

# Estrés Psicológico, Burnout y su relación con la Toma de decisiones en Árbitros de Tenis de Mesa: Un estudio de caso en el Cuarto Campeonato de las Universidades Sauditas

## Psychological Stress, Burnout and its relationship with Decision Making among Table Tennis Referees: A Case Study on the Fourth Championship of Saudi Universities

Ahmed Abdul-Rahman Al-Haramlah

*Northern Boarder University, Kingdom of Saudi Arabia.*

**Abstract:** Background: Professional referees are exposed to external sources of stress more than ever before and the performance of match officials has recently come under increased attention and scrutiny. Purpose: The overarching aim of this study was to investigate the psychological stress related to decision making and their relation to psychological burnout among table tennis referees in the fourth championship of Saudi universities. The research tool was applied to a sample of 20 referees who participated in the championship. Method: Psychological Stress scale constructed by Mustafa and Abdoul (2001) (23 items) was used to measure the psychological stress related to decision making among the referees. Further, in order to measure Referee's psychological burnout concerning the intensity and frequency a 23 items scale devised by Al-Haramlah (2016) was implemented. An acceptable validity and reliability were calculated for both the scales were found significant. Result: The study showed that, psychological pressures experienced by the table tennis referees which are connected to the difficulty encountered by referees in taking judgment of the refereeing crew as a result of the over-tension during the game. The referees' also percept a feeling of anxiety and stress while making any decision to settle the results of the match in the final minutes. Conclusion: The results of the study revealed a positive correlation between the psychological stress related to decision making and emotional burnout associated with intensity among table tennis referees.

**Keywords:** psychological stress, burnout, referees

**Resumen:** Contextualización: Los árbitros profesionales están expuestos, más que nunca, a fuentes de estrés externas, por ello, el rendimiento de los árbitros ha sido sometido recientemente a una mayor atención y examen. Objetivo: El objetivo general de este estudio fue investigar la relación entre el estrés psicológico, la toma de decisiones y el burnout en árbitros de Tenis de Mesa del Cuarto Campeonato de las Universidades Sauditas. Los cuestionarios se administraron a una muestra de 20 árbitros que participaron en el campeonato. Método: Para estudiar la relación entre el estrés Psicológico y la Toma de decisiones se utilizó la Escala de Estrés Psicológico desarrollada por Mustafa y Abdoul (2001) de 23 ítems. Además, para evaluar el burnout de los árbitros con respecto a la intensidad y la frecuencia, se utilizó una escala de 23 ítems desarrollada por Al-Haramlah (2016). Ambas escalas mostraron una fiabilidad y validez adecuada. Resultados: El estudio mostró que, las presiones psicológicas experimentadas por los árbitros de tenis de mesa están asociadas a la dificultad encontrada por los árbitros en aceptar la decisión del equipo arbitral como un resultado de la tensión durante el partido. Los árbitros también percibieron una sensación de estrés y ansiedad cuando tomaban cualquier decisión que podía decidir el resultado del partido en los minutos finales. Conclusiones: Los resultados de este estudio mostraron una correlación positiva entre el estrés psicológico asociado a la toma de decisiones y el burnout emocional relacionado con la intensidad entre los árbitros de tenis de mesa.

**Palabras clave:** estrés psicológico, burnout, árbitros.

### Introduction

Psychological types of stress are among the negative psychological problems that can affect people's health and professional career. Stress may reach psychological burnout represented by the feeling of emotional overstrain which may be manifested in the feeling of body and psychological exhaustion, loss of vitality, energy and activity (Goodger et al, 2007; López et al, 2016). The psychological types of stress vary from person to person depending on the mental and psychological construction of that person. Psychological and vocational pressures have imposed some requirements on human beings.

These may be one of the physiological or social stresses or both. Such stresses may lead to a great deal of damage that may affect people's life in taking the right decisions at work (Mamassis and Doganis, 2004).

