

PSYCHOLOGICAL STRESS LEVEL AMONG FOOTBALL REFEREES IN LIGHT OF MASSES ABSENCE DUE TO THE COVID-19 PANDEMICIbtehal Alkhalwaleh^{1*} and Amjad Madanat²^{1,2}Sports Training, Mutah University, Jordan**Abstract**

This study aimed to determine the level of psychological stress among football referees in light of the holding of matches without the masses due to the COVID-19 pandemic. The study recruited 300 approved referees in the official Jordan professional football league. The Copenhagen Psychosocial Questionnaire (COPSOQ) was used for the study. The sample members included 138 (46%) court referees, and 162 (54%) line referees. On average, there was psychological stress among football referees masses absent due to the COVID-19 pandemic. Court referees reported that a high level of psychological stress among court referees was higher (15.36) than the line referees (14.62). Referees experienced modest degrees of psychological stress as a consequence of COVID-19's mandatory absence from stadiums. Because the FIFA has training programs, and several very experienced referees who help referees with less experience, these officials are better able to deal with difficult situations.

Keywords: COVID-19 Pandemic. Masses. Court referees

NIVEL DE ESTRÉS PSICOLÓGICO ENTRE LOS ÁRBITROS DE FÚTBOL ANTE LA AUSENCIA MASIVA POR LA PANDEMIA DE COVID-19**Abstrato**

Este estudio tuvo como objetivo determinar el nivel de estrés psicológico entre los árbitros de fútbol ante la realización de partidos sin aglomeraciones debido a la pandemia de COVID-19. El estudio reclutó a 300 árbitros aprobados en la liga oficial de fútbol profesional de Jordania. Para el estudio se utilizó el Cuestionario Psicosocial de Copenhague (COPSOQ). Los miembros de la muestra incluyeron 138 (46%) árbitros de cancha y 162 (54%) árbitros de línea. En promedio, hubo estrés psicológico entre las masas de árbitros de fútbol ausentes debido a la pandemia de COVID-19. Los árbitros de cancha informaron que el alto nivel de estrés psicológico entre los árbitros de cancha fue mayor (15,36) que entre los árbitros de línea (14,62). Los árbitros experimentaron grados modestos de estrés psicológico como consecuencia de la ausencia obligatoria de los estadios por el COVID-19. Debido a que la Federación Jordana tiene programas de capacitación y varios árbitros muy experimentados que ayudan a los árbitros con menos experiencia, estos oficiales están mejor capacitados para lidiar con situaciones difíciles.

Palabras Clave: Pandemia COVID-19. Masas. Árbitros de cancha

NÍVEL DE STRESS PSICOLÓGICO EM ÁRBITROS DE FUTEBOL FACE À AUSÊNCIA DE MASSAS DEVIDO À**PANDEMIA DE COVID-19****Abstrato**

Este estudo teve como objetivo determinar o nível de estresse psicológico em árbitros de futebol diante da realização de partidas sem massas devido à pandemia de COVID-19. O estudo recrutou 300 árbitros aprovados na liga oficial de futebol profissional da Jordânia. O Copenhagen Psychosocial Questionnaire (COPSOQ) foi usado para o estudo. Os membros da amostra incluíram 138 (46%) árbitros de quadra e 162 (54%) árbitros de linha. Em média, houve estresse psicológico entre as massas de árbitros de futebol ausentes devido à pandemia de COVID-19. Os árbitros de quadra relataram que um alto nível de estresse psicológico entre os árbitros de quadra foi maior (15,36) do que os árbitros de linha (14,62). Os árbitros experimentaram graus modestos de estresse psicológico como consequência da ausência obrigatória do COVID-19 nos estádios. Como a Federação da Jordânia tem programas de treinamento e vários árbitros muito experientes que ajudam os árbitros com menos experiência, esses árbitros são mais capazes de lidar com situações difíceis.

