

ORIGINAL ARTICLE



# The Prevalence of Emotional Distress among Athletes during COVID-19 Movement Control Order Period in Malaysia

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## ABSTRACT

**Background.** The outbreak of Coronavirus-19 or COVID-19 has detrimental effects on the sports industry. Cancellation of sports training and competitions, movement restriction, and social isolation present an emotional challenge for athletes. **Objectives.** This cross-sectional study examined the prevalence of emotional distress among athletes during the MCO of Covid-19 in Malaysia. **Methods.** 224 male and 264 female athletes participated in this study in May 2020. The majority of the participants were archers (20.7%), followed by athletics (12.9), netball (8.4%), and badminton (6.6%). An online survey was employed, which consists of three measures: (a) demographic information, (b) Depression, Anxiety and Stress Scale -21, and (c) Kessler Psychological Distress Scale - 10. **Results.** The results indicated that 7.2% (N=35) of the participants reported severe to extremely severe stress, 20.5% (N=100) of participants experienced severe to extremely severe anxiety, and 10% (N=49) participants reported severe to extremely severe depression. Moreover, Chi-Square analysis revealed no significant differences between the level of stress, anxiety, and depression based on age, gender, and category of sports (individual vs. team sports), except for gender and depression ( $X^2(4, N=488) = 12.18, P= 0.016$ ). More female athletes reported severe depression (20.3%) compared to male athletes (13.4%). **Conclusion.** This finding suggests further assessment, monitoring, and treatment plan for athletes, especially female athletes, to ensure their mental health and emotional wellbeing during this Covid19 pandemic.

**KEYWORDS:** *Psychological Distress; Mental Health, Team Sports, SARS-COV-2.*

## INTRODUCTION

The World Health Organization declared COVID-19 a global pandemic on March 11, 2020 (1). In Malaysia, the first case of COVID-19 was confirmed on January 25, 2020, and cases of positive COVID-19 were, and still are, recorded daily. As of January 2021, Malaysia has recorded over 170,000 positive cases. To battle COVID-19, the Malaysian government has implemented a 14-day Movement Control Order (MCO) starting on March 18, 2020. It was then extended to April 14, 2020, and continued to May 14, 2020. After three extended MCO periods, the government started enforcing the Conditional Movement

Control Order (CMCO), which allowed essential services and some business premises to operate. Although the spread of the virus was flattening at one point, it started to rise, leading to various CMCOs and Targetted MCO since September 2020. As of January 2021, the whole country is again under MCO to curb the steep increase in confirmed daily cases.

Extreme measures taken by governments such as quarantines, lockdowns, social isolation, and movement restrictions are deemed necessary (2). While these measures are recognized as effective strategies to reduce and break the chain of the

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spread of COVID-19, their psychological consequences are enormous (3). Some may experience sleep disturbances, concentration issues, panic attacks, worsening of chronic health problems, changes in eating patterns, depression, anxiety, unexplained physical pain (4), and a range of social issues (2). A series of recent studies on the impact of Covid-19 conducted in China implicated psychological health effects of the pandemic. For instance, Liang et al. (5) revealed that two weeks after the outbreak of Covid-19 in China, 14.4% of youth exhibited post-traumatic stress disorders. Similarly, Qiu et al. (6) conducted a nationwide survey of over 50 thousand respondents and found that over 35% of the respondents experienced psychological distress, and female respondents showed significantly higher psychological distress than their male counterparts (Female,  $M=24.87$ ,  $SD=15.03$  versus Male,  $M=21.41$ ,  $SD=15.97$ ,  $P<0.001$ ). Moreover, individuals between 18 and 30 years of age and above 60 presented the highest distress scores.

A study by Zhang et al. (7) found an increased prevalence of depression (29.2%) in patients who experienced COVID-19 infection and the prevalence of anxiety symptoms in all patients, quarantined individuals, and the general public. They also found the trends for an increased prevalence of depression comorbid with anxiety in patients who experienced COVID-19 infection (21.1%) and the general public (22.4%). Both groups who experienced COVID-19 infection (19.3%) and the general public (14.3%) also had a more significant proportion of severe depressive symptoms. They were also likely to demonstrate depressed mood and somatic symptoms compared to individuals under quarantine. Significant anxiety symptoms such as becoming easily annoyed or irritable were manifested primarily in the general public and patients who experienced Covid-19 infection.