The kingdom of Saudi Arabia has witnessed an enormous development which includes all areas of life. This has largely affected human social life in sports, education, and work. This matter has increased the complexity of life and hence a lot of psychological stresses have been noticed among individuals of the society in particular, the referees. In the present days referees are under tremendous stress increased because of many variables such as the increase in responsibilities and duties in life in general and vocational life in particu-

Dirección para correspondencia [Correspondence address]: Ahmed Abdul-Rahman Al-Haramlah. E-mail: [ahmad\\_alharamlah@yahoo.com](mailto:ahmad_alharamlah@yahoo.com)

lar. People at work have become susceptible to many types of psychological stresses associated to their jobs. They feel that their efforts are not evaluated properly and they do not please the higher authorities. In connection to this Abouzekri and Karageorghis (2010) analyzed the applied aspects of stress. They indicated that stress is the most important factor that creates exhaustion within the individual. They pointed out that everyone is exposed to a certain degree of stress, leading to psychological and pathological problems. The table tennis referees in Saudi Arabia are exposed to different situations during the periods of training and competitions. This may engender certain psychological pressure depending on the competition and/or achievement. The psychological pressures, theoretically, can be divided into: pressure before the competition, pressure during and after the competition. The stress which affects table tennis referees may affect in taking appropriate decisions during sports competitions.

The purpose of this study lies in answering the following two research questions: 1. what are the psychological pressures related to decision making among table tennis referees in the fourth Championship of the Saudi universities? 2. Is there a relationship between the psychological pressure connected to decision making and psychological burnout among table tennis referees in the fourth championship of Saudi universities? The study of Tsorbat et al (2005) focused their studies on the sources of pressure among Greek handball referees. The study was applied on 84 handball referees who refereed seventeen matches within seven months. The results revealed four pressure sources: evaluation, fear of physical harm, personal conflicts and fear of showing disability. The results also revealed that there is not any statistical significant difference associated to the variables of age, education, rank and years of experience. The previous studies sought to identify the sources of psychological pressure among the athletic and non-athletic referees and their relationship to their performance and presented examples to explain that relationship. Some studies tried to determine the sources of psychological pressure and to point out the most important sources for the referees. The present study is intended to identify the sources of pressure among referees in the Arab environment and their relationship with psychological burnout in terms of intensity and frequency, especially table tennis referees in the kingdom of Saudi Arabia, in addition to their impact on decision making. Thus, the current study could be a starting point to conduct more studies in connection with psychological pressure and psychological burnout among the referees in other Arab environment and other fields such as football, tennis and handball. Lazarus (1999) is considered as one among the first researchers in the development of psychological pressure measurements. From his perspective, mental and cognitive factors are more important in the interpretation of psychological pressure than the events themselves. He states that

what determines pressure is, the individual perception and interpretations of the situation and that this perception possibly include: evil, threat, and challenge, and man's perceived ability to cope with the suffering, the threat and challenge. Lazarus expressed that pressure is the result of the evaluation, not without precedent, as life events does not produce pressure or does not cause pressure, but pressure stems from the perspective of the person (Lazarus, 1999).

### Psychological burnout concept

Psychological burnout is defined by Al haramlah (2007) as "A psychological phenomenon that affects professionals and gradually makes them less productive and active but more depressed and less interested in work." Lazarus (1999) describes it as "A state of exhaustion that results from tiredness and the continuous excessive demands that exceed the professional powers and abilities of the individuals". Arbitration is a hard profession where the referee shoulders a heavy burden which he holds happily as a pure passion and seeks success through persistent efforts to reach the highest possible levels (Fletcher and Scott, 2010). Based on the aforementioned, and in the light of the available scientific sources about this important psychological phenomenon, the importance of the current research proves to be significant in dealing with one of the influential athletic careers that reflects the level of games as the nature of the psychological pressure and psychological burnout faced by the referee from the audience, media or the arbitration committee.. This has an important role in raising, developing and elevating the profession of arbitration and gives value and respectable stead to the athletic referee in society.

### The relationship between psychological pressure and psychological burnout among athletic referee

Psychological pressure is closely related to psychological burnout among athletic referees. Psychological pressure indicates the existence of psychological burnout with the athletic referee, and in return, a referee who suffers psychological burnout formulates negative trends towards himself, the others and in his working environment which affects taking the right decision in athletic competitions.

A table tennis referee, in the Kingdom of Saudi Arabia, is exposed to different situations during training and competition, and this makes him suffer certain psychological pressure depending on the results of the sports competitions and the frequency of demanding situations. This is reflected on the athletic referee in taking defensive attitudes that help to face those pressures. Hence, the researcher sees that the pressure of athletic competition, with the referee, is a negative emotional response that could cause the feeling of psycholo-

gical burnout when self-esteem is threatened, and when the referee realizes the imbalance between the requirement of the context and his ability of successful performance which may affect the taking of the right decision in the right time.