Palavras-chave: COVID-19 Pandemia. Massas. Árbitros

Introduction

Spectators' pressure is the most crucial factor that influences football referees. Since audience attendance may pressure the game's referees, and other officials, some rules in team sports, notably football, require it (Mirjamali et al., 2012). Stress levels for football referees, like those for players, and coaches, increase as competition levels climb because of the constant clamor of the audience, and its requests that the officials reverse their choices. It does not matter whether they seem tense or stressed since they insist they are not letting the pressure from others around them affect their performance (Johansen & Haugen, 2013). Stress has a deleterious influence on football referees' self-confidence, and decision-making ability. Self-control is especially vital in high-stress situations, such as fights, injuries, and mistakes (Bastug et al., 2016). According to several studies, the psychological strain of being a king is either minor or moderate (Gencay, 2009). Because of COVID-19, professional football games are played behind closed doors. This has led to many changes, including how the performance of the referees, and the decisions they make are affected by the fact that the public is no longer there to pressure them, and

try to influence them (Sors et al., 2020).

Even though there has been much research on referee bias in soccer games, previous studies suggest that crowd size may be one of the most critical factors. Due to the COVID-19 pandemic, games played behind closed doors have made it possible to study the effects of crowd noise or the lack of crowd noise in an environmental context (Sors et al., 2020). As confirmed by previous studies, psychological stress is a very important factor in the formation of psychological pressure that affects the performance of match referees in football games. This study aims to determine the level of psychological stress among football referees without the masses due to the COVID-19 pandemic. The significance of this study lies in the fact that it is the first study of its kind to investigate the levels of psychological stress experienced by football referees when the audience is absent as a consequence of the COVID-19 pandemic in the Jordanian football professional league. The purpose of the study is to provide experts in the referee's Committee of the Jordanian football association with information regarding the levels of psychological stress experienced by referees when the audience is absent.

Methods**Participants**

Through convenience sampling, the study population included 300 referees from the approved referees in the official list of FIFA for the 2020-2021 seasons. The study sample included (100%) of all members of the study population. All the referees answered the study questionnaire correctly, and no answer was excluded.

Instrument

The level of psychological stress was measured using the Copenhagen Psychosocial Questionnaire (COPSOQ), globally recognized for measuring psychological stress in the workplace (Nübling et al., 2005). The questionnaire comprised 87 items, drawn in 25 constructs, three single items, and 22 scales. The responses were evaluated on a five-point Likert scale in which the first category shows the maximum value, i.e., "always". While the last minimum value was represented by "never". The four domains of the COPSOQ questionnaire were influence, and development, demands at work, strain (effects, outcomes), and interpersonal relations, and leadership. However, a different scale of job security was included.

Manuscrito recibido: 08/03/2023

Manuscrito aceptado: 22/03/2023

*Corresponding Author: Ibtehal Alkhalwaleh, Sports Training, Mutah University, Jordan

Correo-e: dr.khalwaleh@mutah.edu.jo

Procedure

Due to the COVID-19 pandemic, some study procedures have been restricted via remote communication, such as a phone call made to the Referees committee in the Jordanian football federation, which provided the researcher with the names, and phone numbers of the referees listed on the arbitration list of the Jordanian football professional league. After that, the researcher contacted the referees by phone, and asked them to specify the appropriate time to communicate with them to clarify the procedures for answering the questionnaire, which was sent to them by Google forms for questionnaires. In addition, they answered the paragraphs of the questionnaire individually after they understood all the questions.

Statistical analysis

The standard deviation of the COPSOQ scale is generally 15-25 points. Therefore, five signifies a small to intermediate effect ranging from 0.2 to 0.33. Whereas, 10 point shows the middle to the strong effect that ranges from 0.4 to 0.66. Notably, higher values demonstrate "a lot", and low values show "a little" effect. Analysis of Variance (ANOVA) was used to examine differences between the professional groups. While, differences in mean values were measured with Scheffé's post hoc test with $p < 0.05$ for showing statistical significance. The data were analyzed with the IBM SPSS version 21.

