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Differences Between Professional and Recreational Athletes in Psychological Characteristics And Habits During the Covd-19 Pandemic

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Abstract: *This study was conducted with the aim of investigating differences between recreational and professional athletes in perfectionism, distress, coping strategies, and changes in sports activities during the COVID-19 pandemic. Participants in the study consisted of a sample of 389 professional and recreational athletes. The results of the conducted analysis indicate the existence of certain differences between the two considered groups. On average, professional athletes score higher on the perfectionism scale than recreational athletes (t=-2,92, p<,01). Also, professional athletes were on average more likely to use relaxation techniques before (t=-8,30, p<,01) and during lockdown (t=-6,20, p<,01) compared to recreational athletes. Furthermore, professional athletes estimated that on average they missed training (t=-6,52, p<,01) and sports performances more (t=-11,30; p<,01) compared to recreational athletes. On average, professional athletes report a significantly larger reduction in training compared to recreational athletes (t=4,23, p<,01). Considering our results, we think it would be beneficial to focus on this topic in future studies.*

Keywords: *coping with stress, changes in sports activities, perfectionism tendencies.*

INTRODUCTION

Since mid-March 2020, starting from the proclamation of the pandemic in Croatia and Bosnia and Herzegovina, the pandemic caused by the virus COVID-19 has affected all social life aspects. To prevent the spread of infection, quarantine, isolation, social distancing, and a reduced maximum number of people in households were introduced by prescribing protective measures. However, quarantine recognized as the best tool to prevent the spread of viruses and to protect the population (WHO, 2020), can cause detrimental mental health implications over extended periods (Hossain et al., 2020). Brooks et al. (2020) reported on the impact of uncertainty related to anticipation, isolation from loved ones, boredom, and loss of freedom on individuals' mental health.

The lockdown has impacted sports and sports events tremendously. Samuel, Tenenbaum, and Galily (2020) argue that the viral pandemic COVID-19 has imposed the most profound changes the world of sports has ever seen. In addition to the aforementioned stressors caused by the pandemic, athletes of all categories had to cope with a sudden and unexpected disruption of their daily activities (Kurdić, 2020). Measures taken in March 2020 in the Republic of Croatia included the suspension of all sports competitions and organized training, as well as the closure of gyms, sports centers, gymnasiums, and recreation centers (Kurdić, 2020). Consequently, athletes of all categories were distracted from the usual training and preparations. The cancelation of global competitions such as the Olympic and Paralympic Games also deprived some elite athletes of the opportunity to achieve long-expected success (Håkansson et al., 2021).

A sudden and unexpected interruption and change in the training schedule and the impossibility to train in an adequate environment can represent an additional psychological burden for athletes (Leguizamo et al., 2021). Besides, when the season is interrupted unexpectedly and without the athlete's own decision, as is the case during the pandemic, the transition process is considered more difficult (Stambulova et al., 2020; Stambulova et al., 2021). The change in the sports calendar has led to a situation where changes in goals, evaluation of current progress and career path, as well as attitudes toward sports life itself are required. Moreover, such changes may lead to uncertainty impacting not only career plans, professional health, and engagement (González-Hernández et al., 2021), but also personal life (Schinke et al., 2020). Facer-Childs et al. (2020) have linked such a decrease in training frequency and volume to poorer mental health status in athletes, i.e., increased levels of depression, anxiety, and stress.

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The perception of how stressful this difficult period is could also depend on the level of competition in which athletes participate. For example, Di Fronso et al. (2020) state that elite athletes experience lower stress levels and more functional psychobiosocial conditions compared to novice athletes. Similar results were reported by Clemente-Suarez et al. (2020). They found that training and competition constraints have little or minimal influence on anxiety levels among Olympic and Paralympic athletes, whereas German recreational and amateur athletes reported increased stress levels and lower training motivation (Lautenbach et al., 2020). Accordingly, Şenışık et al. (2021) have shown that athletes of all ability levels differed from nonathletes concerning their levels of depression during the pandemic. Also, Vidović (2021) has shown, using a sample of young Croats, greater stress resilience in athletes compared with nonathletes. Furthermore, elite athletes showed less burnout due to the COVID-19 crisis than recreational athletes and non-athletes (Vidović, 2021). Similarly, Iancheva et al. (2020) found that Russian and Bulgarian sports students who achieved higher rates were able to better cope with stress and generally adapt more easily to the situation. Leguizamo et al. (2020) indicated a negative relationship between coping strategies and undesirable psychological states, namely anxiety, stress, depression, and fatigue.