The main objective of this study lies in revealing the psychological pressures connected to decision making and their relationship with psychological burnout among table tennis referees in the fourth championship of Saudi universities. Additionally, the study will also find a relationship between psychological pressures and psychological burnout related to intensity and frequency among table tennis. Further, the study will present a set of recommendations that contributed to the reduction of the level of psychological pressures connected with decision making among table tennis referees revealing the relationship between the psychological pressure and psychological burnout among athletic referees. The importance of this study lies in helping the referees in general and table tennis referees in particular in discarding psychological pressures which will contribute in controlling their conduct during matches, improving the level of their performance and taking appropriate decisions during sports contests. In addition the research aimed at identifying the relationship between the psychological pressures and psychological burnout, also, help decision makers in sports clubs and relevant bodies in presenting assistance to referees to lessen the degree of the psychological pressures they are exposed to. Thus, referees, sport center administrators, sports experts

and governmental and private relevant entities are expected to utilize the results of this study.

## Method

The descriptive analytical approach is used in this study through reviewing the theoretical literature related to psychological pressure and psychological burnout and their sources, in addition to reviewing the literature in the field of athletic psychology. A scale of psychological pressure connected to decision making among table tennis referees in the Kingdom of Saudi Arabia was developed. In order to fit the research problem with the research objectives, data were collected and analyzed to obtain results that contribute in answering the questions of the study and help in providing a set of recommendations based on research findings.

## Participants

The sample of the study consisted of all table tennis referees participated in the fourth championship of Saudi universities which was organized and supervised by the Northern Boarder University between 26 and 29/11/2015. A sample of 20 referees was selected for the purpose of study. All the scale were retrieved and were valid for statistical analysis. Table: 1 states the demographic characteristics of the referees who participated in the study.

Table 1. Demographic information of the participant (Referees)

Variable	categories of the variable	frequency	Percentage
academic qualification	Diploma or less	12	60%
	Bachelor and above	8	40%
chronological age	from 30-39 years	5	25%
	from 40-49 years	12	60%
	50 years or more	3	15%
marital status	Single	1	5%
	Married	19	95%
years of practicing arbitration	less than 10 years	1	5%
	10 years or more	19	95%
standard of arbitration	International	6	30%
	First	13	65%
	Second	1	5%

## Instruments

Psychological pressure scale: To measure the adolescent referees' psychological pressure levels, the Psychological pressure scale (PPS) by Mustafa and Abdoul (2001) was used. This 23-item scale assesses an individual's feelings of psychologi-

cal pressure for an particular task. Some of the questions are ("My decisions are negatively influenced by the fans and their protests during the match"), ("the treat of spectators affect my decision during the match"), ("I am afraid of taking appropriate decision fearing of others reactions") etc. A binary scale was also adopted where 'Yes' and 'No' type of questions

were used to analyze the targeted research questions. The scale contained the demographic characteristics of the referees which are: the academic qualification, age, marital status, experience and standard of arbitration with the highest value is 46, the lowest is 23 and the medium is 34.5. The scale used for the purpose of analysis of data has been used by the author in one of his earlier research study in "Psychological Stress Associated to Table Tennis Referees Decision-making in The Fourth Championship in Northern Border University in The Period of 26-29/11/1434H". The results of this study and the current study have shown to be very much valid and the scale used to be very much reliable.

#### Psychological burnout scale

Psychological Burnout among table tennis referees in terms of frequency and intensity was assessed using the Psychological burnout scale (PBS) devised by Al-Haramlah, A (2016). The scale consisting of 23 items. In the PBS, the respondents were asked to indicate their preferred alternatives by responding on a binary scale where 'Yes' and 'No' type of questions were used to analyze the targeted research questions. The stem sentence for each item is "My decisions are negatively influenced by the fans and their protests during the match", "Lack of experience negatively influences the decision making accuracy", wherein, it indicated No. 6 in case of frequency, meaning that it happens daily with the athletic referee and No. 1 means that it happens a little in the sports season and No. 5 means that it happens but has less frequency than No 6. With the highest value of 132, and the medium is 77.5 for frequency. As for intensity, it ranges between (1-7), where No.7 means that the degree of exposition of the referee to this si-

tuation is very strong while No.1 means very weak exposition. Also, No. 6 means strong exposition but less than No 7, with the highest level is 154 the lowest is 22 and the medium is 88.

