

# **Psychological Stress Associated to Table Tennis Referees Decision-making in the Fourth Championship in Northern Border University in the Period of 261434/11/29-H**

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### Abstract

The study aimed to investigate the psychological stress associated with decision making among table tennis referees in the fourth championship of the Saudi universities. The tool of the study was applied on a sample of (20) referees selected intentionally from all the participants of the table tennis referees in the fourth championship of the Saudi Universities, which organized and supervised by Northern Border University in the period of 26-29/11/1434H. A scale of psychological stress was developed related to decision-making among the referees which consisted of (23) items. The study results showed that the most important psychological stress associated with decision-making among table tennis referees in the fourth championship of the Saudi universities, faced by the referees, was the difficulty in having or taking the judgment of the refereeing crew as a result of excessive tension during the match, and a sense of anxiety and tension among referees when making any decision to settle the results of the match in the final minutes of the match. The results also showed that there were no statistically significant differences at the level of significance ( $0.05 = \alpha$ ) in the psychological stress associated with taking the decision to the table tennis referees according to the variables: academic qualification, age, marital status, and number of years of refereeing, and the level of referee.

**Keywords:** referees, psychological stress, table tennis.

## الضغوط النفسية المرتبطة باتخاذ القرارات لدى حكام كرة الطاولة في البطولة الرابعة للجامعات السعودية المقامة في جامعة الحدود الشمالية في الفترة ٢٦-٢٩ / ١١ / ١٤٣٤هـ

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### الملخص

هدفت هذه الدراسة إلى الكشف عن الضغوط النفسية المرتبطة باتخاذ القرارات لدى حكام كرة الطاولة في البطولة الرابعة للجامعات السعودية، وطبقت أداة الدراسة على عينة مكونة من (٢٠) حكماً تم اختيارهم قصدياً من جميع حكام كرة الطاولة المشاركين في البطولة الرابعة للجامعات السعودية، والتي تمت بتنظيم وإشراف جامعة الحدود الشمالية في الفترة ٢٦-٢٩ / ١١ / ١٤٣٤هـ، وتم تطوير مقياس الضغوط النفسية المرتبطة باتخاذ القرار لدى الحكام والمكون من (٢٢) فقرة، واستخرجت دلالات صدق وثبات مقبولة للمقياس، وأظهرت نتائج الدراسة إن أهم الضغوط النفسية المرتبطة باتخاذ القرار لدى حكام كرة الطاولة في البطولة الرابعة للجامعات السعودية، تتمثل بالصعوبة التي يعاني منها الحكام في الاستعانة برأي طاقم التحكيم المعاون نتيجة التوتر الزائد أثناء المباراة، وشعور الحكام بالقلق والتوتر عند اتخاذ أي قرار يحسم نتيجة المباراة في الدقائق الأخيرة من المباراة. وبينت النتائج كذلك عدم وجود فروق ذات دلالة إحصائية عند مستوى دلالة ( $\alpha = 0,05$ ) في الضغوط النفسية المرتبطة باتخاذ القرار لدى حكام كرة الطاولة وفقاً لمتغيرات: المؤهل العلمي، والعمر الزمني، والحالة الاجتماعية، وعدد سنوات ممارسة التحكيم، ومستوى التحكيم.

الكلمات المفتاحية: الضغوط النفسية؛ الحكام؛ كرة الطاولة.

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### **Introduction**

Psychological kinds of stress is considered to be one of the psychological phenomena that affect health and career. This may reach to what is called 'psychological burnout' represented by the feeling of emotional overstrain. Emotional overstrain can be manifested in the feeling of exhaustion of the body and psychological energy, loss of vitality and activity, in addition to a dull feeling. The later is a state, which affects workers as they take negative and sarcastic attitudes towards others. They also feel that their performance is inadequate which leads to negative self-evaluation as they feel they are incapable of accomplishing their work properly. (Al-Harmala, 2007).

