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THE IMPACT OF COVID-19 LOCKDOWNS ON PRE-COMPETITION ANXIETY LEVELS IN PROFESSIONAL AND AMATEUR ATHLETES

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Abstract:

Purpose: The purpose of this study was to investigate and compare professional and amateur athletes' pre-competition anxiety levels using a CSAI-2 scale which includes three subscales; cognitive state anxiety, somatic state anxiety and self-confidence before and after Covid-19 lockdown. The hypotheses of this research were that Covid-19 lockdown would have a significant effect on athletes' pre-competition anxiety levels.

Methods: 57 athletes (41 males, 16 females) from 10 different countries were provided with an online Competitive State Anxiety Inventory-2 (CSAI-2) questionnaire, which included 60 questions in order to collect data about athletes' cognitive state anxiety, somatic state anxiety and self-confidence levels before and after Covid-19 lockdown.

Results: It was determined that the differences between the scores of Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales of the athletes included in CSAI-2 before and after Covid-19 lockdown are found to be statistically significant ($p < 0.05$).

Conclusions: While the Cognitive state anxiety and Somatic state anxiety scores of both amateur and professional athletes increased after Covid-19 lockdown, their Self-confidence scores decreased. Their age, gender, level of education, playing an individual sport or a team sport or being an elite or non-elite athlete did not have an effect on increased pre-competition anxiety levels.

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Keywords: COVID-19, LOCKDOWNS, PRE-COMPETITION ANXIETY LEVELS, PROFESSIONAL ATHLETES, AMATEUR ATHLETES

INTRODUCTION:

The Covid-19 pandemic has brought sudden and drastic changes in people's lives. Many people have been isolated or still are isolated in their homes for months leading to a rapid decrease of social interactions. As a result - this sudden and in its majority mandatory isolation - can and already has negatively affected people's physical and mental health. Whilst everyone attempts to cope with the

negative side effects of isolation and while being forced to adapt to new more isolated and individualistic lifestyle, athletes are also being affected mentally and physically. Sports and gatherings of athletic nature have always been constructive activities. They did this by bringing society together and motivating social interactions with a common purpose. However the vast amount of positive Covid-19 tests in competition athletes in Premiere Leagues and more generally on a global scale has evidently determined that nobody can be safe from the grasp of the corona virus (Corsini *et al.*, 2020). The consequence of such determinations have resulted in numerous national and international athletic events such as the long-awaited and beloved Olympic games planned in 2020 and the European football tournament amongst others, to be delayed and potentially cancelled, over the multitude of fears that mass gatherings such as the immense crowds attracted by these global events would inevitably spread the Covid-19 virus (Mehrsafar *et al.*, 2020). Essentially this meant, that teams and individual athletes are being made to adapt to various social withdrawal measures, which are interrupting their training and preparation routines for upcoming competitions. Several recent studies have found that regardless of the sport, most athletes during the Covid-19 period have been experiencing hardships. Athletes tend to suffer from many mental health conditions at rates equal or even greater than those of the general population. However, the Covid-19 pandemic has placed an extra burden on athletes, possibly increasing their susceptibility to mental health problems (Reardon *et al.*, 2020). Attributed mainly due to lack of training during the isolation periods, being socially isolated from their family, friends and teammates, separation from daily social activities, reduced face to face interactions, fear of competitive disadvantage compared with athletes living in countries with less restrictions, and mostly the fear of reduced performance causes anxiety to the athletes in relation to their future performance during competitions (Edwards and Thornton, 2020). The most commonly experienced emotions amongst athletes were observed to be anxiety regarding future competitions as well as increased anger directly related to anxiety (Tingaz, 2020). It has been identified that the postponements and cancellations of athletic competitions accompanied with social restrictions on movement and interactions imposed by each State, have negatively affected athletes who were “unable to continue regular training schedules” (World Health Organization, 14 April, 2020). Given this alarming scenario encompassing people’s lifestyles all over the world, this paper aims to determine the effects of Covid-19 isolation on professional and amateur athlete’s pre-competition anxiety levels, as well as their somatic and cognitive symptoms related to this anxiety pre and post Covid-19 isolation. Anxiety amongst many expert definitions can be defined as a feeling of agitation resembling fear or worry. When a stressor is presented such as an exam day, a job interview or a sport competition; anxiety can be triggered. Anxiety can be described as an undesirable condition identified by stress, worries and nervousness when there is an arousal or a stressor (Weinberg and Gould, 1996). Both environmental and cognitive events that trigger stress are called stressors (Statler and DuBois, 2016). Stressors can be acute or chronic based on the duration of activation. Acute stressors are described as stressful situations that appear abruptly and lead to physiological arousal (for instance, increase in hormonal levels, increase in blood flow and cardiac output, increase in blood sugar levels, size of pupil and airway dilation etc.) (Selye, 1956). Once the situation goes back to normal, a decrease in hormonal reactions occurs to help the body return to homeostasis (resting state). However, when acute stressors become chronic in nature, they may increase the risk of developing anxiety, depression, or metabolic disorders (Selye, 1956). Spielberger (2013) defined anxiety as: “an unpleasant emotional state or condition which is identified by subjective feelings of tension, apprehension and worry by the activation or arousal of the autonomic nervous system” (Spielberger, 2013). However, it was been suggested that when a stressor is perceived as a challenge, this mostly leads to improved motivation, harder work and automatically a better performance, whereas if the stressor is perceived as a threat, this causes anxiety which can interrupt cognitive function and eventually lead to declined performance (Howard, 2020). Moreover, it is suggested that anxiety is the most common in competitive sports environment (Khan *et al.*, 2017). This can be attributed to various