*Validity and Reliability of the scales:* The scale of psychological pressure connected to decision making and the scale of psychological burnout of intensity and frequency among referees were offered to six experts in the fields of athletic psychology, psychology and education in the Saudi universities to determine the validity of the items to measure the psychological pressures among referees and the psychological burnout in terms of intensity and frequency. After making some relevant modifications to some items, the expert arbitrators agreed on the face and content validity of all the items of both scales. The internal consistency coefficient of the psychological pressure among referees was extracted using (Cronbach Alpha) education whereby the reliability coefficient was (0.81) which is acceptable in humanistic researches and studies. The internal consistency coefficient of psychological burnout in terms of intensity and frequency among referees was also extracted using (Cronbach Alpha) where the reliability coefficient was (0.83) which is acceptable in humanistic researchers and studies.

## Results

Statistical analysis: For the purpose of the study, we used descriptive statistics, such as the mean and standard deviation. To determine the correlation among the variables, multiple correlation was used, and to compare the participant's responses, t-test and ANOVA was used. All calculation were conducted using the statistical package for social science (SPSS).

**Table 2.** Descriptive Statistics and t-test for psychological pressures and burnout in terms of frequency and intensity

	Mean	sd	t	N	Signifi-cance	Central Premise	Statistical decision
Psychological pressures	31.45	3.44	42.09	20	0.000	34.50	Significant
Frequency	81.90	6.21	58.93	20	0.000	88.00	Significant
Intensity	71.20	7.56	40.87	20	0.000	77.50	Significant

Table 2 values have exhibited that there are differences between the values of the mean and the values of the central premise and in order to know the difference between the two scales results, the researcher has used one sample t-test. The values for psychological pressure test is  $t = 42.094$ , for psycho-

logical burnout  $t = 58.937$ , and for the frequency of psychological burnout is  $t = 40.876$  with a statistical significance of 0.000 which indicates the importance of the differences for the benefit of the central premise.

**Table 3.** correlation between the psychological pressures connected to decision making and psychological burnout

		psychological burnout	
		Frequency	Intensity
Psychological pressures	Correlation coefficient	** .601	*.529
	Statistical significance (2-tailed)	.005	.016
	Number	20	20

\* Statistically significant at (0.05)

\*\* Statistically significant at (0.01)

Table 3 indicates the existence of a statistically significant positive relationship between the psychological pressures connected to decision making and psychological burnout in each of frequency and intensity among tennis table referees in the fourth championship of Saudi universities. This means that psychological pressure, high degree of physical and emotional exhaustion and negative thinking with the inability to resist it makes the athletic referee more exposed to physical, mental and emotional exhaustion bringing the feeling of psychological burnout. In addition, the multiplicity of the

psychological pressures suffered by the referees is reflected on his feeling of burnout, which indicates that arbitration is a hard job where in the athletic referee holds heavy duties and multiple troubles that create lots of psychological pressures which lead to the feeling of psychological burnout in terms of frequency and intensity. In addition, the sense of psychological burnout in terms of intensity and repetition can generate other mental disorders that may affect directly or indirectly the ability of sports referee to make the right decision at the right time during the sports competitions.

**Table 4.** Multiple correlation between the psychological pressures connected to decision making and psychological burnout

Std. Error of the Estimate	Adjusted R Square	R Square	R	Model
2.49311	.475	.530	.728(a)	1

a Predictors: (Constant), Frequency, intensity.

b Dependent Variable: Psychological pressures.

Table 4 presents the value of the multiple correlation of the relationship between the psychological pressures and the psychological burnout related to two variables: intensity and frequency. The relationship between the two variables under study is a strong one. The value R square which is of (0.530) means that psychological stress explains to a rate of 53% the referees' psychological burnout. This result means,

also, that there are other factors which affect the referees psychological burnout. These factors might be physical, social or psychological. The rate of these factors is (47%). In order to check the extent to which the results of the multiple correlations are statistically accepted, the researcher has used the analysis of variance to know whether the differences between the means are statistically significant.

**Table 5.** ANOVA.

Mean Square	df	Sum of Squares	F	Sig.	Model
59.643	2	119.285	9.596	.002(a)	Regression
6.216	17	105.665			Residual
	19	224.950			Total

a Predictors: (Constant), Frequency, intensity.

b Dependent Variable: Psychological pressures.

Table 5 points out that F value is 9.596 with an error rate of 0.002 which are statistically significant and justifies the study hypothesis of the existence of a relationship between psychological pressures and psychological burnout among tennis table referees in the Kingdom of Saudi Arabia.

## Discussion of findings

It has been seen that psychological pressures during a competitive matches are quite evident among referees. However it is an important to analyzed whether psychological pressures connected to decision making and their relationship



with psychological burnout among table tennis referees in the fourth championship of Saudi universities, which is regarded as one of the important tournaments in the region. So that it will be helpful for decision makers in sports clubs and relevant bodies in providing assistance to referees to lessen the degree of the psychological pressures they are exposed to.