Psychological kinds of stress are negative and they cannot be ignored or adapted easily. Thus these can create psychological commotion which may be acute and chronic for a long time. The psychological stresses varies from one person to another depending on psychological and mental construction of the person. Psychological and vocational pressures have imposed some needs and requirements on humans. These may be one of the physiological or social stresses or both. To confront such stresses may result in a great deal of harm that affect peoples' life and taking the right decisions at work. Needless to say that during the middle of the twentieth century, stresses increased due to variables and developments which resulted in increasing responsibilities and duties and interaction among people, competition in life and vocational life in particular. Workers in

such various jobs are vulnerable to different sorts of psychological stresses related to their jobs. They feel their efforts aren't evaluated or considered, and they don't please the head employees. (Al-Dkheel, 2014).

Al-Trairy (1994) defined psychological pressures as "the existence of external pressurized factors on a person whether totally or partially to a degree of a feeling of tension or personality distortion." When they increase, an individual may lose control and change his/her behavioral attitude. Psychological pressures have their impact on the whole body. Thus psychological pressure is a state whereas an individual suffers when he/she are confronted with a persistent requirement which surpasses his/her ability.

Glanz and Schwartz (2008) most current definitions state that stress is the mental and physical response and adaptation by our bodies to the real or perceived changes and challenges in our lives. A stressor is any real or perceived physical, social, or psychological event or stimulus that causes our bodies to react or respond.

Sapolsky (2004) in psychology states that stress is a feeling of strain and pressure. Small amounts of stress may be desired, beneficial, and even healthy. Positive stress helps improve athletic performance. It also plays a factor in motivation, adaptation, and reaction to the environment. Excessive amounts of stress, however, may lead to bodily harm. Stress can increase the risk of strokes, heart attacks, ulcers, and mental illnesses such as depression.

The kingdom of Saudi Arabia has witnessed an enormous development which includes all areas of life. This has largely affected human social life e.g. 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.

Fiona Jones, Jim Bright, Angela (2001) point out that Stress can be external and related to the environment, but may also be created by internal perceptions that cause an individual to experience anxiety or other negative emotions surrounding a situation, such as pressure, discomfort and strain, which they then deem stressful.

Psychological stress may be defined as an indefinite physical response to a certain need or none existent situation of internal and external needs and our abilities to satisfy these needs. Psychological strain in the field of sports can be defined as sport cognition of what is needed to accomplish a job and his/her ability to do or finish that job taking into consideration the result of that job represents an importance to him/her.

Pillars or basics of psychological kinds of strain consist of the following:

- a. Attitudes that are met by a sportsman as sport competition and how to interact with abilities and competition attitude. If there is no concordance between abilities and competition requirements, the level of psychological strain will rise.
- b. Concepts of the sport and his or her beliefs about attitude; how does sport realize or interpret the attitude. When competition increases and surpasses the abilities, evaluation of attitude will be more pressurized.
- c. Responding to pressurized attitude as a source of failure and incapability of attaining success or self-satisfaction. This may lead to negative physiological and psychological changes.
- d. Decrease in the level of performance and feeling of psychological pressures and negative contact with others. This may affect his/her personal advantages and enthusiasm. Besides, a decrease in the ability of taking suitable decision at the right time. (Al-Harmlah, 2011)

Thus a sport referee who is exposed to psychological stress may lead to negative psychological changes involve high levels of sympathetic nervous system activation, often referred to as the "fight or flight" response. The response involves pupil dilation, release of endorphins, increased heart and respiration rates, cessation of digestive processes, secretion of adrenaline, arteriole dilation, and constriction of veins. This high level of arousal is often unnecessary to adequately cope with micro-stressors and daily hassles; yet, this is the response pattern seen in humans, which often leads to health issues commonly associated with high levels of stress. (Oregon State University, 2004)

Table tennis referee in Saudi Arabia are exposed to different positions and multiple conditions during periods of training and competitions and this may cause exposure to certain psychological pressure depending on

the type of competitions and sport achievements results. A number of these stressful situations occur, which is reflected in the sports referee to take defensive positions that help to cope with these pressures.

Thus, the researcher believes that sports competitive pressures among sports referees is negative emotional response when the threat of self-esteem is happening, and when the sports referee realizes imbalance between competition requirements and ability to successful performance to meet these requirements. Psychological pressures can be divided –theoretically- according to the competition: pressure before the competition, pressure during and after the competition against table tennis referees which may affect the taking of an appropriate decisions during athletic competitions. Thus the problem of this study lies in answering the following two questions:

- What is the psychological stress associated with decision-making among table tennis referees in the fourth championship of the Saudi universities?
- Are there significant differences in the psychological pressures associated with the decision-making among table tennis referees according to the following variables: Qualification, age, marital status and number of years of refereeing practice and the level of refereeing?