factors. The pre-competitive aspect and the build-up prior to the game can have a magnifying effect on anxiety. One of the most common reasons for anxiety that is caused in sports environments is the fear of not performing to the standard expected with the additional factor of disappointing teammates with a poor performance in team related sports. According to Robinson and Smith (2015), anxiety and sports are deeply associated and the same study stated that anxiety is not necessarily a bad or negative mental state as it could potentially keep the athletes alerted and focused while performing. This explains the common saying we often hear “stress is not always bad; it pushes you to do better”. A major issue in sports psychology which is not being brought to the surface and discussed enough is the so-called pre-competition anxiety. The effect of pre-competition anxiety on athletic performance has been a broadly examined topic in sport psychology. It appears however, that the whole topic of pre-competition anxiety calls for further examination and research, for more specificity on the matter can assist with its development even further. It can be defined as a factor/cause in sport performance by which an athlete may experience undesired, negative feelings such as fear of failure and reduction in confidence before or prior to their competition, hence the name pre-competition anxiety is given (Moran, 2004). Another definition of pre-competition anxiety was given by Athan and Sampson (2013) as: an undesirable feeling which is associated with an indefinite but consistent feeling of dread and apprehension before a competition with symptoms of paralysing fear, shortness of breath, increased heart rate, dizziness, shaking, sweating and inability to concentrate. When an athlete is struck and then occupied with the any of the various symptoms of pre-competition anxiety, it can be hard to near-impossible for them to stay focused during their competition (Ikulayo, 1990). Pre-competition anxiety can have an enormous impact and play a major role in competitive sports, because the athletes are in a high psychological pressure when trying to cope with the thoughts of possible negative consequences and fear of failure before, during and after competitions (Levy, Nicholls and Polman, 2011). It is further suggested that during pre-competition periods, athletes who manage to enter the competition in relaxed and confident moods tend to perform in and around their expected levels, thus providing stability in their performance levels. In pre-competition anxiety, the athlete mostly tends to be self-focused, self-defeating and negative which could highly affect their performance (Kumar, 2016). Pre-competition anxiety remains a multifaceted state and depending on the symptoms or phase of anxiety the athlete is affected accordingly. Pre-competition anxiety is divided into two phases which are; trait anxiety and state anxiety (Kumar, 2016). Trait anxiety can reveal itself in various conditions as it is known to be a part of someone’s personality, so individuals with trait anxiety tend to behave with immense variation in different situations and somewhat unpredictably, whereas in state anxiety, changes in somatic and cognitive symptoms show up only in anxiogenic environments (environments which trigger anxiety) which are triggered in particular stressing situations such as a competition day or a deadline (Weinberg and Gould, 2014). Additionally, pre-competition anxiety consists of two components, which are; cognitive anxiety (associated with psychological symptoms such as exaggerated pre-occupation with performance, apprehension and negativism) and somatic anxiety (associated with physical symptoms such as increased heart rate, excessive sweating, increased blood pressure, tension in muscles, changes in respiratory rate, tremors etc.) (Alejo *et al.*, 2020). On the other hand, CSAI-2 (Competitive State Anxiety Inventory-2) is one of the most common scales which was developed by Martens in 1990 to measure the two components of state anxiety; cognitive and somatic anxiety in order to determine the levels of pre-competition anxiety in athletes (Agaoglu, 2016). Athletes’ performances can be affected in numerous ways by pre-competition anxiety. According to a study done by Krane, Joyce and Rafeld (1994), pre-competition anxiety has been found to have an impactful effect on athletes’ performances. Moreover, the required stamina and power of the relevant sport have been identified as being affected by the pre-competition anxiety which can lead to a decrease the athlete’s levels of energy. Furthermore, it was found that pre-competition anxiety sabotaged athletes’ performances by affecting them mentally at the moments where they needed to remain calm and composed (Kumar, 2016c).