According to research Oliveira et al. (2015), Mouratidis et al. (2011), another characteristic that distinguishes athletes from the general population is perfectionism. This term is defined as the tendency to demand an exceptionally high or even flawless level of performance from others or from oneself, beyond what the situation requires (APA, 2022). Due to strict training schedules and in order to reduce the number of errors in competitions, athletes improve their technique through training and causing their performance more and more meticulous (Leguizamo et al., 2021). Accordingly, Bradham (2000) indicates a relationship between perfectionism and successful performance in athletes. Nevertheless, studies that have examined variations in the demonstration of perfectionism between athletes of different categorization levels have not reached unambiguous conclusions (Mehri et al., 2017; Stirling and Kerr, 2006; Shmits et al., 2022). Stirling and Kerr (2006) found no significant differences in the expression of perfectionism between groups of recreational and elite athletes, while Shmits et al. (2022) showed that higher-rated athletes had lower expression of perfectionism during hospitalization than individuals who did not participate in sports. Conversely, Hopkinson and Lock (2004) indicated higher levels of perfectionism in elite athletes compared with recreational athletes. Furthermore, Schwarz et al. (2005) found significantly higher levels of perfectionism in female athletes compared with women who do not participate in sports.

Some research (Di Fronso et al., 2020; Clemente-Suarez et al. 2020) shows that elite athletes can cope more suitable with challenging situations. Coping presents a constant alternation of behaviors and cognitive efforts to overcome internal and external demands considered too great for an individual's capabilities (Lazarus and Folkman, 2004). Although the pandemic is a major stressor for the entire population, athletes have developed better coping skills due to the high mental and physical effort required daily (Pété et al., 2020). Szczypińska et al. (2021) report on the most frequent use of cognitive and behavioral coping strategies among Polish kinesiology students and elite athletes, with the frequency of active coping and reevaluation strategies being significantly higher among elite athletes. Correspondingly, the results, gathered by the research of Pété and colleagues (2020), show that engaged and active coping methods, such as relaxation techniques, lead to lower anxiety levels in athletes and that the problems caused by the pandemic are perceived as a challenge that is more manageable to them.

Hence, we aimed to investigate whether there are differences in perfectionism, psychological distress, coping strategies and sports habits between professional and recreational athletes during the COVID-19 pandemic. Specifically, the goal of this research is to examine whether professional and recreational athletes differ in the characteristics of perfectionism and general psychological distress. Also, we want to examine whether there are differences between them given the coping strategies used and relaxation techniques before and during the pandemic. In addition, we are interested in whether they differ with regard to the change in the number of training sessions during the pandemic and the extent to which they lacked training and sports performances.

METHOD

Participants

Participants in the study consisted of a sample of 389 athletes split between two groups: recreational and professional athletes. There was 254 participants in the recreational group, aged from 14 to 70 (M=33,91, SD=11,09), with

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49,2% male and 50,8% female athletes. The group of 135 professional athletes consisted of 63,7% male and 36,3% female participants, aged from 12 to 55 years (M =22,43, SD=6,28).

Instruments

Sociodemographic characteristics. Participants answered questions about age, gender and the category and type of sport they are engaged in. Also, participants' mental, fitness and health status was assessed and they were asked questions about the use of relaxation techniques and the frequency of training before and during the pandemic.

Brief COPE. A shortened version of COPE questionnaire was used to assess the stress management strategy (*Brief COPE; Coping Orientation to Problems Experienced*; Carver, 1997). The questionnaire consists of 28 particles that are divided into two subscales: adaptive and non-adaptive coping strategies. The subscale of adaptive coping strategies consists of 16 items, and subscales of non-adaptive strategies include 12 items. The answers to the questionnaire range from 1 to 4 (1 = "I didn't do it at all", 4 = "I did it often"). The total score on the questionnaire is calculated as a linear combination of all items, while the results on the subscales are calculated by summing up the results on the corresponding items. A higher score on a particular subscale indicates more frequent use of that coping strategy. In this study, the reliability of the internal consistency type for adaptive ones is α=,78 and for non-adaptive α=,75.

DASS-21. Croatian version of the DASS-21 (Depression, Anxiety and Stress Scale; Lovibond and Lovibond, 1995) consists of 21 items and includes three subscales of 7 items: depression, anxiety and stress. The subjects were tasked with assessing on the Likert scale of 4 degrees (0 = "not at all" to 3 = "mostly or almost always"), how they felt in the past week. In this study, based on earlier literature (Zanon et al., 2021) and due to high correlations between subscales, the questionnaire was used as a unidimensional measure of general psychological distress. The results on the scale are calculated as a linear combination of responses on items, with a higher score indicating more pronounced symptoms. In this study, the reliability of the internal consistency type for the overall scale is α=,95.

Perfectionism. To assess perfectionism, the Burns scale of perfectionism was applied (Burns, 1980; Ivanov and Penezić, 2004). The scale consists of 10 5-point Likert-type items (1 = "Disagree at all", 5 = "I completely agree"). Results on the scale are calculated as a linear combination of responses on items, with a higher score pointing to more pronounced perfectionism. The reliability of the scale in this study is α=,70.

