EXAMINATION OF THE PANDEMIC AWARENESS LEVEL AND APPROACH TO THE PANDEMIC IN WRESTLERS

Sema Can[A ,C, D]

Hitit University, Faculty of Sport Sciences, Çorum, Turkey
ORCID: 0000-0003-1931-2226 | e-mail: semacan@hitit.edu.tr

Erkan Demirkan[A, D]

Hitit University, Faculty of Sport Sciences, Çorum, Turkey
ORCID:0000-0002-6243-8062

Mehmet İsmail Tosun[A, B]

Hitit University, Faculty of Sport Sciences, Çorum, Turkey
ORCID: 0000-0003-3158-3972

Mustafa Arıcı[A, B]

Hitit University, Faculty of Sport Sciences, Çorum, Turkey
ORCID: 0000-0002-6459-8326

[A] Study Design; [B] Data Collection; [C] Statistical Analysis; [D] Manuscript Preparation; [E] Funds Collection

Abstract

Study aim: Wrestling involves a high risk of transmission in terms of Covid-19 as it is performed using close one-to-one physical contact. This field research study examined wrestlers' approach to and awareness levels of the pandemic.

Method: The study sample consists of 214 male wrestlers aged 19.15 ±1.78 years who participated in the U-23 Turkish National Freestyle Wrestling Championship. The data was collected using a personal information form and the Pandemic Awareness Scale. The statistical analysis consisted of an independent sample t-test, descriptive statistics, and a One-Way ANOVA test for multi-group comparison.

Results: Non-smokers and the wrestlers who complied with the precautions had statistically higher awareness score averages ($p < 0.05$). A statistically significant relationship between awareness scores and variables, including education level, being a national athlete, being diagnosed with Covid-19, losing a first-degree relative to Covid-19, having been vaccinated, and the number of vaccine doses was not found ($p > 0.05$).

Conclusion: The study findings indicate that the level of awareness of the pandemic is high among non-smokers and wrestlers who complied with the necessary precautions.

Key words: athlete, awareness, coronavirus, wrestling

Introduction

Wrestling, a sport deeply rooted in the Olympic tradition, has gained popularity worldwide for centuries. It is a complex combat sport consisting of two rounds with 30 s breaks that requires close one-on-one contact with the opponent. Wrestling also involves many technical and tactical elements, high-level attacks, and defensive maneuvers, and wrestlers often need to test their submaximal and maximal physiological limits (Demirkan et al., 2015; Pedro & Martins, 2017). Wrestlers infected with Covid-19 who participate in conditioning training and competition pose a disease-spreading risk because of the athletes' close and intense physical contact and exertion (Nag, 2021; Wrestling, 2023). Considering these factors, wrestling was significantly affected by the Covid-19 pandemic, which emerged in Wuhan, China (Davidson et al., 2020; Ningsih & Jatmiko, 2021). The close physical contact in wrestling made it difficult to employ the necessary precautions to fight Covid-19 infections (Wrestling, 2023). The World Health Organization reported that hundreds of thousands of people died due to the epidemic worldwide (WHO, 2023). The level of awareness of the pandemic is an important issue in protecting wrestlers' health. This awareness involves understanding the severity of the epidemic and the ways the virus is transmitted. In addition, being knowledgeable about the awareness levels of Covid-19 in wrestlers may provide the necessary precautions to protect these athletes from other epidemic diseases occurring in the future. A search of the literature related to sports and pandemics revealed that most studies showed that subjects experienced fear, stress, anxiety, and worries about contracting the coronavirus (Çetin & Kumartaşlı, 2022; Harper et al., 2021; Makarowski et al., 2022; Türk, 2023; Yıldırım & Şahin, 2023; Yıldız et al., 2021). To the best of our knowledge, no study in the literature related to the awareness of the pandemic in wrestlers exists. This study aimed to examine the approaches and awareness levels regarding Covid-19 of wrestlers participating in the U-23 Freestyle Wrestling Turkey Championship in January 2022.

Material and methods

Subjects

The study consisted of male wrestlers (n = 550) who participated in the U-23 Turkey Freestyle Wrestling Championship, organized by the Turkish Wrestling Federation in January 2022 in Çorum. Exactly 214 wrestlers participated in this study and filled in Covid-19 awareness questionnaires. Ethical approval was obtained from Hitit University's Non-interventional Research Ethics Committee. The study was conducted according to the Declaration of Helsinki.

Study procedure

The data were obtained using a personal information form and the Pandemic Awareness Scale, both of which were completed by all wrestlers involved in the study.