Additionally, pre-competition anxiety led to increases in the tension felt in throat and chest muscles of athletes which lead to difficulties in swallowing and expanding the chest to breathe correctly (Ikulayo, 1990b). Impairments on swallowing and breathing can have detrimental effects on an athlete's performance during competition. Krane, Joyce and Rafeld (1994b) found that the effects caused by pre-competition anxiety expands an effect on athletes' performances. According to his study, athletes who see pre-competition anxiety as beneficial in their sport performance are successful athletes. Numerous other studies have also brought evidence on the fact that pre-competition anxiety affects performance. For instance, many sport psychologists are found to consider the pre-competition anxiety as a highly influential factor which is most likely to affect performance negatively and result in a reduced outcome (Bali, 2015). Additionally, studies have proved that pre-competition anxiety highly interferes and inhibits athlete's performance and leads to poor outcomes (Borg, 1970).

METHODOLOGY: Design, the experimental design of this research was the repeated measures design (within subjects), since repeated measurements were taken for each subject. The same participants were measured in both conditions before Covid-19 lockdown and after Covid-19 lockdown. Repeated measures design has more statistical power because it provides control over factors that could cause between-subject variability (between-subject variability are individual differences between subjects), also repeated measures design can keep a record of the effects overtime such as the learning curve for a task (Frost, 2015).

Participants: Fifty-seven professional and amateur athletes (41 males, 16 females) from various countries including Cyprus, Iran, the UK, the US, Armenia, Cameroon, Ghana, Turkey, Colombia and Malaysia took place in this research. Participants varied in terms of their ages including ages between 12 to 66+. They also varied in terms of their genders, type of sports and experience. The same participants were measured in both experimental groups (Pre-competition anxiety levels before Covid-19 lockdown and pre-competition anxiety levels after Covid-19 lockdown with the same number of participants. The research has recruited participants through opportunity sampling, where the members of the target population (athletes) were asked to take part in the research by completing a questionnaire. Participants were given a clear explanation about the purpose of the study. They were also given an informed consent and the right to withdraw along with the online questionnaire. The participants had their identities kept anonymous due to confidentiality issues.

Materials: Competitive State Anxiety Inventory-2 (CSAI-2) questionnaire was used in order to compare athletes' pre-competition anxiety levels by collecting data about their cognitive symptoms, somatic symptoms and self-confidence levels, before covid-19 lockdown and after Covid-19 lockdown. The CSAI-2 test was carried out online with a response sheet provided to the participants. The questionnaire was consisting of 60 questions in total, including the demographic of the participants on a 4-point Likert scale ranging from 1 to 4, 1 indicating "never" and 4 indicating "always". The questionnaire was prepared in two languages (English and Greek) in order to reach out to a bigger sample size. CSAI-2 scale was found to be adequate for measuring the pre-competition anxiety state of athletes involved in competitive sports environments, both in intervention and research (Arruza Gabilondo *et al.*, 2012). The questionnaire was prepared via Google Forms platform and given to the participants to collect their responses.