Procedure

Participants were contacted via e-mail and social networks. Participants were informed about the purpose of the research, as well as anonymity and confidentiality of the collected data. After giving consent to participate in the survey, they would be redirected to online versions of the questionnaire which they would then fill out. The online questionnaire included the measuring instruments listed earlier.

RESULTS

Descriptive data

Before statistical data analyses, the requisites for the implementation of parametric procedures were verified. The values of symmetry and flatness have been calculated, which, for the use of these statistical analyses, should be within the limit of -3 to 3 (Kline, 2011). Although the Kolmogorov-Smirnov test indicates that variable data are not distributed normally, the criteria for the flattened and symmetrical index explicitly suggest that the criteria for normality are met (Kline, 2011). Also, with a large enough sample, the models of regression analysis are robust to the impaired assumption of normality and it is possible to conduct a regression analysis, i.e. the use of planned parametric statistical procedures is justified (Schmidt and Finan, 2018). For all measured variables in the survey, descriptive data (Table 1) were calculated and presented.

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Table 1. Descriptive data on samples of recreational and professional athletes

	Recreational				Professional			
	N	M	SD	SE	N	M	SD	SE
Age	254	33.91	11.09	0.70	135	22.43	6.28	0.54
Perfectionism	254	29.84	5.92	0.37	135	31.67	5.85	0.50
DASS	254	15.57	13.48	0.85	134	15.37	14.77	1.28
Adaptive strategies	226	46.54	6.20	0.41	83	47.40	6.92	0.76
Non-adaptive strategies	226	23.54	4.57	0.30	83	24.20	5.19	0.57
Relaxation techniques (before)	254	8.49	2.81	0.18	133	11.66	3.91	0.34
Relaxation techniques (during)	254	8.30	2.78	0.17	131	10.73	4.01	0.35
Changing the number of trainings	254	-0.12	0.62	0.04	133	-0.56	1.10	0.10
Missing training	254	3.31	1.15	0.07	133	4.03	0.96	0.08
Missing performances	254	2.87	1.27	0.08	133	4.06	0.80	0.07

Table 2. Correlation table for Recreational (N=254)

	2	3	4	5	6	7	8	9	10
Age	.2**	-.09	-.05	-.05	-.04	-.07	.09	-.17**	-.05
Perfectionism	1	.28**	.16*	.28**	.02	.03	-.04	.20**	.08
DASS		1	.13	.58**	.11	.07	-.01	.12	.14*
Adaptive strategies			1	.22**	.18**	.24**	-.14*	.12	.00
Non-adaptive strategies				1	.01	.01	-.04	.10	.07
Relaxation techniques (before)					1	.78**	-.22**	.17**	.24**
Relaxation techniques (during)						1	-.11	.05	.12
Changing the number of trainings							1	-.23**	-.17**
Missing training								1	.34**
Missing performances									1

*p<.05; **p<,01

Table 3. Correlation table on a sample of professional athletes (N=135)

	2	3	4	5	6	7	8	9	10
Age	-.11	-.01	.00	.10	.02	-.03	-.06	-.23**	-.24**
Perfectionism	1	.24**	.12	.37**	-.01	-.03	.20*	.08	.20*
DASS		1	-.06	.54**	-.10	-.08	.15	.06	.07
Adaptive strategies			1	.06	.25*	29**	.08	.16	.13
Non-adaptive strategies				1	-.30**	-.39**	.14	-.08	.09
Relaxation techniques (before)					1	.86**	-.16	-.04	-.06
Relaxation techniques (during)						1	-.05	-.06	-.05
Changing the number of trainings							1	-.05	-.02
Missing training								1	.67**
Missing performances									1

*p<.05; **p<,01

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By examining the correlation of the measured variables on each of the samples (recreational and professional athletes), certain differences were noticed. In professional athletes, age is negatively correlated with missing training and performances. In recreational athletes age is negatively correlated with missing training and positively associated with perfectionism. In addition, it is noticeable that recreational athletes who miss training more are also higher on the scale of perfectionism.

Also, in recreational athletes, a decrease in the number of training sessions was associated with a lack of training and sports performances.

Non-adaptive coping strategies are insignificantly associated with use of relaxation techniques before and during lockdown in recreational, and significantly negative in professional athletes. In other words, professional athletes who are less inclined to use non-adaptive coping strategies, used relaxation techniques more before and during lockdown.