### **Objectives of the study and its importance:**

The main objective of this study was to find the psychological stress associated with decision-making at the table tennis referees in the fourth championship of the Saudi universities, and to identify the differences in stress-related decision-making at the table tennis referees according to the variables of qualification, age, marital status, number of years of refereeing and the level of refereeing. The study also aimed to develop the psychological stress associated with taking decisions at the table tennis referees in Saudi Arabia. In addition, it will provide a set of recommendations that contribute to reduce the level of stress associated with the decision-making table tennis referees in Saudi Arabia.

The importance of this study lies in helping sports referees in general, and the table tennis referees in particular, to get rid of stress which

contributes to control their behavior in matches and to improve their performance for taking suitable decisions during sports competitions. The study will help decision-makers in sports clubs to provide help to referees in reducing the level of stress they are exposed to. Thus, it is expected from the referees, administrative and sports centers, trainers, athletes, experts, and the government to get the benefits of the results of this study.

### **Literature review:**

previous relevant studies had been reviewed and analyzed to explore the impact of psychological pressure on referees. (Anshel; Sudarso; Ekmekci & Saraswati, 2014) had conducted a study that aimed to provide a model of the nature of the relationship between sources of pressure to avoid dealing with the basketball referees in Turkey. The study was applied to (125) Turkish referees of basketball; their ages between (18-36) years. The study results showed that there was a relationship between the psychological pressure and avoidance strategg. The study approved the validity of the model that had been offered, the model showed that disorder leads to low performance level, which contributes to the vulnerability of verbal abuse, which affects the behavior of the referees who may depend on the cognitive approach or knowledge of avoidance (avoidance culture). The study provided indicators for the validity of the model.

A study was conducted by (Alavije; Gharote; Rahim & Rostami, 2014) and aimed to show the relationship between the amount of pressures among football referees and the level of performance. It selected a random sample of (30) professional referees in the Iranian football Super League and the first league in season 2012/2013 totalling (90) referees. The study questionnaire was applied to identify referees on two stages before and after the game, the questionnaire was applied on three matches for each referee. The results showed the presence of the invers between the pressures and the level of referees' performance. The level of psychological pressure among the referees reflected on the quality of how they referee and give judgments during the match.

(Alnathari, 2012) conducted a study that aimed at investigating the psychological stress caused by the sport journalism and how it affects the



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football referees according to their years of experience. The study was conducted on 62 referees. The results of the study showed that there are no statistical significance differences between the level of the psychological stress caused by the sport journalism and the referees' years of experience.

(Mirjamali; Ramzaninezhad; Rahmanian & Rehani, 2012) conducted a study in Iran to discover the sources of stress upon the national and international football, volleyball, basketball and handball referees. The study was applied on 252 referees; 104 international referees and 148 national referees. The study results indicated that there are six variables related to stress among referees; personal conflicts, the technical and personal performance, being afraid of misjudgement, performance evaluation, time pressure and personal problems. The strongest variables among these are; the technical and personal performance, performance evaluation and being afraid of misjudgement. The results also showed that there are no statistical significance differences related to the educational level of the referee.

The study of (Voight, 2009) aimed to reveal the sources of stress and the American Football officials' strategies to face it and show the effects of stress on their mental health, focus, performance and job satisfaction. The study was conducted on 200 officials and referees. The results showed that the highest levels of stress were caused by the conflict between officials and the club members' demands. Therefore; it is very necessary that those officials and referees should have time and conflict management skills. In a study conducted by Mohammed (2008), and aimed to investigate the sources and levels of psychological stress among 250 national referees, the results showed that there is a high level of psychological stress among referees and that there are no statistical significant differences related to the level of matches, specialization, age or social status.

The study of (Tsorbatzoudis, Kaissidis- Rodafinos, Partemian & Grouios, 2005) was interested in discovering the sources of stress among the Greek handball referees; the study was conducted on 84 referees who refereed seventeen matches in seven months. The results indicated the existence of four stress sources; evaluation, being afraid of physical harm, personal conflicts, being afraid of being labeled as incompetent. The results

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also showed that there are no statistical significance difference related to age, educational level, rank or years of experience.

