



# Mental Status and Physical Activity amongst Athletes during Lockdown and Isolation

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## Research Article

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## Abstract

**Background:** COVID-19 Pandemic had detrimental effects such as loss of aerobic fitness, musculoskeletal and cognitive decline which were mostly associated with physical inactivity. Athletes being the physically active person all the time, COVID 19 Pandemic will also affect their status of fitness. Hence the objective of this study was to assess the Mental and physical activity amongst athletes.

**Method:** A cross sectional survey was conducted in which 150 athletes participated. They filled pre validated Self-reported questionnaire and Depression, Anxiety, Stress Scale - 21 (DASH 21) and returned to the researcher.

**Result:** Result of DASH 21 showed that 71.33% athletes were affected their mental status, 57.33% (CI- 49.01% - 65.36%) had Anxiety, 50.67% (CI- 42.39% - 58.92%) had depression and 34.67% (CI - 27.09 - 42.86%) had stress. Self reported questionnaire indicated 64.67% (CI- 56.45% - 72.29%) affected their physical training due to lockdown.

**Conclusion:** Overall physical activity of the athletes was reduced, and had mental health problems as they were suffering from depression, anxiety and stress due to the COVID-19 lockdown.

**Keywords:** Athletes; Behavior; COVID-19; Physical Distancing; Social Distancing

**Abbreviations:** WHO: World Health Organization; COVID-19: Coronavirus Disease

## Introduction

Anxiety is characterized by an apprehension or discomfort arising due to expectation of danger. Normal anxiety becomes pathological when it causes drastic distress and impairment in the functioning of individual. The physical and psychological symptoms of anxiety include restlessness, tremors, palpitations, flushes, dyspnea, tachycardia and hyperventilation and poor concentration.

Emerging as a cluster of cases of pneumonia in Wuhan, china, novel corona virus disease officially known as COVID-19 by WHO, having a widespread effect has reached the level of pandemic [1]. This unsettled situation has created a medical emergency, have an impact on how people apprise this world [2]. Due to sudden decision of lockdown, school and many businesses were closed along with delay of sporting events and decreased social activity [3]. During this period of global crisis, unwanted stress was commonly reported [2]. Many psychological problems and main consequences in terms of mental health including stress, anxiety, depression, frustration, uncertainty during COVID-19 outbreak emerged progressively [4].

Depression among athletes following injury had more symptoms of depression than the uninjured athletes [5]. The COVID-19 pandemic has cost everyone including the athletes to go through physical and social isolation to prevent the spread of the virus. Performance anxiety affects the athletes skills but apart from this anxiety in athletes, they may have faced anxiety in the days spent at home during lockdown due to COVID-19 [6,7]. According to WHO, elevated rates of stress and anxiety are the main psychological issues expected to arise from this COVID-19 pandemic. A survey concluded moderate levels of stress were reported in 70% of participants and remaining had mild levels of stress during the pandemic [8]. This pandemic had an impact on the mental health of various sectors such as Students, health care workers, police personnel. A systematic review summarizes that stress impairs efforts to be physically active [9].

Some research has shown that exercise and physical activities are influencing mental health and well-being of individuals. A study in 2013 noticed that there was a major difference between different levels of sport participation in sports clubs and perceived body image, mental condition and physical condition [10]. However organized activities that had been linked to healthy youth development are not only in physical health but also in mental health [11]. Therefore, due to the nationwide lockdown during COVID-19 pandemic many industries have faced immediate impact like the sports sector where cancellation of single event, competition or match has led to disruption of athletic career, financial crisis, decreased physical training and de-conditioning which could lead to stress, anxiety and depression in athletes.

Depression and anxiety/stress related diseases can be prevented by various physical activities and exercises. Physical activity boasts the self-esteem in many sports people [12]. Some of the contributing factors are mental distraction, self-efficacy and social interaction and biochemical theories such as serotonin and endorphin responses [13].

This pandemic forced the Governments to impose unsurpassed measures to limit the spread of the virus like strict lockdown, banning of all organized and social gatherings and restricting all non-essential travel including shutting down of gyms, parks, cancellation of various sports events and tournaments at multiple levels. Exercise outside individual property was not allowed and there was lack of equipment which caused difficulty for athletes to train at home. COVID-19 Pandemic had detrimental effects such as loss of aerobic fitness, musculoskeletal and cognitive decline which were mostly associated with physical inactivity. Athletes are always physically active, and this lockdown has led to restrictions in their activity along with being physically and socially distant. Therefore, purpose of this study was to find out the amount of physical inactivity faced by athletes

during lockdown and its consequent psychological impact on athletes.

