Relationship Between the Length of an Active Wrestling Career with Selected Attitudes and Behavior Caused by the Covid-19 Virus Pandemic

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ABSTRACT

The main aim of this paper is manifested in the hypothesis that there is a statistically significant correlation between the length of an active wrestling career and selected attitudes and behaviours caused by the COVID-19 virus pandemic. The sample of respondents (N=131) consists of international wrestlers (average age 22.32±5.08 years) from all competition categories (seniors, senior juniors U23, juniors and cadets). The collected survey data were systematized based on obtained answers and numerical values and according to the instructions for interpretation of answers analysed with part frequencies and descriptive statistics. Correlation analysis proved statistically significant negative association (r = - 0,19) between the length of an active wrestling career and the behaviour of wearing a protective mask during the COVID-19 virus pandemic. Observing all age groups, attitudes indicate concern about the infection of acquaintances, and the behaviour of wrestlers emphasizes the importance of washing hands, wearing masks, and using disinfectants. Wrestlers are also aware of the dangers of the virus for their careers and are informed and follow the instructions of experts.

Keywords: combat sport; sport and COVID-19; pandemic influence

INTRODUCTION

The coronavirus disease (COVID-19) has affected all sectors of the global economy, but some have been affected more than others. The sports sector was particularly affected by the COVID-19 crisis in a way that has not been seen before (Ratten, 2020) and had a great impact on the training and competition process for athletes, especially in contact sports such as wrestling (Gentile et al., 2021). According to the latest data from the World Health Organization (WHO), the disease caused almost six and a half million deaths (WHO, 2022). The number is certainly not small and

insignificant and affects both everyday life and athletes. A large number of people become infected and later successfully overcome the virus, but there is also a large number of people who later have health problems after overcoming the disease. This is especially evident in fatigue, insomnia, decreased endurance, poorer appetite (as evidenced by loss of taste and smell) and other side effects of the disease, which have a great impact on athletes (Parm, Aluoja, Tomingas and Tamm et al., 2021). Also, participating in competitions during the pandemic is more stressful for athletes in combat sports (Gentile et al., 2021) due to the knowledge related to the transmission of the virus through close mutual contact at a distance of up to one and a half meters or two. Wrestling is a sport dominated by a close fight between two competitors or training partners and certainly belongs to the risky COVID-19 sports, especially when you look at the fact that the sport takes place indoor, and the contact between the wrestlers is extremely close. It is also a very important fact that in a wrestling match, due to the nature of the sport, it is not possible to use any protective equipment. Researchers who dealt with the impact of the COVID-19 pandemic on the way of training under the conditions prescribed by individual governments tried to see if it is possible to train in wrestling under these specific conditions without losing too much of the wrestler's form and physical condition. Thus, Sung et al. (2021) observed the possibility of using electrical muscle stimulation (EMS) equipment in the training of wrestlers in order to improve efficiency in training that had to adapt to the conditions of the COVID pandemic, and Herrera-Valenzuela et al. (2020) developed a HIIT (high intensity interval training) program that martial arts athletes of sports can be used for training at home, because such trainings were only possible at the time of the first lock-down, in order to preserve muscle mass and physical condition.

The main aim of this paper is to test whether there is a correlation between the length of an active wrestling career and selected attitudes and behaviours caused by the COVID-19 virus pandemic.

MATERIALS AND METHODS

Respondents sample

The sample of respondents (N=131) consists of international wrestling national team' members (average age 22.32 ± 5.08 years) from all age categories: seniors, senior juniors (U23), juniors and cadets. The respondents are participants of the international preparatory camp in Poreč in 2021, they come from 19 countries from Europe and five countries outside of Europe.

Measuring instruments and variables

Each respondent voluntarily filled out a survey questionnaire that contained basic information about the respondent, as well as specific questions that consisted of the length of an active wrestling career and questions about the current COVID-19 pandemic.

The first question is directly related to infection with the virus, i.e. whether the respondent recovered from COVID-19 and if so, what were the symptoms of the disease (possible answers: NO, I did not recover; YES, I recovered; YES, asymptomatic COVID-19; YES, mild symptoms; YES, severe symptoms).

The second question is related to the vaccine with the question *Have you received the vaccine against COVID-19?* with possible answers: YES, I have received it; NO and I do not plan to get vaccinated in the near future; NO, but I plan to get vaccinated in the near future.