Specific to this study's context, early literature has documented the negative psychological impacts of pandemics, which led to acute depression and anxiety. For example, Sundarasan et al. (8) revealed that out of 983 university students, 20.4%, 6.6%, and 2.8% experienced minimal to moderate, marked to severe, and highly severe anxiety. Similarly, Irfan et al. (9) also indicated that 31.1% and 26.1% of students experienced moderate and severe anxiety, respectively. However, to the authors' knowledge, few studies, especially in Malaysia, have investigated the impacts of COVID-19 from the

point of view of the athletes' population, whereby the changes in daily social rhythm, social isolation, suspension of training, and tentative competition schedule have potentially increasing athletes' vulnerability to mental health symptoms (10). It is also the primary concern expressed by the Malaysian Football Association and other sports authorities when all the matches, including Olympics in Tokyo, UEFA EURO Championship, FIFA, Boston Marathon, NBA, and local competitions, are canceled or postponed (11). The sudden loss of target, social isolation, cancellation of sports activities, and disruption of daily training has increased the anxiety level among athletes, especially female athletes presenting the greatest negative feelings (12). Chadha (13) also stressed that the drastic changes in sports settings created anxiety, stress, fear, anger, and frustration for athletes.

Emotional distress is commonly associated with lockdown, isolation from athletic teams, lack of social support, and lack of interaction with coaches. Athletes who do not have proper referral resources and lack resiliency may be at risk of chronic stress and other psychological illnesses (14). These imply the importance of constructive guidance and support for athletes during the lockdown (15). Athletes may suffer from substantive psychological distress and potential mental illness without proper support. Therefore, it is essential to identify their emotional experience and provide appropriate and adequate psychological support for athletes. To fill this literature gap, this study explores athletes' emotional and emotional distress levels based on demographic variables such as age groups, gender, and sports category.

## **MATERIALS AND METHODS**

This cross-sectional study was carried out in May 2020 during the peak of the Movement Control Order in Malaysia. An anonymous online survey method was used to collect data from athletes in individual and team sports in Malaysia. Based on the random purposive sampling procedure, the online survey was sent to the team managers or sports organizations with the information about the study and an offer to participate with a google link to the survey. The interested participants were then asked to fill out informed consent electronically before answering the survey. After the survey was filled out, the participants were required to submit the survey to the researchers by clicking on the 'submit' button.

**Participants.** Four hundred eighty-eight participants from various individual and team sports completed the online survey. Two hundred twenty-four were male athletes, and 264 were female athletes. The percentages of gender, age groups, level of competition, and type of sports are presented in [Table 1](#). The sample size was determined based on an estimated proportion of 30% of the athlete population in Malaysia, a precision of 5% and the z-value of 1.96. Using these values, a minimum sample of 304 athletes is required to reach the statistic power of 80%. However, this study's final recruited participation exceeded the minimum sample size ( $N=488$ ).

**Procedures.** The online survey link was circulated via social media platforms, including Whatsapp applications, Instagram, and Facebook. Athletes who agreed to participate were provided with an online survey link, the study description, and electronic informed consent. Once they indicated their consent to participate, they were encouraged to complete the questionnaire. The online survey can be completed within 10-15 minutes, and the participants have a right to withdraw at any time if they feel uncomfortable continuing the study. In this study, (a) informed consent was obtained from each participant included in the study, and (b) the study protocol conforms to the ethical guidelines of the 1975 Declaration of Helsinki.

**Instruments. Demographic Information.** A brief demographic form includes information about gender, age, race, category of sports, the experience of participation in any matches or competition, and the number of years as an athlete were collected for this study.

**Depression, Anxiety, and Stress Scale (DASS-21).** DASS-21 is a self-reporting instrument used to measure depression, anxiety, and stress symptoms in both clinical and non-clinical samples. The tool consists of 21 items representing three sub-scales: 1) depression, 2) anxiety and 3) stress ([16](#)). The depression sub-scale consists of 7 items related to hopelessness, low self-esteem, and low positive affect. The anxiety sub-scale consists of 7 items assessing autonomic arousal, musculoskeletal symptoms, situational anxiety, and subjective experience of anxious arousal. The stress sub-scale consists of 7 items related to tension, agitation, and negative affect. The response scale is a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time).

During the survey, the participants need to recall the past seven days' experience of stress, anxiety, or depression symptoms. The instrument has been translated and culturally adapted into the Malaysian context. The Cronbach's alpha values ranged from 0.837 to 0.863 ([17](#)).