Personal information form

This form developed by the researchers included demographic features such as age, height, body mass, training age, weight category, smoking status, education level, and whether or not the individuals were national athletes. The questionnaire included several questions related to the Covid-19 pandemic, such as whether the

wrestlers had previously been diagnosed with Covid-19, had previously been vaccinated, the number of vaccine doses, and compliance with preventive measures. All data were obtained based on the self-reporting provided by the respondents.

Pandemic Awareness Scale

The Pandemic Awareness Scale, the validity and reliability studies of which were conducted by Arpaci et al. (2022), is a scale with a high internal consistency reliability ($α = 0.89$); the results of the explanatory factor analysis are between "strongly disagree (1)" and "strongly agree (5)". It has a five-point Likert-type feature ranging from 9 to 45; a higher score indicates that the individual has a higher level of awareness about pandemic outbreaks.

Statistical analysis

Descriptive statistics were presented as mean, standard deviation, minimum–maximum, frequency, and percentage. Normal distribution analysis was checked with the Shapiro–Wilk test and the Kolmogorov–Smirnov test for all variables. The independent sample t-test was used for compare the two independent groups. One-way ANOVA tests were used for multi-group comparisons. The Scheffe test was used to determine the differences between the groups, and the significance level was determined as $p < 0.05$. The thresholds for effect size statistics were as follows: <0.20 = trivial; $0.20–0.59$ = small; $0.6–1.19$ = moderate; $1.2–1.99$ = large; and $≥2.0$ = very large (Hopkins et al., 2009).

Results

Table 1. Descriptive characteristics of the athletes.

Variables (n = 214)	Mean ± SD	Minimum	Maximum
Age (year)	19.15 ±1.78	18	23
Body height (cm)	176.21 ±9.83	173	197
Body mass (kg)	80.29 ±16.77	55	127
Training age (year)	8.10 ±2.74	2	15
Weight category (kg)	–	57	125

Table 1 presents the mean values related to the demographic features of the wrestlers who participated in the study. According to the data, the values are the following: age: 19.15 ±1.78; body height: 176.21 ±9.83 cm; body mass: 80.29 ±16.77; training age: 8.10 ±2.74; and weight: 57–125 kg.

Table 2. T-test results of the awareness levels of the athletes.

Variables (n = 214)		Awareness score			
	f (%)	Mean ±SD	t	p	Cohen's d
Smoking status					
Yes	24 (11.2)	30.00 ±4.08	−2.068	0.040*	−0.472
No	190 (88.8)	32.08 ±4.70			
International status					
Yes	97 (45.3)	31.71 ±4.95	−0.382	0.703	−0.053
No	117 (54.7)	31.96 ±4.45			
Education level					
High school	136 (63.5)	31.56 ±3.93	−0.450	0.503	−0.099
University	78 (36.5)	32.01 ±5.07			
Covid-19 diagnosis					
Yes	70 (32.7)	32.51 ±4.82	1.462	0.145	0.210
No	144 (67.3)	31.52 ±4.58			
Vaccination status					
Yes	161 (75.2)	31.85 ±4.66	0.028	0.978	0.004
No	53 (24.8)	31.83 ±4.75			
First-degree relatives lost due to Covid-19					
Yes	12 (5.6)	30.42 ±3.20	−1.090	0.277	−0.370
No	202 (94.4)	31.93 ±4.74			

*p < 0.05

According to "smoking status", the awareness scores for non-smoker wrestlers were statistically higher than for the wrestlers who smoked (p < 0.05) (Table 2). According to the "International status", "education level", "vaccination status", and "losing a first-degree relative due to Covid-19" variables, there was no statistically significant difference in the awareness scores (p > 0.05) (Table 2).

Table 3. ANOVA test results of the awareness levels of the athletes.

Adapting to the precautions		Awareness score		p
	f (%)	Mean ±SD	F	(post hoc)
Yes (1)	98 (45.8)	33.47 ±3.71		
No (2)	79 (36.9)	29.96 ±4.78	13.879	0.000 (1 > 2)*
Partially (3)	37 (17.3)	31.57 ±5.26		
Number of vaccine doses				
0	53 (24.8)	31.83 ±4.75		
1	32 (15.0)	31.97 ±4.36	0.013	0.987
2	129 (60.3)	31.82 ±4.75		

*p < 0.05: Scheffe test

According to the "adapting to the precautions" variable, a statistically significant difference was found in the awareness level (p < 0.05). In investigating the differences between the groups regarding the answer to the question "Are you adapting to the precautions?", it was observed that the scores of the wrestlers who answered "Yes" were statistically higher than the scores of those who responded "No" (p < 0.05). In terms of the number of vaccine doses, no statistically significant difference between awareness scores was observed (p > 0.05) (Table 3).