Results

The study sample included 300 members aged between <30 to 50 or more. The sample members included 138 (46%) court referees, and 162 (54%) line referees. The demographic characteristics of participants are shown in Table 1 (Table 1).

Table 1 shows the descriptive statistics of psychological stress responses of the referees for the season 2020-2021 in the absence of the public due to the COVID-19 pandemic. A total of 327 questionnaires were issued, and 300 employees took part in the study. The response rate was 55%. 45 to 65% was the interquartile range of the response rate, along with 22 to 96% of the total range. In the sub-scale of social relation, no statistical significance was observed. However, the COPSOQ variables groups came out to have low or high response rates.

Table 2 represents the mean, and SD of the psychological indicators among the football referees. It showed that in the absence of masses, the referees had a sense of a lack of meaning of life having a mean value of 79. It was followed by role clarity (74), general health (70), and social support (67). Overall, the dimensions of intention to leave (16), cognitive stress (27), insecurity at work (28), influence at work (36), degree of freedom (38), burnout (46), role conflict (46), and feedback (42) were marked as lower (Table 2).

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Table 3 shows the T-test results for the differences between the averages of psychological stress according to the referee position (court referee - line referee), indicating that there are statistically significant differences between the average psychological stresses according to the referee position variable, which reached (4.83). With a p -value= 0.008, and court referees having a high level of psychological stress, the court referee was higher (15.36) than that of the lineman referees (14.62) (Figure 2).

Table 1: Demographic characteristics of participants (n=300).

Variable		N (%)
Sex	Male	270 (90%)
	female	30 (10%)
Age	< 30	48 (16%)
	30-39	51 (17%)
	40-49	102 (34%)
	≥ 50	90 (30%)
Marital status	Single	60 (20)
	Married	240 (80)
Experience	≤ 5	78 (26%)
	6-10	63 (21%)
	11-15	45 (15%)
	16-20	54 (18%)
Position referees	Court referees	138 (46)
	Line referees	162 (54)

Table 2: Differences in means for the COPSOQ scales.

Scale	COPSOQ Referees n = 300	p-value (Scheffé)
Demands at work		
Quantitative demands	55 (14)	< 0.001
Emotional demands	58 (16)	< 0.001
Demands for hiding emotions	51 (19)	n.s.
Influence, and Development At Work		
Influence at work	36 (18)	< 0.001
Degree of freedom	38 (17)	< 0.001
Possibilities for development	68 (15)	< 0.001
Meaning of work	79 (15)	0.008
Workplace commitment	53 (17)	n.s.
Interpersonal relations, and leadership		
Predictability	53 (19)	< 0.001
Role clarity	74 (14)	0.020
Role conflict	46 (19)	0.003
Quality of leadership	52 (23)	< 0.001
Social support	67 (18)	0.005
Feedback	42 (20)	< 0.001
Social relations (quantity)	46 (26)	n.s.
Sense of community	74 (15)	0.008
Insecurity at work	28 (20)	n.s.
Strain (effects, outcomes)		
Job satisfaction	59 (13)	n.s.
Intention to leave	16 (21)	n.s.
General Health	70 (15)	n.s.
Personal burnout	46 (16)	n.s.
Cognitive stress	27 (17)	n.s.
Satisfaction with life	64 (17)	n.s.

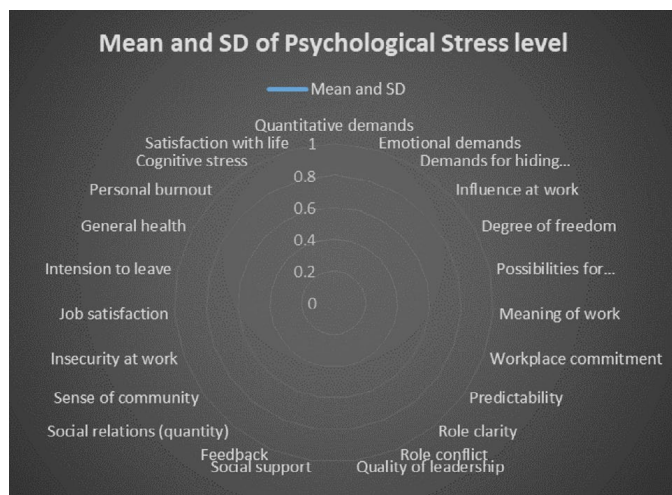


Figure 1: Mean and SD of Psychological stress level.