Procedure: The CSAI-2 questionnaire was carried out online due to the conditions brought by the Covid-19 pandemic and isolation. All 57 participants were reached out through websites of national and international sport federations. CSAI-2 questionnaire was modified according to the purpose of the study, making the questions suitable for collecting data about the changes in athletes' pre-competition anxiety levels before and after Covid-19 lockdown. The questionnaire was filled out by every individual separately without having any time limitations and all the data was collected in a total of one month. Participants were asked to read all the questions carefully and answer each question. They were allowed to contact the researcher via e-mail in case they had any questions about

the questionnaire. The questionnaire was completed by the participants at any time they were available.

RESULTS Data analysis: Statistical Package for Social Sciences (SPSS) 25.0 software was used for statistical analysis of the research data. The reliability of the responses of the athletes included in the study of Competitive State Anxiety Inventory-2 (CSAI-2) was examined with the Cronbach's Alpha test, and the alpha coefficient was found to be 0,730 for the answers before Covid-19 lockdown and 0,730 for the answers after Covid-19 lockdown. The data were found to be reliable since the Cronbach's Alpha value calculated for both measurements were above 0,70. Frequency analysis was used to determine the socio-demographic characteristics of the athletes. Descriptive statistics regarding the scores obtained by the athletes from the Cognitive State Anxiety, Somatic State Anxiety and Self-confidence subscales in the Competitive State Anxiety Inventory-2 are given. The normal distribution of the athletes' Cognitive state anxiety, Somatic state anxiety and Self-confidence scores was examined with the Shapiro-Wilk test because of the small sample size.

Test Time	CSAI-2	Shapiro-Wilk		
		Statistic	df	Sig.
Pre Test	Cognitive state anxiety	0,957	52	0,058
	Somatic state anxiety	0,969	52	0,183
	Self-confidence	0,965	52	0,127
Post Test	Cognitive state anxiety	0,978	52	0,434
	Somatic state anxiety	0,962	52	0,092
	Self-confidence	0,959	52	0,072

As it is seen above, it was determined that the scores obtained by the athletes before Covid-19 lockdown and after Covid-19 from the Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales in Competitive State Anxiety Inventory-2 conformed to the normal distribution. Accordingly, parametric hypothesis tests were used in the research. Paired sample t-test was used to compare the Cognitive state anxiety, Somatic state anxiety and Self-confidence scores of the athletes in Competitive State Anxiety Inventory-2 before Covid-19 lockdown and after Covid-19 lockdown. Independent sample t-test and ANOVA were used to compare the changes in Cognitive state anxiety, Somatic state anxiety and Self-confidence scores in Competitive State Anxiety Inventory-2 before Covid-19 lockdown and after Covid-19 lockdown.

Table 1. Distribution of athletes according to their socio-demographic characteristics.

	Freq.	Percent
Gender		
Female	12	23,08
Male	40	76,92
Age		
18-24	19	36,54
25-34	21	40,38
35 ≥	12	23,08

Education		
High School	13	25,00
Bachelor's degree	24	46,15
Master's/PHD	15	28,85
Nationality		
Cyprus	34	65,38
Cameroon	4	7,69
USA	3	5,77
Ghana	3	5,77
Iran	2	3,85
Turkey	2	3,85
Armenia	1	1,92
British	1	1,92
Colombia	1	1,92
Malaysia	1	1,92
Sport		
Team sport	33	63,46
Individual sport	19	36,54
Elite/Non-elite		
Elite athlete	17	32,69
Non-Elite athlete	35	67,31
Individual Sports highest level (n=19)		
Pancyprian	9	47,37
European	4	21,05
International Competitions	3	15,79
Olympic games	1	5,26
World Championship	1	5,26
Local cycling comp.	1	5,26
Team Sports highest level (n=33)		
Domestic League	23	69,70
Domestic Cup	7	21,21
Europa League	2	6,06
City league	1	3,03

