Descriptive Correlational Method was used to suit the nature of the study.

- **Research Society and Samples:** the research society consisted of 37 Basketball Players at the National Sports High-School of the region of DRARIA. A sample of student-athletes (15 female and 22 male high-school basketball players for the academic year 2017/2018) was chosen deliberately.

- **Data Gathering Tools Psychometric Properties:**

\* **Eysenck Personality Questionnaire (EPQ-S):** assessed by Eysenck for the measurement of personality dimensions or traits (extraversion vs. introversion, emotional stability vs. instability) among adults (Badr Mohammed Al-Ansari, 2002, p. 710).

\* **Emotional Arousal Scale (EAS) Or Competition Behaviours’ List:** developed by DORTHY V. HARRIS and BETTE L. HARRIS. The image and codification in

Arabic prepared by Osama Kamil Rateb in 1991 (Osama Kamil Rateb, 2000, p. 305).

\* **Sport Excellence Scale (SES):** developed by Donald dell to measure the orientation towards sport and some dimensions related to athletic excellence and has been modified by Mohammad Hassan Allawi to suit the Egyptian environment (Mohammad Hassan Allawi, 1998, p S208-209).

- **Instrument Validity:** We relied on the arbitrators' sincerity. We present the metrics used to seven (07) professors specialized in psychology, theory and physical education and sports methodology to judge the test items' validity. We used also content validity by accounting and analysing similar and related studies.

- **Instrument Reliability:** We have adopted the Two-Dimensional Fractionation Technique in order to calculate the reliability coefficient of the three metrics applied in the study.

**Table 01 below shows the reliability coefficients of the three metrics used.**

Number	Metrics	Reliability Coefficient
01	Eysenck Personality Questionnaire (EPQ-S)	0.77
02	Emotional Arousal Scale / Competition Behaviours' List	0.93
03	Sport Excellence Scale (SES)	0.91

- **Statistical Techniques:** the techniques used were Arithmetic Averages, Standard Deviations, Torsion Coefficients- Kurtosis formula - Shapiro-Wilk test - Pearson Correlation Coefficient (simple and multiple types of correlation coefficients) - T Test (Student's T-Test to compare the means for two groups.) - Effect Size Measures (in simple and multiple types of correlation, in Eta).

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## 2- Results and Discussions:

- **Hypothesis 01:** There is a correlation between extraversion, emotional stability and athletic excellence dimensions among Basketball Players.

**Table 02 demonstrates the results of the correlation between the three variables (extraversion, emotional stability and athletic excellence dimensions).**

Statistical Techniques \ Variables		Number	Arithmetic Averages	multiple correlation coefficient	Significance value	Statistical Significance	Effect Size	Statistical Significance
Extraversion and Emotional Stability		14	/	/	/	∧	/	/
Athletic Excellence Dimensions	Self-Restraint		57.64	0.458	0.27	(-)	0.470	Large effect
	Responsibility		64.57	0.292	0.61	(-)	0.347	Large effect
	Respect for Others		62.85	0.224	0.75	(-)	0.276	Large effect
(-) : non-significant (*) : significant at the (0.05) N: 14 *small (0.01-0.05), *medium (0.06-0.13), and *large (>=0.14) effects								

As follows from the figure shown above, the correlation coefficients for the three athletic excellence dimensions reached values of (0.458, 0.292, and 0.224) at levels of significance (0.27, 0.61, and 0.75) respectively. These values were greater than the significance level (0.05). This means that there is no correlation between extraversion, emotional stability and athletic excellence dimensions. However, after calculating the effect size between the variables (0.470, 0.347, and 0.276). The results showed that they are all greater than (0.14) and thus there is a large significant effect between the three variables. The reason for the absence of a correlation between the variables mentioned is attributed to a shortage in the number of samples tested.

It's worth note that the results revealed above are incompatible with the available literature that have shown a relationship between the variables studied. Zeiad Barakat described the extrovert as a sociable person who socially confident or concerned with outer affairs unlike the introvert. He also cited that

emotionally stable student is a sober-minded self-restraint person who is considered as a successful leader in different areas that he needs to set goals in. (Zeiad Barakat, 2010, pp. 86-87).

It is certainly true that we can find an athletic characterized by the foregoing; someone with a sense of self-restraint, responsibility and respect for others. This is however consistent with the study conducted by Khawla Abdul Wahab al-Qaisi, which provided most of the qualities reported and often found in athletes, especially the high achieving, such as the sample who scored higher on the defining issues (Al-Hajj, 1986, pp. 79-77).

**Hypothesis 02:** There is a correlation between emotional arousal and athletic excellence dimensions among Basketball Players.

**Table 03 uncovers the results of the correlation between emotional arousal and athletic excellence dimensions.**

Statistical Techniques	Variables	Number	Arithmetic Averages	multiple correlation coefficient	Significance value	Statistical Significance	Effect Size	Statistical Significance
Extraversion and Emotional Stability		37	87.02	/	/	/	/	/
Athletic Excellence Dimensions	Self-Restraint		56.78	0.189	0.262	(-)	0.196	small effect
	Responsibility		65.40	-0.257	0.124	(-)	0.275	small effect
	Respect for Others		60.56	-0.174	0.304	(-)	0.174	small effect
(-) : non-significant (*) : significant at the (0.05) N: 37 *small (0.01-0.03), *medium (0.03-0.05), and *large (= />0.05) effects								

From this figure, it can be seen that the correlation coefficients for the three athletic excellence dimensions reached values of (0.189, -0.257, and -0.174) at levels of significance (0.262, 0.124, and 0.304) respectively. These values were greater than the significance level (0.05). Accordingly, this means that there is no correlation between emotional arousal and athletic excellence dimensions. After

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calculating the effect size between the variables (0.196, 0.275, and 0.174) ranged from small to medium, the findings uncover that there is a small to medium significant effect between both studied variables and thus, the reason for the absence of a correlation between the variables mentioned is attributed to a shortage in the number of samples tested.