However, result of study showed that the table tennis referees experienced psychological pressures which are connected to the difficulty encountered by referees in taking judgment of the refereeing crew as a result of the over-tension during the game. The findings of the present study are well supported with previous study of Alavije et al. (2014) aimed at describing the association between the amount of stress among football referees and the level of their performance. A random sample of 30 referees was selected from the super and first tournaments of the Iranian football during season 2012/2013 that involved 90 referees. The questionnaire of the study was submitted to the referees before and after the match. The questionnaire was also applied on three games for each referee. The results of the study revealed strong relationship between the stress that the referees are exposed to and the level of their performance and that the pressure levels among the referees are reflected upon the manner of their judgment during the game. The research of Mirjamali et al. (2012) carried out a research that targeted at exposing the sources of pressure among the international and local referees of football, volleyball, basketball and handball in Iran. The study was conducted on 252 referees: 104 international referees and 148 local referees. The research results showed six factors associated to pressure among referees which are: personal conflicts, personal and artistic performance, fear of misjudgment, performance evaluation, pressure of time and personal problems. The strongest sources of pressure were the personal and artistic performance, performance evaluation and fear of misjudgment. The results of the study showed the absence of statistically significant differences in pressure sources among referees due to the referees' educational levels. The study of Voight (2009) targeted at discovering the sources of pressure and the strategies of confrontation among the competent authorities of American football officials and the effect of this pressure on their mental health, attention and focus, performance and professional satisfaction. The study was applied upon 200 referees and officials. The result revealed that the highest pressure was due to the conflict between the officials and the requirement of the club members. Consequently, it is important to overcome conflicts between football referees and officials. At the national level, Mohammed (2008) was succeeded in revealing the psychological pressures among the referees of the national football team. This study was performed on 250 referees. The results revealed that the level of psychological pressure among referees was high and that there were no statistically significant differ-

ences in the psychological pressure among referees due to the level of arbitration and specialization as well as the level of matches, age and social status.

Further, the referees' also percept a feeling of anxiety and stress while making any decision to settle the results of the match in the final minutes. The present finding is well corroborated with the results of Bjørn Tore Johansen\* and Tommy Haugen (2013) which was conducted on A total of 83 referees' to know thier perceptions of how crowd noise and disturbance from players and/or coaches, failure (i.e. mistakes) in refereeing, and aggressive behaviour by players and/or coaches influence their decision making when officiating. A regression analysis showed that referees attending the premier league in Norway typically scored higher on anxiety compared with referees working at the second-best level. Furthermore, the referees who perceived their competence as being weaker or average (compared with their colleagues) scored significantly higher on anxiety than did the other referees (the "best" or "very best" groups). The majority of referees reported that noise and disturbance, failure in refereeing, and aggressive behaviour did not affect their decision-making (frequency of disagreement, 80–95%).

Again, values have exhibited that there are differences between the values of the mean and the values of the central premise, which indicates the importance of the differences for the benefit of the central premise. This result might mean that the psychological pressure and the psychological burnout are low among the population of the study. This can be explained by the long experience in the field of arbitration, the athletic consciousness of the study's sample and the ability to command and control this aspect. It might also mean that the referees committee supports the referees' decisions and grant them confidence and support in making right decisions. This helps to reduce the feeling of psychological pressure among table tennis referees and consequently give them the ability to take suitable decisions. The low level of frequency of psychological burnout might be due to the long duration that takes place for the organization of championships as well as the championships at lower level. This helps referees to have a low frequency and intensity of burnout with respect to this result, it is possible to state Robbins' (1998) explanation and categorization related to work pressure, which affects peoples' behavior working in different institutions among whom we can find referees. This puts the emphasis on the following orientations:

1. The nature of work: As stress might affect people due to working long hours per day repeating the same work
2. The role of the person at work: Each employee has his/her role at work decided upon by others such as employers, managers or colleagues which might be a strong source for stress.

## Conclusions and Recommendations

The most important psychological pressures connected to decision making among table tennis referees in the fourth championship of Saudi universities is embodied in the difficulty for referees to ask for the opinion of the assistant arbitration team due to the increasing tension during the game and the feeling of anxiety and stress when taking a decision that determines the result of the game in the last minutes. However, Table tennis referees do not suffer from psychological pressures connected to decision making especially when the referees decisions are negatively influenced by the audience and their continuous protests during the game, and the influence of arbitration committee on the decision the referees is considered to be suitable in addition to the hardship of clinging to any correct decision that affects the practical course of the referees. This result may be due to the referees' long experience in the field of refereeing and sports awareness among the sample of this study, to have the ability to command and control this aspect. It also shows that the referees' committee supports the decision of the referees and give them confidence and support in decision-making, which helps to reduce the level of feeling of stress by table tennis referees. Therefore, they become able to make decisions appropriately to reduce the ratio of the influence of viewers and ongoing protests during the match.