Discussion

Wrestling is a combat sport requiring intense physical one-on-one contact. Because of the compulsory contact involved in wrestling, it is essential to consider the number of wrestlers affected by Covid-19 and the protective precautions taken, such as being vaccinated, the number of doses, and the athletes' awareness level. This study examined the approaches and awareness levels of elite wrestlers concerning Covid-19. Our study findings indicate that 32.7% (n = 70) of the wrestlers were diagnosed with Covid-19. In a study by Karakuş et al. (2022), the authors stated that of the 150 athletes in individual and team sports, 43.3% (n = 65) were diagnosed with Covid-19. Based on these findings, it could be said that approximately one-third of athletes were diagnosed with Covid-19. In addition, this study's findings show that the pandemic awareness of wrestlers diagnosed with Covid-19 was relatively higher compared to those not diagnosed ($p > 0.05$) (Table 2). These findings could be due to the late period of the pandemic observed (January 2022), and the normalization process was slowly returning to sporting events. Additional studies (Carnevale Pellino et al., 2022; Makarowski et al., 2020; Makarowski et al., 2022; Üngür & Karagözoğlu, 2021) investigated the psychological stress, anxiety, and changes in life habits brought on by the Covid-19 pandemic. In one of these studies, Makarowski et al. (2022) reported that the stress levels in elite athletes from Poland, Slovakia, and Romania during the fourth wave of the pandemic were not higher than during the pre-pandemic period. In a related study, Makarowski et al. (2020) revealed that the perceived psychological stress in combat athletes during the Covid-19 pandemic did not increase compared to the pre-pandemic period. The authors reported that the lack of increased perceived psychological stress could be due to the postponement of competitions during this process. In another study, Üngür and Karagözoğlu (2021) indicated that personality traits could have impacted the anxiety levels in athletes during the pandemic. In a review study conducted by Carnevale Pellino et al. (2022), the authors reported that, although all study findings showed that perceived psychological stress and anxiety were higher in athletes during the Covid-19 pandemic, most of the athletes were not affected by the lockdown restrictions. Based on these results, a possible explanation could be that the personality traits of these athletes could have had a significant impact on whether or not individuals took measures to protect themselves against the disease. Another key factor in our study was smoking status. The findings indicate that wrestlers who did not smoke had a statistically higher awareness score of Covid-19 than those who smoked ($p < 0.05$) (Table 2). Doğan et al. (2023) also reported a relationship between the fear of catching Covid-19 and smoking. The explanation for this finding could be related to the fact that the respiratory system is directly affected by both Covid-19 and smoking. For this reason, we assumed that a smoker would have lower awareness than a non-smoker because they would be under the impression that the respiratory system was already affected negatively by cigarette smoke. Many of the wrestlers (45.3%; n = 97) involved in our study have participated in international competitions. However, whether they participated in international competition or not was inconsequential; the findings show that all wrestlers had similar awareness scores for Covid-19 ($p > 0.05$) (Table 2). Mert (2023) reported that no significant difference was found between the pandemic awareness of athletes participating in international tournaments and those who did not, which supports our findings. Another variable was the educational status of the wrestlers. Our findings show no significant differences among wrestlers of varying educational backgrounds ($p > 0.05$) (Table 2). While investigating the literature related to educational status, contrasting findings were found. Karakuş et al. (2022) stated that no statistically significant differences were observed. However, Alkan (2022) reported a significant difference between education level and Covid-19 awareness scores in adult individuals. The author revealed that individuals with

lower education levels more prominently showed lower levels of contagion prevention awareness than those with university or higher education degrees.

Different opinions have been put forward following the discovery of a vaccine combatting Covid -19. One of these suggested that vaccination was an essential way to avoid the detrimental effects of Covid-19. Specifically, vaccinating older adults was considered a necessary precaution. However, a contrasting opinion—that the vaccination was detrimental to human health—resulted in many people refusing vaccination (Baramacheva, 2022). The current study findings show that 75% of the wrestlers (n = 161) were vaccinated; however, only 60% (n = 129) had received two doses of the vaccine (Table 2). Besides vaccination status and the number of doses received, the findings do not show statistically significant differences in the Covid-19 awareness scores among the wrestlers observed (p > 0.05) (Tables 2–3).