Table 1 shows the distribution of the athletes included in the study according to their socio-demographic characteristics. In Table 1, it is shown that 23,08% of the athletes participated in the study were women and 76,92% were men, 36,54% are in the 18-24 age group, 40,38% were in the 25-34 age group and 23,08% were in the 35-age group and above. Moreover, 25,0% were high school graduates, 46,15% were undergraduate and 28,85% were postgraduate. It was observed that 65,38% of the athletes included in the study were citizens of Cyprus 7,69% Cameroon, 5,77% the USA, 3,85% Iran and 3,85% Turkey nationals. It has been determined that 63,46% of the athletes did team sports, 36,54% did individual sports, 32,69% are elite and 67,31% are non-elite athletes. The highest rating of 47,37% of individual athletes was within the Pancyprian category, 21,05% were in European

category, and 15,79% were in International Competitions category. 69,70% of team sports were within the Domestic League and 21,21% of them were within Domestic Cup.

Table 2. Descriptive statistics regarding the Competitive State Anxiety Inventory-2 scores of the athletes before Covid-19 lockdown and after Covid-19 lockdown.

Test Time	CSAI-2	N	\bar{x}	s	Median	Min	Max
Pre Test	Cognitive state anxiety	52	18,79	5,73	19,00	9	32
	Somatic state anxiety	52	19,31	4,30	19,00	12	31
	Self-confidence	52	26,81	3,86	27,00	17	33
Post Test	Cognitive state anxiety	52	23,13	6,01	24,00	12	35
	Somatic state anxiety	52	21,63	4,83	20,50	14	33
	Self-confidence	52	23,00	3,74	22,00	16	31

In table 2, descriptive statistics such as mean, standard deviation, median, smallest and largest values are given regarding the Competitive State Anxiety Inventory-2 scores of the athletes included in the scope of the research before Covid-19 lockdown and after Covid-19 lockdown. When Table 2 is examined, the athletes participated in the study had $18,79 \pm 5,73$ points from the Cognitive state anxiety subscale, $19,31 \pm 4,30$ points from the Somatic state anxiety and $26,81 \pm 3,86$ on the Self-confidence subscale in CSAI-2 before Covid-19 lockdown. After Covid-19 lockdown, the athletes had $23,13 \pm 6,01$ points from the Cognitive state anxiety subscale, $21,63 \pm 6,01$ points from the Somatic state anxiety subscale and $23,0 \pm 3,74$ points from the Self-confidence sub-scale in CSAI-2.

Table 3. Comparison of the Competitive State Anxiety Inventory-2 scores of the athletes before and after Covid-19 lockdown.

CSAI-2	Pre Test		Post Test		t	p
	\bar{x}	s	\bar{x}	s		
Cognitive state anxiety	18,79	5,73	23,13	6,01	-6,601	0,000**
Somatic state anxiety	19,31	4,30	21,63	4,83	-5,103	0,000**
Self-confidence	26,81	3,86	23,00	3,74	6,045	0,000**

** $p < 0,01$

Table 3 shows the paired sample t-test results used to compare the CSAI-2 scores of the athletes participating in the study before and after Covid-19 lockdown. When Table 3 is examined, it is determined that the differences between the scores of Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales of the athletes included in CSAI-2 before and after Covid-19 lockdown are found to be statistically significant ($p < 0.05$). Athletes' Cognitive state anxiety scores after Covid-19 lockdown increased from $18,79 \pm 5,73$ to $23,13 \pm 6,01$, Somatic state anxiety scores after Covid-19 lockdown increased from $19,31 \pm 4,30$ to $21,63 \pm 4,83$ and their Self-confidence scores after Covid-19 lockdown dropped from $26,81 \pm 3,86$ to $23,0 \pm 3,74$. According to these results, while the Cognitive state anxiety and Somatic state anxiety scores of the athletes increased after Covid-19 lockdown, their Self-confidence scores decreased.