Another important conclusion in this research is the presence of a statistically significant positive relationship between the psychological pressures connected to decision

making and psychological burnout in both frequency and intensity among table tennis referees in the fourth Championships of the Saudi Universities.

**Recommendations can be presented in the light of these results, the following**

1. Training table tennis referees on certain psychological skills to manage psychological pressures and limit their feeling of psychological burnout like: muscular and mental relaxation, mental perception and positive self-discourse before sports competitions.
2. Ensuring the physical preparedness of the referees to enable them lead the games properly.
3. Activating the role of the applied sports psychological specialist in all clubs, sports centers and unions in the Kingdom of Saudi Arabia in all sports activities in general and table tennis in particular.
4. Activating the programs of psychological preparation, mental training and psychological care for athletic referees in general and table tennis referees in particular.
5. Conducting similar studies about referees of other sports and athletic activities such as football, handball, tennis etc.
6. Conducting comparative studies between the Kingdom of Saudi Arabia and other gulf countries concerning the psychological pressures connected to decision making among table tennis referees.
7. Working on the activation of material and moral incentives for table tennis referees.

## References

1. Abouzekri, O. A., & Karageorghis, C. I. (2010). Effects of precompetition state anxiety interventions on performance time and accuracy among amateur soccer players: Revisiting the matching hypothesis. *European Journal of Sport Science*, 10, 209-221.
2. Alavije, S. H et al. (2014). The correlation between football referees' amount of stress and their performance, *International Journal of Sport Studies*, 4 (5): 596 – 600.
3. Al-Haramlah, A (2007). The connection of self – concept and some demographic variables to burnout among the secondary stage teachers in the city of Riyadh, unpublished M.A. thesis, The University of Jordan: Jordan.
4. Al-Haramlah, A (2016). Psychological Stress Associated to Table Tennis Referees Decision-making in the Fourth Championship in Northern Border University in the Period of 26-29/11/1434. *Journal of Educational & Psychological Sciences*. 17 (2), pp 661-680.
5. Bjørn Tore Johansen & Tommy Haugen (2013) Anxiety level and decisionmaking among Norwegian top-class soccer referees, *International Journal of Sport and Exercise Psychology*, 11:2, 215-226, DOI: 10.1080/1612197X.2013.773665
6. Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts, research and practice. *Journal of Sports Sciences*, 28, 127-137.
7. Goodger, K. et al. (2007). Burnout in sport: A systematic review. *The Sport Psychologist*, 21, 127-151.
8. Lazarus, R. S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.
9. López Sánchez, G. F., López Sánchez, L., & Díaz Suárez, A. (2016). Effects of a physical activity program on the sleep quality of schoolchildren with ADHD. *SPORT TK: Revista EuroAmericana de Ciencias del Deporte*, 5(1), 19-26.
10. Mamassis, G., & Doganis, G. (2004). The effects of a mental training program on juniors precompetitive anxiety, self-confidence, and tennis performance. *Journal of Applied Sport Psychology*, 16, 118-137.
11. Mirjamali, E. et al. (2012). A study of sources of stress in international and national referees of soccer, volleyball, basketball and handball in Iran, *World Journal of Sport Sciences*, 6(4): 347 – 354.
12. Mohammad, H. (2008). Psychological pressures among the referees of football national team, levels and sources, unpublished M.A. thesis, The University of Algeria: Algeria.
13. Mustafa, Al-Sayed and Abdul - Mohammad (2001). The elements of psychological pressures and their relationship with decision making among sport referees, unpublished Ph.D. thesis, Halwan University: Egypt.
14. Robins, J.M. (1998). "Correction for non-compliance in equivalence trials". *Statistics in Medicine*. 17 (3): 269–302.

15. Tsorbatzoudis, H. et al. (2005). Sources of stress among Greek team handball referees: construction and validation of the handball officials of stress survey, perceptual and motor skills, 100(3): 821 – 830.
16. Voight, M., (2009). Sources of stress and coping strategies of US soccer officials, *Stress and Health*, 25: 91 – 101