The next set of questions were taken from the already standardized questionnaire The COVID-19 Anxiety Scale (Jokić, Korajlija and Mikac, 2020) and related to the self-assessment of anxiety caused by COVID-19, and the second set of questions were taken from the already standardized questionnaire Swine Flu Anxiety Items scale (Wheaton et al., 2020). The questionnaire is validated and reliable and as such can be used for related research purposes. The COVID-19 anxiety scale consists of 5 items with the questions: *How worried are you about COVID-19?; How likely is it that you could get infected with COVID-19?; How likely is it that someone you know could contract COVID-19?; If you get infected with the coronavirus, how worried are you that the disease could be serious? and How much, in your opinion, is this virus more dangerous than the flu virus?* Respondents chose answers scored according to a scale from zero to four (0 – does not apply to me at all; 1 – does not apply to me to some extent; 2 – neither applies nor does it apply to me; 3 – somewhat applies to me; 4 – completely applies to me).

After this set of questions, respondents filled in new items from the COVID-19 Safety Behaviour Checklist (CSBC) (Jokić, Korajlija and Mikac, 2020), which consists of seven questions related to the behaviour of respondents directly related to COVID-19. A set of questions that were related to behaviours related to COVID-19: *I wash my hands more often and more thoroughly than usual; I avoid places with a lot of people; I follow news related to the spread of COVID-19 more often; I wear a protective mask; I use hand sanitizers; I avoid shaking hands with other people; I avoid people who look sick*. Respondents chose answers scored according to a scale from zero to four (0 – no at all; 1 – most likely no; 2 – neither yes, nor no; 3 – most likely yes; 4 – definitely yes.

Data analysis

The collected survey data were systematized on the basis of the received answers and numerical values and, according to the instructions for the interpretation of the answers, analysed with questions frequencies, descriptive statistics and correlation analysis (The Statistica v.13.05.0.17 – TIBCO software Inc). Indicators in descriptive statistics are arithmetic mean, standard deviation, frequency and percentage. Correlation analysis was performed and interpreted with Pearson's correlation coefficient.

RESULTS

For each question, frequencies, percentages, arithmetic mean and standard deviation (Table 1) will be presented. Also presented are the results of the correlation analysis observing the length of the active wrestling career variable (Table 2).

Table 1. Descriptive indicators and frequencies of attitudes towards the COVID-19 virus

QUESTION	ANSWER	N	%	$\bar{x}$	SD
How worried are you about COVID-19?	It doesn't apply to me at all	47	35.9	1.05	0.93
	Somehow it doesn't apply to me	36	27.5		
	It neither applies nor does it apply to me	42	32.0		
	It applies to me somewhat	6	4.6		
	It totally applies to me	0	0		
	Total	**131**	**100**		
How likely is it that you could get infected with Covid-19?	It doesn't apply to me at all	23	17.6	1.76	1.17
	Somehow it doesn't apply to me	29	22.1		
	It neither applies nor does it apply to me	45	34.4		
	It applies to me somewhat	24	18.3		
	It totally applies to me	10	7.6		
	Total	**131**	**100.0**		
How likely is it that someone you know could contract COVID-19?	It doesn't apply to me at all	13	9.9	2.23	1.32
	Somehow it doesn't apply to me	31	23.7		
	It neither applies nor does it apply to me	31	23.7		
	It applies to me somewhat	25	19.1		
	It totally applies to me	31	23.7		
	Total	**131**	**100.0**		
If you get infected with the coronavirus, how worried are you that the disease could be serious?	It doesn't apply to me at all	33	25.2	1.37	1.04
	Somehow it doesn't apply to me	36	27.5		
	It neither applies nor does it apply to me	46	35.1		
	It applies to me somewhat	13	9.9		
	It totally applies to me	3	2.3		
	Total	**131**	**100.0**		

In your opinion, how much more dangerous is this virus than the flu virus?	It doesn't apply to me at all	26	19.85		
	Somehow it doesn't apply to me	48	36.6		
	It neither applies nor does it apply to me	33	25.2	1.45	1.07
	It applies to me somewhat	20	15.3		
	It totally applies to me	4	3.1		
	Total	**131**	**100.0**		
I wash my hands more often and more thoroughly than usual	Not at all	10	7.6		
	Most likely not	18	13.7		
	Neither yes nor no	29	22.1	2.61	1.29
	Most likely yes	30	22.9		
	Certainly yes	44	33.6		
	Total	**131**	**100**		
I avoid places with a lot of people	Not at all	33	25.2		
	Most likely not	34	26.0		
	Neither yes nor no	33	25.2	1.53	1.22
	Most likely yes	23	17.6		
	Certainly yes	8	6.1		
	Total	**131**	**100**		
I follow news related to the spread of COVID-19 more often	Not at all	45	34.4		
	Most likely not	20	15.3		
	Neither yes nor no	40	30.5	1.46	1.32
	Most likely yes	13	9.9		
	Certainly yes	13	9.9		
	Total	**131**	**100**		