Table 4. Comparison of the differences of Competitive State Anxiety Inventory-2 scores according to the genders of athletes before Covid-19 lockdown and after Covid-19 lockdown.

CSAI-2	Gender	n	\bar{x}	s	t	p
Cognitive state anxiety	Female	12	3,17	4,22	-0,981	0,331
	Male	40	4,70	4,89		
Somatic state anxiety	Female	12	2,33	2,64	0,008	0,994
	Male	40	2,33	3,49		
Self-confidence	Female	12	-3,58	2,81	0,193	0,848
	Male	40	-3,88	4,97		

In Table 4, independent sample t-test results regarding the comparison of the differences between Competitive State Anxiety Inventory-2 scores before Covid-19 lockdown and after Covid-19 lockdown according to the gender of the athletes are shown. In table 4, it was determined that the difference between the scores of the athletes in the research from Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales in CSAI-2 before and after Covid-19 lockdown was not significant by gender ($p>0,05$). The number of changes in the scores of Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales of both male and female athletes after Covid-19 lockdown were found to be similar.

Table 5. Comparison of the differences between Competitive State Anxiety Inventory-2 scores before and after Covid-19 lockdown based on athletes' age groups.

CSAI-2	Age	N	\bar{x}	s	Min	Max	F	p
Cognitive state anxiety	18-24	19	3,47	4,50	-9	9	0,864	0,428
	25-34	21	5,38	4,68	-2	15		
	35 >	12	3,92	5,28	-2	14		
Somatic state anxiety	18-24	19	1,95	2,44	-2	8	0,632	0,536
	25-34	21	2,95	3,32	-2	11		
	35 >	12	1,83	4,37	-7	9		
Self-confidence	18-24	19	-2,95	4,29	-9	10	0,714	0,495
	25-34	21	-4,67	4,49	-15	4		
	35 >	12	-3,67	5,12	-13	5		

Table 5 includes the ANOVA findings used to compare the differences between Competitive State Anxiety Inventory-2 scores before and after Covid-19 lockdown based on the athletes' age groups. In table 5, it was determined that the difference between the scores of the athletes in the research from Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales in CSAI-2 before and after Covid-19 lockdown was not statistically significant ($p>0,05$). Athletes who were aged 18-24, 25-34 and 35+ had similar changes in Cognitive state anxiety, Somatic state anxiety and Self-confidence scores after Covid-19 lockdown.

Table 6. Comparison of differences between Competitive State Anxiety Inventory-2 scores before and after Covid-19 lockdown based on athletes' level of education.

CSAI-2	Education	n	\bar{x}	s	Min	Max	F	p
Cognitive state anxiety	High School	13	1,62	4,48	-9	8	3,181	0,051
	Bachelor's degree	24	5,04	3,86	-2	14		
	Master's/PHD	15	5,60	5,57	-2	15		
Somatic state anxiety	High School	13	0,69	3,59	-7	8	2,823	0,069
	Bachelor's degree	24	2,46	2,32	0	9		
	Master's/PHD	15	3,53	3,93	-2	11		
Self-confidence	High School	13	-2,00	4,78	-7	10	1,417	0,252
	Bachelor's degree	24	-4,29	3,64	-13	2		
	Master's/PHD	15	-4,60	5,45	-15	5		

Table 6 shows the ANOVA results used to compare the differences between Competitive State Anxiety Inventory-2 scores, before and after Covid-19 lockdown, based on athletes' education levels. In table 6, it was determined that the changes in the scores of the athletes in Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales in CSAI-2 before and after Covid-19 lockdown was not significant based on the educational level ($p > 0,05$). The changes in the scores of Cognitive state anxiety, Somatic state anxiety and Self-confidence sub-scales were similar after Covid-19 lockdown, regardless of the athletes' educational levels.