**Kessler Psychological Distress Scale (K10).** K10 is a 10-item instrument used to screen and identify levels of psychological distress ([18](#)). The response scale was a 5-point Likert scale ranging from 0 (none of the time) to 5 (all of the time). The participants answered based on how much over the past month they had experienced the ten symptoms, such as "feeling tired out of no good reason" and "sad" or depressed." The Malay version of the K10 was translated and tested in the Malaysian context by [Tiong et al. \(19\)](#) among clinical and non-clinical groups. Their results showed that the Malay version of K10 has a high Cronbach's alpha coefficient in both non-clinical ( $\alpha = 0.84$ ) and clinical ( $\alpha = 0.89$ ) samples. In the current study, the alpha coefficient of K10 is 0.92.

**Statistical Analysis.** Descriptive statistics and Pearson Chi-Square were used to analyze the research data. *P* significant value is set at  $P < 0.05$ . All data were analyzed using the Statistical Package for Social Sciences (SPSS) version 22.0 software.

## RESULTS

The percentage of the sample in terms of gender, level of competition, age groups, and types of sports are presented in [Table 1](#). Moreover, the Means and Standards Deviation of the measured variables are presented in [Table 2](#). The average depression, anxiety, and stress scores are within a normal range. We noted a significant difference between males and females in depression scores ( $p < 0.05$ ). However, we observed no other significant differences in the average depression, anxiety, and stress among age groups and sports categories. Albeit insignificant, the average distress scores were slightly higher in the 23-27 age group and among individual sports athletes.

Regarding the percentages of emotional distress categories, approximately 7% of the participants are under 'moderate' – 'extremely severe' stress levels. 32% of the participants are in the 'moderate' – 'extremely severe' anxiety level, and 22% in the 'moderate' – 'extremely severe' depression level ([Table 3](#)).

Table 1. Percent of Gender, Age Groups, Types of Sports, and Level of Competition

	Frequency	Percent
<b>Gender</b>		
Male	224	45.9
Female	264	54.1
<b>Age categories</b>		
13-17	172	35.2
18-22	233	47.7
23-27	41	8.4
28-32	23	4.7
>33	19	3.9
<b>Types of Sports</b>		
Individual sports	314	64.3
Team sports	174	35.7
<b>Competition levels</b>		
International	76	15.6
National	137	28.1
State	209	42.8
University	62	12.7
School	4	0.8
<b>Types of sports (Top 10)</b>		
Archery	101	20.7
Athletics	63	12.9
Netball	41	8.4
Badminton	32	6.6
Football	30	6.1
Silat	22	4.5
Futsal	18	3.7
Takraw	18	3.7
Gymnastic	17	3.5
Hockey	17	3.5

Table 2. Mean (SD) of Depression, Anxiety, and Stress Scores across Gender

Gender	Depression	Anxiety	Stress
<b>Male</b>			
Mean	6.91	8.69	9.71
Std. Deviation	7.49	7.04	7.84
<b>Female</b>			
Mean	8.64	9.01	10.83
Std. Deviation	10.03	8.15	8.99
<b>Age Groups</b>			
<b>13-17</b>			
Mean	8.1279	8.2674	10.6047
Std. Deviation	8.81293	6.88064	8.40534
<b>18-22</b>			
Mean	7.1845	9.2275	10.2318
Std. Deviation	8.32349	7.88630	8.22933
<b>23-27</b>			
Mean	10.8780	10.0000	11.5122
Std. Deviation	12.29674	9.66437	10.42862
<b>28-32</b>			
Mean	9.3913	9.3043	10.2609
Std. Deviation	10.31212	7.52230	8.78644
<b>&gt;33</b>			
Mean	4.9474	6.8421	6.2105
Std. Deviation	7.00376	6.67718	7.02044
<b>Sport Category</b>			
<b>Team</b>			
Mean	8.1720	9.0255	10.7962
Std. Deviation	8.99604	7.32491	8.36946
<b>Individual Sport</b>			
Mean	7.2529	8.5747	9.4483
Std. Deviation	8.96585	8.23026	8.66694

Moreover, a chi-square analysis of the level of stress, anxiety, and depression according to age, gender, and sports categories (individual vs. team sports) revealed nonsignificant associations for all analyses except for gender and depression ( $X^2 = 12.17$ ,  $df = 4$ ,  $P = 0.016$ ) (Table 4). A post hoc analysis revealed that significantly more females are in the 'moderate' – 'extremely severe' level of depression than males (Table 5).