Table 3: Descriptive statistics of the variable, (T) value, and p-value.

Referee position	N	mean	SD	(T)	p-value
Court referee	143	15.36	0.96	4.83	0.008
Lineman referee	157	14.62	0.95		

Discussion

The present study aimed to find out how much stress football referees in the Jordanian Professional League were under because of the Covid-19 outbreak, as well as how much stress they were under according to their referee position (court referees vs line referees). The COPSOQ questionnaire survey examined the psychosocial, work stress, and strain in 300 referees. The results of the study found that more influence on account of masses' absence was reported at the workplace as they felt no meaning in life. Moreover, the participants reported there was an increased ambiguity with reference to role clarity. These study findings are consistent with Aguirre-Loaiza et al. (2020), which reported

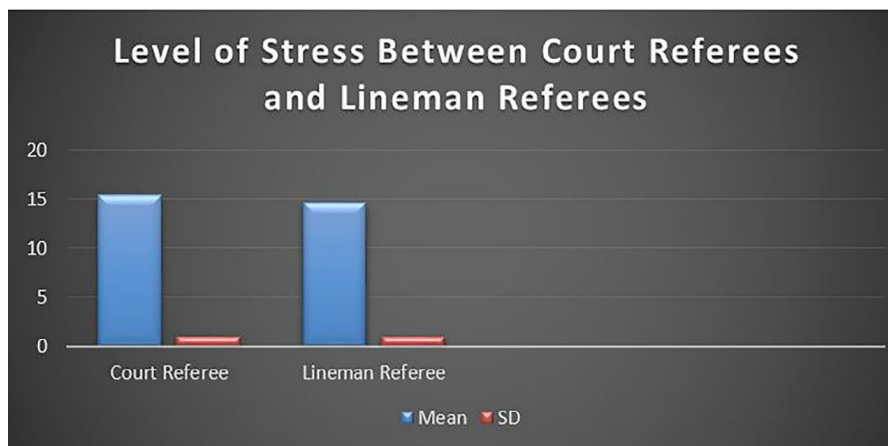


Figure 2: Level of Stress between Court Referees and Lineman Referees.

that role conflict among Colombian football referees was a more common psychological impact. Psychological stress had an impact on the general health of referees. These results of the study are similar to the findings of Romero et al. (2021), who have studied the impact of covid-19 on the general health of health workers in Spain. The lack of support was also observed as an impact of psychological stress. Similarly, another study has reported a lack of social support as a result of psychological stress triggered by Covid-induced isolation among the students of Munich University, Germany (Schröpfer et al., 2021). This study also reported that the prevalence rate for psychological stress was 44% among students during a pandemic.

However, the participants did not report a higher tendency to leave. In brief, insecurity, and influence at work, degree of freedom, burnout, role conflict, and feedback were the least frequent dimensions of psychological stress among the referees. The findings of the study suggest that the absence of masses in the wake of the pandemic emanated loss of meaning of life, confusion about their job roles, and affected their general health.

The present study reported that the intention to leave was not prevalent among the referees. In contrast, Said, and El-Shafei (2021) have reported that the majority of the nurses (4.8%) of nurses working in Zagazig Fever Hospital (ZFH), Egypt had no intention to leave. In addition to it, Tabur et al. conducted a study in Turkey, and investigated intent to leave among registered nurses, physicians, health technicians, and paramedical staff. The study revealed that job stress contributed to an increased level of intent to leave among the participants of the study.