The previous studies were interested in the sources of psychological stress and its relation to their performance trying to give models in order to explain these relationships. Some studies were also interested in the sources of stress and the importance of these sources. The significance of this study is in revealing the sources of psychological stress in the Arabic environment, specifically among the table tennis referees in the Kingdom of Saudi Arabia, and the influence of stress in decision making in sport competitions. Therefore; this study could be a starting point to conduct more studies in other Arabic environments and in other sport fields such as football, tennis, volleyball, basketball and other sports.

### **Methodology**

The analytical descriptive method is used in the current study through reviewing the previous literature related to psychological stress and its sources in addition to the literature related to sport psychology. A scale was developed to investigate the psychological stress related to decision making among the table tennis referees in the Kingdom of Saudi Arabia. In order to achieve the goals of the study, the data were collected and analyzed to answer the study's questions and give recommendations built upon the results.

### **The Population**

The population consists of all the table tennis referees participating in the Fourth Saudi Universities Championship organized by the Northern Borders University between 26-29/11/14H. The study questionnaire was distributed among a representative sample of 20 referees. All the copies were recollected and were valid for the statistical analysis. Table (1) shows the demographic features of the participants.

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**Table (1)**  
**The Demographic Features of the Participating Referees**

Variable	Category	Number	Percentage
Qualification	Diploma or Less	12	60%
	BA or higher	8	40%
Age	30-39 years	5	25%
	40-49 years	12	60%
	Older than 50 years	3	15%
Social Status	Single	1	5%
	Married	19	95%
Years of experience as a referee	Less than 10 years	1	5%
	More than 10 years	19	95%
Level of refereeing	International	6	30%
	First	13	65%
	Second	1	5%

### **The Scale of Psychological Stress among Table Tennis Referees:**

The study used the psychological stress scale that was used in (Mustafa, 2001). The scale consists of 23 items that measure the psychological stress among referees. The scale uses a binary system in which the answer is either Yes or No. It Scale includes the referees' demographic features; qualification, age, social status, years of experience and level of arbitration.

### **Validity of the Scale**

The scale was presented to six specialists in sport psychology, psychology and education in order to find out the validity of the scale's items and its ability to investigate the psychological stress among referees. The six specialists agreed that the scale's items are valid after applying some appropriate modifications.

### **Reliability of the Scale**

The coefficient of internal consistency for the psychological stress among referees was found by using Cronbach's alpha. The reliability coefficient is (0.81) which is an accepted coefficient in humanities studies.

## Statistical processing

The Statistical Package for Social Science “SPSS” was used to answer the study’s questions as follows:

Frequencies and percentages of the demographic features of the participating referees.

Chi-Square Distribution test was used to answer the first question.

Kruskal-Wallis test was used to answer the second question.

## Results

First: the results of the first question “What is the psychological stress related to decision making among the referees in the Fourth Saudi Universities Championship?”

To answer the first question the Chi-Square Distribution test was used as shown in table (2).

**Table (2)**  
**The results of Chi-Square Distribution test of the psychological stress related to decision making among the referees in the Fourth Saudi Universities Championship**

	Item	Answer	Noticed Frequency	Expected Frequency	Chi-Square	P-Value
1	My decisions are negatively influenced by the fans and their protests during the match	Yes	3	10	9.8	0.002*
		No*	17	10		
2	Lack of experience negatively influences the decision making accuracy	Yes	13	10	10.8	0.180
		No	7	10		
3	I am stressed and worried when I take a decision at the last minutes of the match	Yes*	15	10	5	0.025*
		No	5	10		
4	Being afraid of criticism makes me take some false decisions during the match	Yes	11	10	0.2	0.655
		No	9	10		
5	I am afraid of taking the appropriate decision fearing of others reactions	Yes	11	10	0.2	0.655
		No	9	10		