I'm wearing a protective mask	Not at all	11	8.4	2.61	1.30
	Most likely not	17	13.0		
	Neither yes nor no	28	21.4		
	Most likely yes	31	23.7		
	Certainly yes	44	33.6		
	Total	**131**	**100**		
I use hand sanitizers	Not at all	20	15.3	2.26	1.40
	Most likely not	20	15.3		
	Neither yes nor no	31	23.7		
	Most likely yes	26	19.8		
	Certainly yes	34	26.0		
	Total	**131**	**100**		
I avoid shaking hands with other people	Not at all	50	38.2	1.11	1.15
	Most likely not	39	29.8		
	Neither yes nor no	27	20.6		
	Most likely yes	8	6.1		
	Certainly yes	7	5.3		
	Total	**131**	**100**		
I avoid people who look sick	Not at all	17	13.0	2.29	1.32
	Most likely not	21	16.0		
	Neither yes nor no	28	21.4		
	Most likely yes	37	28.2		
	Certainly yes	28	21.4		
	Total	**131**	**100.0**		

Legend: N - number of subjects; $\bar{x}$ - mean value; SD - standard deviation

Table 2. Correlation analysis of indicators and frequencies of behavior according to the COVID-19 virus

QUESTION	**Wrestling career length**
How worried are you about COVID-19?	0.08
How likely is it that you could get infected with Covid-19?	0.09
How likely is it that someone you know could contract COVID-19?	-0.02
If you get infected with the coronavirus, how worried are you that the disease could be serious?	-0.1
In your opinion, how much more dangerous is this virus than the flu virus?	0.07
I wash my hands more often and more thoroughly than usual	-0.02
I avoid places with a lot of people	0
I follow news related to the spread of COVID-19 more often	-0.16
I'm wearing a protective mask	**-0.19***
I use hand sanitizers	-0.02
I avoid shaking hands with other people	0.03
I avoid people who look sick	0.1

DISCUSSION

The main goal of this work is manifested in the hypothesis that there is a statistically significant connection between the length of an active wrestling career and the chosen attitudes and behaviours caused by the pandemic of the COVID-19 virus. The highest value of the arithmetic means in the answers of the wrestling national team members related to the attitudes towards the virus COVID-19 was recorded in the question *How likely is it that someone you know could be infected with COVID-19*, where the arithmetic mean is 2.23±1.32. These answers indicate the awareness of the wrestlers and the seriousness of the pandemic and the possibility of contracting the virus and other people the athletes know. The highest value of the arithmetic means for the behaviour caused by the virus COVID-19 is identical to 2.61 (standard deviations 1.29 and 1.30) for two questions: *I wash my hands more often and more thoroughly than usual* and *I wear a protective mask*. In addition to being an indicator of the self-awareness and responsibility of wrestlers, it is also an indicator that the instructions issued by the WHO (2022) as well as the national and local instructions of professional services have reached the top wrestlers, and they adhere to them. Since pandemic in most countries protective masks must be used whenever there is potentially close contact (Cirrincione et al., 2020), especially during training and close contacts between athletes, to reduce the spread of viruses in the environment. Handwashing according to WHO handwashing guidelines during a pandemic

has a large impact on respondents. Also, the higher arithmetic mean in the question about wearing a mask indicates, apart from the awareness of wrestlers that the possibility of infection is reduced by wearing a mask, also the decisions of national headquarters about wearing masks in indoor spaces where wrestling competitions and trainings are held. Wrestlers are listening to higher national institutions instructions although it is recommended that athletes and coaches should be aware of the impact of masks. This reflects especially on sports performance and such as high-intensity aerobic exercise, where capacity or volume of training was significantly reduced when exercising without a mask (Kwon et al., 2023). Higher values of arithmetic averages were also recorded for the question *How likely is it that you could get infected with Covid-19?* (1.76±1.17) related to attitudes towards the virus, while high behaviour values were obtained for the question, *I use hand sanitizers* (2.26±1.40). The results of the correlation analysis indicate a negative correlation (r= -0.19) between the length of an active wrestling career and the behaviour related to the question *I wear a protective mask*. Although correlation is not very high it is significant, and the obtained results may be a consequence of taking one's own attitude in older age groups and refusing to wear a protective mask or wearing it only when absolutely necessary. Other questions are not statistically significantly related to the length of an active wrestling career.

CONCLUSION

Correlation analysis revealed a statistically significant negative relationship between the length of an active wrestling career and behaviour while wearing a protective mask during the COVID-19 virus pandemic. Observing all age groups, the respondents indicate concern about the infection of acquaintances, and the importance of washing hands, wearing masks and using disinfectants is emphasized in the behaviour of wrestlers. Wrestlers are also aware of the danger posed by the virus to their careers and are informed and follow the instructions of experts.

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