Table 7. Comparison of differences between CSAI-2 scores before and after Covid-19 lockdown based on athletes' type of sport

CSAI-2	Sport	n	\bar{x}	s	t	p
Cognitive state anxiety	Team sport	33	5,21	4,18	1,769	0,083
	Individual sport	19	2,84	5,39		
Somatic state anxiety	Team sport	33	2,42	3,17	0,279	0,782
	Individual sport	19	2,16	3,56		
Self-confidence	Team sport	33	-4,42	3,91	-1,299	0,200
	Individual sport	19	-2,74	5,41		

In table 7, independent sample t-test results are shown which are used to compare the differences between CSAI-2 scores of athletes who play in team sports and individual sports before and after Covid-19 lockdown. When table 7 is examined, it was determined that the changes in the scores of Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales in CSAI-2 before and after Covid-19 lockdown, was not statistically significant based on the type of sports of the athletes ($p > 0,05$). The differences between the CSAI-2 scores of team sport and individual sport athletes before and after Covid-19 lockdown are similar.

Table 8. Comparison of differences between CSAI-2 scores before and after Covid-19 lockdown based on athletes being elite or non-elite athletes.

CSAI-2	Elite/Non-elite	n	\bar{x}	s	t	p
Cognitive state anxiety	Elite athlete	17	4,24	4,60	-0,116	0,908
	Non-Elite athlete	35	4,40	4,88		
Somatic state anxiety	Elite athlete	17	2,47	3,66	0,218	0,829
	Non-Elite athlete	35	2,26	3,15		
Self-confidence	Elite athlete	17	-3,41	4,54	0,435	0,666
	Non-Elite athlete	35	-4,00	4,60		

Table 8 shows the independent sample t-test results used for comparing the differences between CSAI-2 scores before and after Covid-19 lockdown based on the status of athletes as elite or non-elite athletes. When table 8 is examined, it was determined that the changes between the scores of the athletes in Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales of CSAI-2 was not statistically significant based on the status of athletes being elite or non-elite athletes ($p>0,05$). The changes in the scores of elite and non-elite athletes' on Cognitive state anxiety, Somatic state anxiety and Self-confidence subscales are similar to the amount of change before and after Covid-19 lockdown.

DISCUSSION: The aim of the present study was to investigate whether the period of isolation and lack of training due to the Covid-19 pandemic had increased the pre-competition anxiety levels of professional and amateur athletes. A brief comparison with the existing literature will be made in the way the results were analysed in this research which was based upon various demographic characteristics. Following a discussion on the applied implications of the findings of this research will be made and finally a conclusion will be presented that includes recommendations and some thoughts of the researcher. Athletes were asked to complete a Competitive State Anxiety Inventory-2 (CSAI-2) questionnaire, which included three subscales; Cognitive state anxiety, Somatic state anxiety and Self-confidence. Since the three subscales, when taken in accordance with the existing literature review are interconnected, the participants were asked questions in order to determine how any of the above subscales has been impacted during the isolation period. The athletes/participants were found to have Cognitive state anxiety and Somatic state anxiety on higher levels than usual and as result an evident decrease in Self-confidence levels, after Covid-19 lockdown, was observed. The various demographic characteristics of the participants included participants from different gender, nationality, age, level of education and athletic status (professional/amateur). The present study focus on the following demographic characteristics are gender, age and athletic status. A deliberate omission in discussing the nationality demographic characteristic was due to lack of big representation from various nationalities. This is not to say that participants were not of a multinational background, however. The effect of gender differences of the participants was found to be insignificant. The changes in their scores on the three subscales of CSAI-2 after the Covid-19 lockdown of both male and female athletes were remarkably similar. A study conducted in 2014 with 720 athletes also showed that there was no significant difference between male or female athletes in terms of their cognitive state anxiety, somatic state anxiety and self-confidence levels (Hussain, Zaman and Idris, 2014). On the contrary, a different study had found that women athletes' pre-competition anxiety levels were slightly higher than the male athletes (Aşçi *et al.*, 2006). However, the demographic characteristics of the contradicting study consisted of athletes from only one nationality. In relation to the present study the