According to the results of the current research, average to medium levels of psychological stress was observed, indicating that the lack of spectators had neither positive nor negative effects on their performance but rather a medium degree of pressure. Those findings were in line with a study conducted by Sapolsky (1998), which found that experiencing psychological stress is not inherently harmful; rather, the severity of the stress affects one's motivation to work, and a low level of stress can lead to feelings of dread, and dreadfulness about one's job. To put it another way, the average pressure ratio allows athletes to regulate, and direct these pressures in order to service their performance, and acquire control over various conditions (Bresser, 2016). The average, and medium stress levels indicated by Martnez-Moren et al. (2020) were considered positive, and significant stresses. Additionally, many prior pieces of research have investigated the association between stress, and a variety of parameters associated with football referees, such as psychiatric issues, stress causes, decision-making capacity, and attention focus (Mirjamali et al., 2012; Neil et al., 2013; Polat et al., 2017; Kilic et al., 2018).

There is no evidence to suggest that noise from the crowds in a sports stadium is a cause of psychological stress, but we found that the study sample's physiological responses to the questionnaire were all medium in intensity. This means that participants in the study were able to cope with the absence of an audience in an acceptable way that did not lead to any reflexive behavior changes. In fact, it's quite high, and this is due to a conscious understanding of the circumstance that leads to an explanation for the lack of crowd pressure. While this is an important point, it does not reflect on the amount to which rulers are under psychological pressure. According to Suinn, (2005), in the absence of external pressure (i.e., an audience), the psychological system's responses came to a medium degree, meaning that the responses to involuntary psychological stress were positive, and weren't reflected either by disinterest or by behavior dominance which means that providing appropriate performance opportunities in terms of psychological stress is necessary.

However, from a different perspective, it can be said that the average level of psychological stress reflects an ideal degree of perception among the study sample that psychological tension is dependent on the perceptions of the individual (Bhadauriya & Tripathi, 2018), meaning that the referees realized that their tasks would not be lessened, and that their workload would not be increased if the masses were absent. A disparity in stress levels between the court referee, and the line referee may occur because the court referee has more obligations than the line referee. This might explain why the court judge referee is more stressed than the lineman referee, as well. Despite this, the researchers found that the stress levels of the court referee (3.36), and the line referee (2.63) were around average. These findings are in contrast to Aguirre-Loaiza et al. (2020) concluded that postgraduate referees had better stress control in comparison with the undergraduate referees in Spain. Among the limitations of this research are its descriptive, and just one sport was represented among the study's participants.

Conclusion

The Jordanian professional referees experienced modest degrees of psychological stress as a consequence of COVID-19's mandatory absence from stadiums; rather, this moderate level of stress is required for them to do their tasks. This demonstrates the referees' ability to carry out their arbitration duties without being distracted by the public. Because the Jordanian Federation has training programs, and a number of very experienced referees who help referees with less experience, these officials are better able to deal with tough situations.

References

- Aguirre-Loaiza, H., Holguín, J., Arenas, J., Núñez, C., Barbosa-Granados, S., & García-Mas, A. (2020). Psychological characteristics of sports performance: Analysis of professional, and semiprofessional football referees. *Journal of Physical Education, and Sport*, 20(4), 1861-1868. DOI:10.7752/jpes.2020.04252.
- Baştuğ G., Duman, S, Akçakoyun F & Karadeniz F. (2016). Football referees; stress, self-confidence, decision-making Futbolhakemlerinde; stres, özgüven, kararverme. *Journal of Human Sciences*, 13(3), 5399-5406. DOI:10.14687/jhs.v13i3.4213.
- Bhadauriya B & Tripathi R, (2018). Stress management technique for athletes during sports: A critical review. *Journal of Drug Delivery, and Therapeutics*, 8(5-s):67-72. DOI <https://doi.org/10.22270/jddt.v8i5-s.1956>.
- Bressert, S. (2016). The Impact of Stress. *Psych Central*. Retrieved on March 2, 2017, from <https://psychcentral.com/lib/the-impact-of-stress>.
- Gencay, S. (2009). Magnitude of psychological stress reported by soccer referees. *Social Behavior, and Personality: an international journal*, 37(7), 865-868; DOI: <https://doi.org/10.2224/sbp.2009.37.7.865>.
- Johansen, B. T & Haugen, T. (2013). Anxiety level, and decision-making among Norwegian top-class soccer referees. *International Journal of Sport, and Exercise Psychology*, 11(2), 215-226; DOI: <https://doi.org/10.1080/1612197x.2013.773665>.
- Kiliç, Ö, Aoki H, Goedhart E, Häggglund M, Kerkhoffs GM, Kuijter PP, Waldén M, & Goutteborge V, (2018). Severe musculoskeletal time-loss injuries, and symptoms of common mental disorders in professional soccer: a longitudinal analysis of 12-month follow-up data. *Knee surgery, sports traumatology, arthroscopy*, 26(3):946-54. DOI: <https://doi.org/10.1007/s00167-017-4644-1>.