Table 4. Differences between professional and recreational athletes

	The Lewen test		t-test				
	F	p	t	Df	p	ΔM	ΔSE
Age	59.26	<.05	13.04	385.46	<.01	11.48	0.88
Perfectionism	0.22	>.05	-2.92	387.00	<.01	-1.84	0.63
DASS	0.82	>.05	0.14	386.00	>.05	0.20	1.49
Adaptive strategies	1.22	>.05	-1.04	307.00	>.05	-0.85	0.82
Non-adaptive strategies	1.08	>.05	-1.10	307.00	>.05	-0.67	0.61
Relaxation techniques (before)	24.94	<.05	-8.30	205.15	<.01	-3.17	0.38
Relaxation techniques (during)	23.61	<.05	-6.20	196.45	<.01	-2.43	0.39
Changing the number of trainings	56.60	<.05	4.23	177.25	<.01	0.43	0.10
Missing training	9.60	<.05	-6.52	312.47	<.01	-0.72	0.11
Missing performances	50.01	<.05	-11.30	372.69	<.01	-1.19	0.11

The results of the conducted analysis indicate the existence of certain differences between the two considered groups, professional and recreational athletes. Based on the results shown in Tables 1 and Table 5, it is evident that the age differences between these groups are statistically significant (t=14,04, p<,01), with recreational athletes on average being older than professional athletes. On average, professional athletes score higher on the perfectionism scale than recreational athletes *(t=-2,92, p<,01). Also, professional athletes were on average more likely to use relaxation techniques before (t=-8,30, p<,01) and during lockdown (t=-6,20, p<,01) compared to recreational athletes. Furthermore, professional athletes estimated that on average they lacked training (t=-6,52, p<,01) and sports performances (t=-11,30; p<,01) compared to recreational athletes. On average, professional athletes report a significantly larger reduction in training compared to recreational athletes (t=4,23, p<,01). No statistically significant differences between recreational and professional athletes were observed on the other examined variables.

DISCUSSION AND CONCLUSION

This study examines any potential distinctions between professional and recreational players, with a focus on the COVID-19 pandemic's effects on athletes' psychophysical condition. A few assumptions on the distinctions between competitive and recreational athletes have been confirmed. Firstly, statistically significant differences in the age of the two groups are noticeable. Namely, professional recreational are typically younger than amateur athletes. This is reasonable due to the fact that professional athletes' sports preparation and abilities start to diminish evidently during their thirties, while they usually retire even before their forties (Faulkner et al., 2008).

Contrary to estimations, there were no discernible distinctions between recreational and professional athletes regarding the stress and anxiety levels they experienced throughout the examination period as well as in terms of their coping methods.

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Nevertheless, professional athletes utilized relaxation techniques more often before and during the lockdown. Numerous studies to date have confirmed the beneficial effect of relaxation techniques on reducing anxiety and stress, blood pressure, and improving concentration, performance, and self-confidence (Vincent & Yahaya, 2012; Weinberg & Gould, 2011). Research has shown that athletes who used relaxation techniques, such as imagination, progressive muscle relaxation, and breathing techniques, achieved better sports achievements than those who did not use them (Parnabas et al., 2014), which, consequently, contributed to the education and encouragement of athletes to use them. This is also supported by the results of this research, which shows that professional athletes, significantly more than recreational athletes, used relaxation techniques before the pandemic, but also during the lockdown, i.e., during a period filled with uncertainty, changes, and stress.

According to earlier studies (Hopkinson and Lock, 2004; Schwarz et al., 2005), professional athletes showed significantly higher levels of perfectionism. The main characteristics of professional athletes are consistency, persistence, and focus on attaining the greatest results possible. They also need to constantly push past their limits. Therefore, they generally have developed a perfectionist mindset. Researchers Hewitt and Flett (1991) identified two types of perfectionism: self- and society-oriented. The first one, which is typically seen as a positive quality, refers to the athlete's efforts to reach a high degree of performance. Conversely, society-oriented perfectionism has a negative connotation since it originates from the athlete's environment (meaning parents, coaches, etc.). Here, the pressure is placed on the athlete in order to be perfect.

Considering that our study found a substantial difference between professional and recreational athletes' perfectionism, use of relaxation techniques before and during lockdown and missing training and performances, we think it would be beneficial to focus on these topics in future studies. Since the research was conducted online, there was significantly less control, thus, there is no guarantee that all participants completed it under the same conditions. Besides, the online research produces a sample with reduced representativeness alongside the uncertainty regarding the participants' identities. Moreover, only self-report scales were utilized, which increases subjectivity, and may also lead to a tendency of providing socially acceptable responses. Therefore, different research techniques and data sources are recommended for future research. Furthermore, a research nature is an association, hence, it prevents making conclusions beyond the variables' relationships. Our study aimed to document the condition of athletes during COVID-19. However, due to this fact, its ecological validity is downsized, and the generalization is limited. Therefore, we recommend repeating this examination when "returning to the old normal". Thus, that will create the opportunity to compare new results with previously obtained ones.

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