Another interesting finding in this study concerned wrestlers who had lost first-degree relatives due to Covid-19. The findings show that their Covid-19 awareness scores were not different compared to those who had not lost a first-degree relative (p > 0.05) (Table 2). The fear of catching Covid-19 could have led to changes in their attitudes and behaviors, and they took preventive precautions against the disease. It was reported that this awareness could be related to the fear of Covid-19 (Kurtuluş & Düşünceli, 2021). Haleem et al. (2020) stated that the fear and panic caused by the pandemic decreased with the advent of rules such as social distancing and hygiene precautions. This led to an increase in pandemic awareness, resulting in more compliance with disease precautions. In addition, the increase in Covid-19 awareness may have ensured a process of adapting to precautions that decreased the uncertainty about access to knowledge, thus preventing chaos. Our study findings indicate that the wrestlers who considered the precautions related to Covid-19 and who answered "Yes" in response to the question about "adapting to the precautions" had higher awareness scores than those responding in the negative (p < 0.05) (Table 3). The possible explanation is that the fear of being diagnosed with Covid-19 caused the wrestlers to take precautions against the pandemic; it also ensured a strong pandemic awareness. Rowe et al. (2022) reported that athletes acted with an awareness of the possible life changes resulting from the pandemic's devastating effect. Several other studies (Karataş, 2020; Kurtuluş & Düşünceli, 2021) emphasized that an increased awareness, together with the knowledge that people possessed about the virus during the pandemic process, had caused individuals to experience anxiety and fear about protecting their health; therefore, they obeyed social distancing rules and followed hygienic precautionary measures such as wearing masks and constant hand-washing.

Limitations

The study was conducted approximately two years after the first cases of Covid-19 had begun to appear. The number of cases during this period decreased, and the restrictions had already started to lessen in Turkey. The study was conducted on athletes practicing wrestling, which requires one-to-one close contact. Therefore, this aspect of the study can be considered positive.

Conclusion

When considering the maximum awareness score of 45, the study findings indicate the wrestlers have a moderate level of awareness about Covid-19. In addition, the study findings show that the awareness scores were higher in wrestlers who did not smoke and those who acted according to pandemic precautions. This is an important study that determines the pandemic awareness, attitudes, and behaviors of wrestlers during a pandemic

period. Therefore, the findings could help increase athletes' awareness about future epidemics and the necessary precautions.

References

Alkan, E. (2022). Determination of coronavirus (Covid-19) awareness level in individuals over 18 years of age living in a district. Karabük University Institute of Graduate Programs Department of Nursing Science (Master's thesis).

Arpacı, I., Seong, M., & Karataş, K. (2022). Pandemic awareness scale (PAS): Evidence of validity and reliability in a Turkish sample during the COVID-19 Pandemic. *Trends in Psychology*, 30(2), 316–327. https://doi.org/10.1007/s43076-021-00113-y

Baramacheva, E. (2022). Vaccination in athletes during the Covid-19 crisis: A qualitative approach [Master's Thesis]. https://ir.lib.uth.gr/xmlui/bitstream/handle/11615/60959/26330.pdf?sequence=1

Carnevale Pellino, V., Lovecchio, N., Puci, M. V., Marin, L., Gatti, A., Pirazzi, A., Negri, F., Ferraro, O. E., & Vandoni, M. (2022). Effects of the lockdown period on the mental health of elite athletes during the COVID-19 pandemic: A narrative review. *Sport Sciences for Health*, 18(4), 1187–1199.

Çetin, K., & Kumartaşlı, M. (2022). The effect of the anxiety of getting a new type of coronavirus in team sports on the awareness: The case of the Mediterranean Regio. *Gaziantep University Journal of Sport Sciences*, 7(4), 482–494.

Davidson, N. P., Du, J., & Giardina, M. D. (2020). Through the perilous fight: A case analysis of irüssional wrestling during the COVID-19 pandemic. *International Journal of Sport Communication*, 13(3), 465–473.

Demirkan, E., Koz, M., Kutlu, M., & Favre, M. (2015). Comparison of physical and physiological profiles in elite and amateur young wrestlers. *The Journal of Strength & Conditioning Research*, 29(7), 1876–1883.

Doğan, R., Güreş, E. E., Çıkırıkçı, E. H. K., İlhan, M., Çolak, H., & Çolak, M. (2023). Determination of COVID-19 fear and healthy lifestyle behaviors in faculty of health sciences students: A cross-sectional. İzmir Katip Çelebi University Faculty of Health Science Journal, 8(1), 7–14.