Our analysis of stress levels using Kessler - 10 indicated that about 50% of the athletes in mild to severe stress levels (Table 6). By age group, type of sports, and gender, we found a significant association between gender and stress level ( $X^2 = 9.251$ ,  $df = 3$ ,  $P=0.026$ ). No significant association between stress level and age ( $X^2 = 14.850$ ,  $df = 12$ ,  $P=0.250$ ) and types of sports ( $X^2=3.061$ ,  $df=3$ ,  $P=0.382$ ) (Table 7).

**Table 3. Percentage of Athletes in Depression, Anxiety, Stress Categories**

	Frequency	Percent	Cumulative Percent
<b>Stress</b>			
Normal	361	74.0	74.0
Mild	52	10.7	84.6
Moderate	40	8.2	92.8
Severe	24	4.9	97.7
Extremely severe	11	2.3	100.0
	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
<b>Anxiety</b>			
Normal	245	50.2	50.2
Mild	89	18.2	68.4
Moderate	54	11.1	79.5
Severe	44	9.0	88.5
Extremely severe	56	11.5	100.0
	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
<b>Depression</b>			
Normal	328	67.2	67.2
Mild	54	11.1	78.3
Moderate	57	11.7	90.0
Severe	22	4.5	94.5
Extremely severe	27	5.5	100.0

**Table 4. Pearson Chi-Square Tests for Stress, Anxiety, and Depression according to Gender, Age, and Type of Sports**

	Value	df	Asymptotic Significance (2-Sided)
<b>Gender</b>			
Stress	6.315 <sup>a</sup>	4	0.177
Anxiety	7.721 <sup>a</sup>	4	0.102
Depression	12.176 <sup>a</sup>	4	0.016*
<b>Age</b>			
Stress	12.316 <sup>a</sup>	16	0.722
Anxiety	11.721 <sup>a</sup>	16	0.763
Depression	23.114 <sup>a</sup>	16	0.111
<b>Sport categories</b>			
Stress	3.242 <sup>a</sup>	4	0.518
Anxiety	3.755 <sup>a</sup>	4	0.440
Depression	23.114 <sup>a</sup>	16	0.111

<sup>a</sup> 0 cells (.0%) have an expected count of less than 5. The minimum expected count is 5.05.

## DISCUSSION

The rapid spread of Covid-19 infection and its potential health risks necessitates unprecedented measures to control it. Movement restrictions, to different degrees, are utilized by countries worldwide. Normal daily activities were restricted to the minimum, including uncertainty and delays in sports activities. The experience resulting from the current situation is indeed stressful and traumatic.

Stress, anxiety, and depression can be fueled by uncertainty and disappointment of being unable to perform in the competitions as planned (7). These intense feelings of loss of performance and fear may lead to panic, anxiety, depression, and risk of self-harm or suicide attempt (20) and cause lasting adverse effects on an individual's functioning and wellbeing (21). Some people perceive the pandemic COVID-19 as a traumatic experience as it takes a

physical and emotional toll on everyone. Exposure to a traumatic event has produced various immediate and delayed emotional, physical, behavioral, cognitive, and social reactions. For instance, people

who underwent traumatic events may experience exhaustion, confusion, sadness, anxiety, agitation, numbness, dissociation, confusion, physical arousal, and avoidance (10, 22).

**Table 5. Percent of Depression Categories by Gender**

	Normal	Mild	Moderate	Severe	Extremely Severe	Total
<b>Gender</b>						
<b>Male</b>						
Count	155	31	25	8	5	224
within Gender	69.2%	13.8%	11.2%	3.6%	2.2%	100.0%
within Depression Category	47.3%	57.4%	43.9%	36.4%	18.5%	45.9%
Total	31.8%	6.4%	5.1%	1.6%	1.0%	45.9%
<b>Female</b>						
Count	173	23	32	14	22	264
within Gender	65.5%	8.7%	12.1%	5.3%	8.3%	100.0%
within Depression Category	52.7%	42.6%	56.1%	63.6%	81.5%	54.1%
Total	35.5%	4.7%	6.6%	2.9%	4.5%	54.1%
<b>Total</b>						
Count	328	54	57	22	27	488
within Gender	67.2%	11.1%	11.7%	4.5%	5.5%	100.0%
within Depression Category	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	67.2%	11.1%	11.7%	4.5%	5.5%	100.0%

**Table 6. Percents of Athletes in Each K10 Stress Categories**

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>Normal</b>	269	55.1	55.1	55.1
<b>Mild</b>	74	15.2	15.2	70.3
<b>Moderate</b>	65	13.3	13.3	83.6
<b>Sever</b>	80	16.4	16.4	100.0
<b>Total</b>	488	100.0	100.0	