Table 2

	Item	Answer	Noticed Frequency	Expected Frequency	Chi-Square	P-Value
6	When sticking to the appropriate decision I remember the media attack	Yes	6	10	3.2	0.074
		No	14	10		
7	when I receive a punishment related to my decisions during the match, I think that I have little knowledge and information	Yes	11	10	0.2	0.655
		No	9	10		
8	The threats of spectators affectsmy decision making during the match	Yes	10	10	0.0	1.000
		No	10	10		
9	My decisions in the previous matches are influenced by the following ones	Yes	7	10	1.8	0.180
		No	13	10		
10	Being afraid of aggression after the match caused me to forget some of the knowledge and experience that help me to make decisions	Yes	10	10	0.0	1.000
		No	10	10		
11	My decisions are affected by being afraid of influencing my career future regarding reducing the number of matches, suspension or exclusion	Yes	10	10	0.0	1.000
		No	10	10		
12	My decisions are negatively influenced by fatigue	Yes	11	10	0.2	0.655
		No	9	10		
13	The referees committee influenced my appropriate decision making	Yes	1	10	16.2	0.000*
		No	19	10		
14	Aggression and threats before the matches influenced my decision making	Yes	7	10	1.8	0.180
		No	13	10		
15	The over tension during the match makes it harder to take the opinion of cooperative referees team	Yes	7	10	1.8	0.002*
		No	13	10		

Table 2

	Item	Answer	Noticed Frequency	Expected Frequency	Chi-Square	P-Value
16	The demand of changing some referees affects my decision making	Yes	9	10	0.2	0.655
		No	11	10		
17	Hearing the players' threats affects the accuracy of my decision making	Yes	10	10	0.0	1.000
		No	10	10		
18	Being afraid of riot makes the decision of cancelling a match harder	Yes	7	10	1.8	0.180
		No	13	10		
19	When my decisions contradict with the cooperative referees team I suspect my own decisions	Yes	9	10	0.2	0.65
		No	11	10		
20	Being afraid of failure I generally hesitate before making a decision	Yes	12	10	0.8	0.371
		No	8	10		
21	The unavailability of the safety and security factors and the fear follows that negatively influences the decision making	Yes	11	10	0.2	0.655
		No	9	10		
22	As a result of the spectators pressure to take one of the teams' side , I commit mistakes when I make a decision	Yes	11	10	0.2	0.655
		No	9	10		
23	I don't stick to any right decision that affects my career as a referee	Yes	5	10	5	0.025*
		No	15	10		

\* Has a statistical significance at the level  $\alpha = 0.05$

Table (2) shows that the most important psychological stress factor related to decision making among the referees in the Fourth Saudi Universities Championship is the hardship of taking the opinion of cooperative referees team due to the over tension during the match. The ratio of those who believe in that is (85%) of the population. The Chi-Square value is (9.8) with (0.002) P- Value which has a statistical significance at the level of (0.05). The conclusions also indicated that among the psychological stress linked to taking decisions by table tennis referees, is their feeling of stress

when taking a decision on the match in its last minutes. The percentage of those who endorsed this point of view is 75% among the population of the study in that the value of  $\chi^2$  calculated at (5) with a probability value that reached 0.0025 which is statistically significant at the level of 0,005. Results also indicated that table tennis referees do not suffer from the psychological stress related to decision making especially with respect to how the referees decisions are negatively affected because of the spectators, their continuous protest during the match, the influence of the referees committee on referees taking the decision they deem suitable, and the difficulty of maintaining any right decision that would have an impact on the referees work itinerary. The rate of those who disagreed with that has respectively reached 75%, 85%, 95% among the population of the study, as the value of  $\chi^2$  is respectively calculated at 8, 9, 2, 16.5 with probability values that respectively reached 0.002 and 0,025,000 which is statistically indicative at the significance level of 0.05. These results are similar to those in the study of Alavije; Gharote; Rahim & Rostami, (2014). So these findings are considered logical in the light of the strong effects that affect referees' decisions like all people.

Second, the result of the second question answer says that: "Are these statistically-significant differences in the psychological pressures that are related to decision making among table tennis referees according to variables on scientific degrees duration, social studies, and the number of years in practicing this job and the level of referees?".

In order to answer this questions the Mann- Whitney test was used in order to know the differences in the psychological differences related to decision making among table tennis referees according to variables of scientific degrees, social status, and the numbers of years as a referee. Table 3 shows the results of the test.

### **Status**

The results of Mann- Whitney test to know the differences in the psychological pressures related to decision making among table tennis referees according to variables of scientific degrees, social status, and the years spent as a referee are shown below.