- Martínez-Moreno, A., Ibáñez-Pérez, R & Sánchez-Roca, C. (2020). Leadership, stress, and burnout among basketball referees. DOI: <https://doi.org/10.14198/jhse.2021.161.08>.
- Mirjamali E, Ramzaninezhad R, Rahmaninia F & Reihani M. (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; DOI: 10.5829/idosi.wjss.2012.6.4.1147.
- Neil R, Bayston P, Hanton S & Wilson K. (2013). The influence of stress, and emotions on association football referees' decision-making. *Sport & Exercise Psychology Review*, 9(2), 22-41.
- Nübling, M., Stöbel, U., Hasselhorn, H. M., Michaelis, M., & Hofmann, F. (2005). Methoden zur Erfassung psychischer Belastungen. Erprobung eines Messinstrumentes (COPSOQ).
- Polat E, Sonmezoglu U & Yalcin HB, (2017). Psychological Violence, and Pressure Activities Experienced by Football Referees. *Sport Journal*, 20; 1:1-3.
- Romero, C. S., Delgado, C., Catalá, J., Ferrer, C., Errando, C., Iftimi, A., & Otero, M. (2022). COVID-19 psychological impact in 3109 healthcare workers in Spain: The PSIMCOV group. *Psychological medicine*, 52(1), 188-194. <https://doi.org/10.1017/s0033291720001671>.
- Said, R. M., & El-Shafei, D. A. (2021). Occupational stress, job satisfaction, and intent to leave: nurses working on front lines during COVID-19 pandemic in Zagazig City, Egypt. *Environmental Science, and Pollution Research*, 28(7), 8791-8801. DOI: <https://doi.org/10.1007/s11356-020-11235-8>.
- Sapolsky, RM (1998). *Why zebras do not get ulcers: An updated guide to stress, stress-related diseases, and coping*. W.H. Freeman, and Company: New York.
- Schröpfer, K., Schmidt, N., Kus, S., Koob, C., & Coenen, M. (2021). Psychological stress among students in health-related fields during the COVID-19 pandemic: results of a cross-sectional study at selected Munich universities. *International journal of environmental research, and public health*, 18(12), 6611. DOI: <https://doi.org/10.3390/ijerph18126611>.
- Sors F, Grassi M, Agostini T & Murgia M (2020). The sound of silence in association football: Home advantage, and referee bias decrease in matches played without spectators. *European Journal of Sport Science*, 1-9; <https://doi.org/10.1080/17461391.2020.1845814>.
- Suinn R, (2005). Behavioral intervention for stress management in sports. *International Journal of Stress Management*, 12(4):343. DOI:<https://psycnet.apa.org/doi/10.1037/1072-5245.12.4.343>.
- Tabur, A., Choudhury, A., Emhan, A., Mengenci, C., & Asan, O. (2022, January). Clinicians' Social Support, Job Stress, and Intent to Leave Healthcare during COVID-19. *Healthcare*, 10(2), 229. DOI: <https://doi.org/10.3390/healthcare10020229>.