Haleem, A., Javaid, M., Vaishya, R., & Deshmukh, S. G. (2020). Areas of academic research with the impact of COVID-19. *The American Journal of Emergency Medicine*, 38(7), 1524–1526.

Harper, C. A., Satchell, L. P., Fido, D., & Latzman, R. D. (2021). Functional fear predicts public health compliance in the COVID-19 pandemic. *International Journal of Mental Health and Addiction*, 19(5), 1875–1888. https://doi.org/10.1007/s11469-020-00281-5

Hopkins, W.G., Marshall, S. W., Batterham, A. M., Hanin, J. (2009). Progressive statistics for studies in sports medicine and exercise science. *Med Sci Sport Exerc*, 41(1), 3–12.

Karakuş, K., Aksoy, Y., & Çakıcı, H. A. (2022). The relationship between athletes' coronavirus (covid-19) fears and awareness. Physical Education and Sport Sciences Journal, 16(3), 258–268.

Karataş, Z. (2020). Social impacts of COVID-19 pandemic, change and empowerment. *Turkısh Journal of Socıal Work Research (TJSWR)*, 4(1), 3–17.

Kurtuluş, E., & Düşünceli, B. (2021). Phobia (fear) of Covid 19, awareness of Covid-19 and levels of general belongingness. Üsküdar University Journal of Social Sciences (JOSOC), 13, 451–485.

Makarowski, R., Piotrowski, A., Predoiu, R., Görner, K., Predoiu, A., Mitrache, G., Malinauskas, R., Bochaver, K., Dovzhik, L., & Cherepov, E. (2020). Stress and coping during the COVID-19 pandemic among martial arts athletes–a cross-cultural study. *Archives of Budo*, 16, 161–171.

Makarowski, R., Predoiu, R., Piotrowski, A., Görner, K., Predoiu, A., Oliveira, R., Pelin, R. A., Moanţă, A. D., Boe, O., & Rawat, S. (2022). Coping Strategies and perceiving stress among athletes during different waves of the COVID-19 Pandemic-Data from Poland, Romania, and Slovakia. *Healthcare*, 10(9), 1770.

Mert, D. (2023). Evaluation of Coronavirus (COVID-19) Awareness in Underwater Hockey. Marmara University Exercise and Movement Science. (Master's thesis).

Nag, U. (2021). Freestyle wrestling: Rules, scoring, and all you need to know. Olympics.com. https://olympics.com/en/news/what-how-freestyle-wrestling-style-rules-scoring-techniques-olympics

Ningsih, H. P., & Jatmiko, T. (2021). Identifikasi kondisi fisik terhadap atlet gulat putra surabaya wrestling club pada masa pandemi covid-19. *Jurnal Prestasi Olahraga*, 4(10), 96–104.

Pedro, S. D. G., & Martins, P. (2017). Engagement and injuries in wrestling athletes. *International journal of wrestling science*, 7(1–2), 1–8. https://doi.org/10.1080/21615667.2017.1330906

Rowe, D. C., Winkelmann, Z. K., Arent, S. M., Arent, M. A., Chandler, A. J., Uriegas, N. A., & Torres-McGehee, T. M. (2022). A qualitative report of the perceptions of the COVID-19 pandemic from collegiate student-athletes. *AIMS Public Health*, 9(2), 357.

Türk, B. (2023). Investigation of continuous anxiety levels of wrestling athletes before the non-contact training within the scope of new type of corona (covid-19) irüs measures. *International Journal of Social Sciences Academy*, 5(11), 136–147.

Üngür, G., & Karagözoğlu, C. (2021). Do personality traits have an impact on anxiety levels of athletes during the COVID-19 pandemic? *Current Issues in Personality Psychology*, 9(3), 246–257.

WHO Coronavirus (Covid-19) Dashboard (2023). Retrieved 28 August 2023, from https://covid19.who.int

Wrestling-News, Athletes, Highlights & More. (2023). Olympics.com. Retrieved 15 April 2023, from https://olympics.com/en/sports/wrestling/

Yıldırım, A., & Şahin, M. O. (2023). Investigation of concerns of conceiving Covid-19 of swimmers attending summer sports school. *Gaziantep University Journal of Sport Sciences*, 8(1), 44–56.

Yıldız, A. B., Nilüfer, Ç., & Doğu, G. A. (2021). Investigation of athletes' anxiety levels of novel coronavirus (Covid-19) according to some variables. *Gazi Journal of Physical Education and Sports Sciences*, 26(4), 453–464.