**Table (3)**

**The results of Mann- Whitney test according to variables of scientific degrees, social status, and the years spent as a referee**

Variables	U	Degrees of freedom	Portability value
Qualification	36.5	1	0.367
Marital status	2.5	1	0.217
Years of experience as a referee	7.5	1	0.724

We notice from table 3 that there are no statistically significant differences at the level of ( $\alpha=0.05$ ) in the psychological procedures related to decision making among table tennis referees and according to variables of scientific degrees, social status, and the number of years spent as a referee. The (u) values were not statistically significant at the level of ( $\alpha=0.05$ ). This is because the scientific degree variables it reached 36.5 with probability value reaching 0.367. As for the social status variables, reached 2.5 with a probability value of 217. Regarding the variable of years spent as a referee it reached 7.5 with a probability value of 0.724. In the researcher's point of view, these findings may be reasonable due to the conditions that affect sample selection.

Concerning the differences in the psychological pressures related to decision making among table tennis referees according to variables of duration, the level of referees, the Kruskal- Wallis test was used. Table 4 reveals the results of the test.

**Table (4)**

**The results of the kruskal- Wallis test to know the differences with respect to the psychological pressures related to decision making among table tennis referees based on variables of life duration and refereeing level**

Variables	X <sup>2</sup>	Degrees of freedom	Portability value
Age	2871	2	0.238
The level of refereeing	2.5	2	0.077



Based on table 4 we notice that there are no differences that have a statistically significant level of  $\alpha = 0.05$  in the psychological pressures related to decision making among table tennis referees based on variables of life duration and refereeing level. The  $\chi^2$  values were not statistically significant at the significance level  $\alpha = 0.05$ . They reached 2.871 for the life duration with a probability value of 0.238, as for refereeing level; it was 5.122 with a probability value reaching 0.077. All probability values were higher than the significance level of 0.05.

### **Findings and recommendations:**

#### **The study has found that:**

The most serious psychological pressures related to decision making among table tennis referees in the Fourth Championship of Saudi Universities reveal themselves in the difficulties that referees suffer from consulting the refereeing panel as a result of the overstress during the match, and the referees feeling of stress when taking a crucial decision in the last minutes of the match. This can be also due to the feeling of psychological pressures and stress, and accordingly there may be a degradation in managing psychological pressures and the feeling of psychological and mental tiredness in the last minutes of the match. This has an impact on the suitable response to the situation during this crucial period of the match which will certainly decide the fact of the championship competitors. This is in addition to what accompanies this of psychological reflexive performances that affect taking the right decision in the right time. Such as a situation deepens the referees feeling of stress and difficulty of consulting the refereeing panel in the last minutes of the match. Table tennis referees do not suffer from stress-related decision-making, particularly with regard to referees' negative emotion due to viewers ongoing protests during the match, and the impact of the referees committee to take the right decision that they see fit, and the difficulty of adhering to any true decision affects the practical march of referees. This can be interpreted as a result of 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 side or aspect. It also shows that the referees

committee supports the referee's decisions and give them confidence and support in decision-making, which helps to reduce the level of feeling stress at the 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, in addition to reduce the impact of the referees committee to take the appropriate decisions for the referees of table tennis in the fourth Championships of the Saudi Universities.

In the light of the results of this study, the following recommendations are provided to:

- creating more interest in enhancing the capacities of table tennis Saudi referees to manage their time during the match and to reinforce corporation between referees and refereeing crew during the match.
- Working to design training programs for table tennis referees, including necessary training on psychological skills to manage psychological stress among referees.
- Training table tennis referees on some psychological skills in Saudi Arabia such as muscle relaxation, mental visualization and positive mental self-talk before competitions to help them control psychological pressure in order to carry out their job distinctively and perfectly.
- Activating the role of psychologist in all clubs, sports centers and federations in Saudi Arabia including athletes referees in all sports activities in general and in the table tennis sports in particular.
- Training referees on special programs in sport management and psychological sport to rehabilitate and train them to take the right decision at the right time.
- Much attention should be given to conduct similar studies on referees in the field of sports such as football, handball, and tennis.
- Conducting comparative studies between the kingdom of Saudi Arabia and Gulf countries with regard to psychological pressures related to decision making among table tennis referees.

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