This is confirmed by the fact that what theoretical studies and references demonstrate that emotional arousal is the bridge that leads the athlete to an optimal arousal, which liberates his energy stored to emerge consequently as an activity and to respond accordingly to basketball requirements and techniques. In most cases, and it is for this reason that an athlete is from an elite class of basketball athletes who score higher in sport excellence dimensions those who are self-controlled and sober-minded.

In this context, we also point to the Inverted-U Theory that was created by psychologists Robert Yerkes and John Dodson in 1908. The theory describes a clear relationship between arousal and athletic performance. Each sport has an appropriate degree or amount of emotional arousal, so any increases in activity and emotional arousal increase the performance quality until the peak, which adversely affects performance. In addition, an increase in emotional arousal is followed by an increase in nervous system activities and a decrease in mental processes efficiency and accuracy such as attention and perception that they are related to the possibly available memory information relative to performance and concentration, which enhance motor performance (Abdel Aziz Abdel Meguid Mohamed, 2005, p. 92).

In contrast to some reports in the literature, we can say that sport excellence dimensions has somewhat an impact on basketball player who is however

quickly rectifying the deficiencies since he is considered from an elite class of basketball athletes.

**Hypothesis 03:** There are statistically significant differences between the variables representing athletic excellence dimensions in favour of male basketball athletes.

**Table 04 demonstrates the statistical differences between male and female basketball players in the variables indicating athletic excellence dimensions.**

Statistical Techniques / Athletic Excellence Dimensions	Number		Arithmetic Averages		Standard Deviations		Calculated T	Significance Value (sig)	Statistical Significance	Eta Effect size
	M	F	M	F	M	F				
Self-Restraint	22	15	58.45	54.33	6.58	05.44	1.99	0.053	(-)	0.09
Responsibility	22	15	67.04	63.00	8.58	10.09	1.31	0.198	(-)	0.04
Respect for Others	22	15	62.68	57.46	7.85	07.05	2.06	0.046	(*)	0.10

(-) : non-significant (\*) : significant at the (0.05) N: 14 \*small (0.01-0.05), \*medium (0.06-0.13), and \*large (= > 0.14) effects

It is clear from the results shown in table (04) that T calculated values related to the three athletic excellence dimensions reached the levels (1.99, 1.31, and 2.06) at the significance levels (0.053, 0.198, and 0.046) respectively and accordingly was greater than the significance level (0.05). This means that there are no statistically significant differences between the variables representing athletic excellence dimensions, among both female and male basketball players except in the variable representing respect for others, which was less than the significance level (0.05) and therefore, study revealed that there are only statistically significant differences in gender variable representing respect for others. Where the mean averages were (62.68 and 57.46 for male and female basketball players, respectively). Thus, it can be concluded that the statistical significant differences results are in favour of males.

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It's worth note that in order to ascertain the results we calculated Eta as measures of effect size which reached values ranged between small and medium effects (0.09, 0.04, and 0.10), which means that there are differences in gender variable representing respect for others that are not appeared in the results of the other two dimensions. The reason for this is the lack of individuals in the study sample.

The reason for the absence of a correlation between the variables mentioned is attributed to a shortage in the number of samples tested. However, this can be explained by the fact that the findings uncover that the sample members have obtained high scores in the excellence dimensions (self-restraint, responsibility and respect for others) are in good agreement with other studies. Griffith's psychological experiment, reported in 1928 by Frederick Griffith, was an experiment studied some athletes' psychological profiles "at higher levels" and concluded that special features such as rigor, courage, intelligence, intrepidity, emotional accommodation, optimism, conscience, vigilance, attention, loyalty, and respect for power characterized the sample. (Mohammed al-Shishtawi, 2014, Pp. 134-135).

The finding was quite unexpected and confirmed that athletes as individuals have characteristics and personal traits, including self-restraint, responsibility and respect for others. The latter conveys differences in gender variable in favour of males, which are attributed to consistent differences in Introvert and Extrovert personalities. According to Ahmed Abdel Khalek, there are consistent differences between male and females. Males are often more extroverted than females. As Richard Dunn stated, parents and teachers encourage boys to be

extroverts and in contrary they foster girls to be introverts, more sober, modest and passive (Ahmed Mohamed Abdel Khalek, Nial, 1991, pp. 109-110).

### **3- Finding and propositions results:**

Summing up the results, it can be concluded that there are no correlations between extraversion, emotional instability and athletic excellence dimensions on the one hand and emotional arousal and athletic excellence dimensions on the other hand. Most of the findings show that there are no statistically significant differences between the variables representing athletic excellence dimensions, among both female and male basketball players. Addedly, there are only statistically significant differences between the variable representing respect for others in favour of males. The absence of a correlation between the variables mentioned is attributed to a shortage in the number of samples tested.

This research was concerned with the correlations between Eysenck's personality traits (extraversion and emotional stability), emotional arousal and athletic excellence dimensions among Basketball Players; however, the results should be applicable also to other similar studies.

Clearly, further research will be needed to study the relationship between personality traits, performance and achievement motivation in sport, the relationship between personality traits and the type of sports (solo/or team sports) performed. In addition, the study of varieties of relaxation methods and their effects on emotional arousal among athletes, or the relationship of arousal to performance or sports achievement quality.



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