**Table 7. Pearson Chi-Square Tests for Stress, According to Gender, Age, and Type of Sports (Stress)**

	Value	df	Asymptotic Significance (2-Sided)
<b>K10 Stress Scores</b>			
Gender	9.251	3	0.026
Types of Sports	3.061	3	0.382
Age	14.850	12	0.250

Our key findings indicate that the depression, anxiety, and stress scores in the current sample group were lower than those from other studies involving university students (23). Specifically, among the 488 students, the average depression, anxiety, and stress scores were 7.84, 8.86, and 10.32, respectively. Moreover, the depression, anxiety, and stress score among males and females were also lower than in other studies within the same age group [23]. This pattern is consistent with the notion that organized sports participation decreases the risk of emotional distress such as depression, anxiety, and stress (24, 25).

Although lower scores of emotional distress can be seen in male and female participants compared to other studies (23), female athletes

exhibited significantly higher emotional distress than males. Moreover, we observed higher percentages of female athletes in moderate, severe, and highly severe categories of depression. This finding is aligned with the previous study that female athletes are more likely to become depressed (26-28). Thus, the present study proposes that further assessment, monitoring, and treatment plan are needed to assist female athletes in managing their depressive symptoms and emotional distress.

Another notable finding from this study is the pattern of emotional distress among the team and individual sports athletes. Our data indicated that individual sports athletes exhibited higher emotional distress than athletes in team sports. It is consistent with the findings from Wozny (29).



A plausible reason is the element of social interaction inherent in team sports. Due to social isolation and the restriction of compliance to the standard operating procedure (SOP), interaction

among individual athletes is even limited. Thus, a higher level of emotional distress could lower the levels of function of the individual in sports (26).

**Table 8. Percent of K10 Stress Categories by Gender**

<b>K10_Category</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>Normal</b>			
Count	135	134	269
within Category	50.2%	49.8%	100.0%
within Gender	60.3%	50.8%	55.1%
Total	27.7%	27.5%	55.1%
<b>Mild</b>			
Count	30	44	74
within Category	40.5%	59.5%	100.0%
within Gender	13.4%	16.7%	15.2%
Total	6.1%	9.0%	15.2%
<b>Moderate</b>			
Count	33	32	65
within Category	50.8%	49.2%	100.0%
within Gender	14.7%	12.1%	13.3%
Total	6.8%	6.6%	13.3%
<b>Severe</b>			
Count	26	54	80
within Category	32.5%	67.5%	100.0%
within Gender	11.6%	20.5%	16.4%
Total	5.3%	11.1%	16.4%
<b>Total</b>			
Count	224	264	488
within Category	45.9%	54.1%	100.0%
within Gender	100.0%	100.0%	100.0%
Total	45.9%	54.1%	100.0%

Moreover, we also observe a higher emotional distress score among those in the 23-27 years old group relative to other age groups. Although insignificant, this pattern was consistent with other studies that observed a higher level of emotional distress in individuals within this age group. We speculated that the life-changing events that commonly occur at these ages, such as starting a job and a family, maybe the source of distress. In addition, these new commitments may limit one's leisure pursuits (30, 31).

## CONCLUSION

The data we collected and the results of the findings is one of the few emotional distress data concerning athletes' experience during the height of the Covid-19 pandemic. Although the spread of the virus is within the authorities' control to intervene, the situation has yet to return to normal, and we believe that more targeted and structured research on mental health implications should be studied in Malaysia. Our study is the first to address this issue among this specific population. The data can be potentially used as baseline data for monitoring athletes' psychological health and

developing individualized treatment and prevention of mental health complications due to this pandemic. While we believe these findings contribute to the knowledge of emotional distress among the sports community in Malaysia, we must acknowledge the potential limitations surrounding our study. Firstly, as in other survey-based research, our findings may be influenced by recall errors and social desirability biases. Secondly, the present study uses an online survey that may be limited to those having access to this survey mode. Thirdly, our study was conducted with predominantly competitive athletes, so further studies involving other subpopulations are warranted to confirm whether our findings are sample-specific or more general.

## APPLICABLE REMARKS

Our data is applicable in the followings respects:

- Continuous monitoring of athletes' level of emotional distress, especially among the vulnerable groups such as female and younger athletes, as shown in the data.
- Ensuring psychosocial support services to these vulnerable population is easily accessible.

**FINANCIAL DISCLOSURE**

The authors declare no financial interests related to the materials in the manuscript.

**CONFLICT OF INTEREST**

The authors declare no conflict of interest related to the materials in the manuscript.

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