demographic characteristics that were analysed in the results are the following: gender, age, level of education, whether the participant is in a team or individual sport (type of sport) and professional status (professional/ amateur athletes). In relation to the results based on the participants age groups the present study sought to determine whether age is a factor for their increased pre-competition anxiety levels. However, no influence of age-groups was found to have affected the levels of pre-competition anxiety. This was determined since all the age groups who were included in the study showed similar changes in their CSAI-2 scores after Covid-19 lockdown when compared to their answers prior to the Covid-19 lockdown. Another study which measured the effect of age on the pre-competition anxiety levels had also showed no significant relationship between age and cognitive and somatic symptoms as well as self-confidence levels (Nikseresht *et al.*, 2017). Continuing, the level of education was another demographic characteristic that was considered and measured in terms of its potential effect on pre-competition anxiety levels on athletes. Yet again, no significant difference was observed on the changes in scores of the athletes based on their educational levels. In a study which measured the effect of educational level, educational environment, parental educational level and home environment on the pre-competition anxiety, it had been showcased that all these personal factors had no significant effects on pre-competition anxiety levels (Tirmzai *et al.*, 2019). Moreover, the type of sport athletes take part in (team sport and individual sport) was also tested so as to determine whether it had an impact on the scores of athletes' CSAI-2 results. However, athletes from both sport types had similar fluctuations in their CSAI-2 scores in relation to the three sub-scales. In essence, the type of sport was not found to be a differing factor in their increased cognitive and somatic symptoms and decreased self-confidence. A further study which aimed to examine the difference of pre-competition levels of athletes in team sports and individual sports had found that there were no significant differences in athletes' cognitive state anxiety, somatic state anxiety and self-confidence levels in team sports and individual sports (Hussain, Zaman and Idris, 2014). Lastly, the athletes' pre-competition anxiety levels were also measured based on them being elite or non-elite athletes. Nevertheless, both elite and non-elite athletes showed similar changes in their cognitive state anxiety, somatic state anxiety and self-confidence levels after comparing their scores before and after Covid-19 lockdown. Pre-competition anxiety needs further research and examination especially on the matter of Covid-19 lockdown (isolating factor), as it affected lives of all athletes at some point due to the strict isolation measures imposed on them in order to keep everybody safe. As a result of reduced training and lack of face-to-face interactions with their coaches and teammates the results observed in the research appear justified. Previous research concluded in 2004 had stated that pre-competition anxiety is highly associated with cognitive symptoms which can be negative feelings such as fear of failure and reduced self-confidence (Moran, 2004). These negative feelings tend to show themselves through somatic (bodily) responses such as shortness of breath, sweating, dizziness, increased heart rate and reduced ability in concentrating (Athar and Sampson, 2013). The results of this current research have shown that the athletes who participated in this study had a significant difference in their cognitive state anxiety, somatic state anxiety and self-confidence levels before and after Covid-19 lockdown. Athletes have shown increased cognitive symptoms such as nervousness, self-doubts, fear of failure and decreased self-confidence, followed with somatic symptoms such as sweaty hands, jitteriness, tense feelings in stomach and increased heart rate after the Covid-19 lockdown. In its big majority the present research has its findings in compliance with the existing literature on the issue of pre-competition anxiety. Of course, the present research has the added element of the isolating compartment, however reasonable conclusions may be drawn, since isolation can have negative effects. There is clearly evidence from the findings that pre-competition anxiety has been clearly affected by the isolation. The daily life of an athlete consists of hard work and dedication that takes place behind the scenes. This is only achievable through teams of coaches and family supporting the competing athletes. The biggest part of their time goes into training prior to any competition. The isolation has had significantly reduced, and on some occasions to its totality, the

time athletes were able to spend training. Conclusively and as the findings of this research suggest it can be proposed that isolation affected athletic pre-competition anxiety and can be described as an agitating factor. However, more research is required on the matter of pre-competition anxiety and the author of this research invites and encourages fellow researchers to do just that and also to dwell on the potential short- and long-term effects of the Covid-19 measures, including isolation, on athletes. There is a sincere hope on behalf of the author that the study and research completed and compiled above will help advance the issue of pre-competitive anxiety and highlight the impact it has when it is combined with various exogenous factors- in the present case the pandemic.

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