## Method

In this cross-sectional survey, athletes between the ages of 18-28 years, competing in individual or team sports were participated. The athletes were either classified as novice and elite. Athletes who had history of injury during lockdown, any recent emotional event or History of any diagnosed psychological disorders were excluded from the study. A pre validated questionnaire (Self-reported) and Depression, Anxiety, Stress Scale-21 (DASH 21) was circulated using online platform amongst the participants The Self-Reported Questionnaire had 8 items regarding sports activity, leisure, and household chores. Ethical clearance was obtained from Institutional ethical Committee. These questionnaires were sent to 187 participants, out of which 150 participants responded and sent the filled form to the researcher. All answers were recorded in a excel sheet and descriptive analysis was done using Primer Software. Demographic details were as mentioned in Table 1. Majority of athletes were affected psychologically (Table 2) whereas anxiety was the most common in them. Anxiety, Depression and Stress was moderately affected (Table 3).

Gender	Percentage	Frequency
Male	83%	125
Female	17%	25
<b>Type of Sport</b>		
Team	69%	104
Individual	31%	46
<b>Type of Athlete</b>		
Elite	50%	75
Recreational	50%	75

**Table 1:** Demographic details of the athletes.

Interpretation	Percentage	Frequency
Normal	28.67%	43
Affected	71.33%	107

**Table 2:** Showing effect on psychology due to the COVID-19 pandemic using DASS-21.

## Result

Among the total sample population of 150, the incidence of psychologically affected athletes was 107 (71.33%) who had stress, anxiety, or depression whereas 43 (28.67%) athletes were completely normal. Among the affected

population, 50.67% were depressed, 57.33% had anxiety and 34.67% were stressed (Table 3). Here, overlapping has occurred. 36.84% reported moderate level of depression, 32.89% reported mild depression and 23.68% reported severe degree of depression whereas only 6.58% of the surveyed population reported extremely severe depression. 34.88% reported moderate level of whereas 16.28% suffered

from mild level of anxiety whereas severe and extremely severe anxiety made up to a total of 48.84%. Among the stress-affected population, 46.15% reported moderate level of stress, 32.69% reported mild stress and 17.31% reported severe stress whereas 3.85% were seen to suffer from extremely severe stress as reported in Table 4.

Subscale	Frequency (n=150)	Percentage	95% CI
Depression	76	50.67%	42.39% - 58.92%
Anxiety	86	57.33%	49.01% - 65.36%
Stress	52	34.67%	27.09 - 42.86 %

**Table 3:** Showing individuals with depression, anxiety and stress among the affected sample population using DASS-21.

Interpretation	Frequency	Percentage	95% Conf. Limits
<b>Depression* (n=76)</b>			
Mild	25	32.89	22.54% - 44.63%
Moderate	28	36.84	26.06% - 48.69%
Severe	18	23.68	14.68% - 34.82%
Extremely Severe	5	6.58	2.17% - 14.69%
<b>Anxiety (n=86)</b>			
Mild	14	16.28	9.20% - 25.80%
Moderate	30	34.88	24.92% - 45.92%
Severe	17	19.77	11.96% - 29.75%
Extremely severe	25	29.07	19.78% - 29.75%
<b>Stress * (n=52)</b>			
Mild	17	32.69	20.33% - 47.11%
Moderate	24	46.15	32.23% - 60.53%
Severe	9	17.31	8.23% - 30.33%
Extremely Severe	2	3.85	0.47% - 13.21%

**Table 4:** Representing Depression, Anxiety and stress subscale using DASS-21 in Athletes.

\* indicates  $p < 0.001$ , stating statistical significance

According to the Self-reported Physical Activity Questionnaire, it was seen that 64.67% of athletes had an effect on their training due to lockdown and 35.33% did not. 36% practiced aerobic training at home. Second highest of 26% followed High Intensity Interval Training and about 22.67% and 15.33% of strength training and circuit training respectively was found. 50.67% of sample populations surveyed were actively engaged in vigorous activities while 49.33% were not, hence a very minor difference was observed. 58% of the surveyed population have observed an increase in time to complete a mile while jogging as compared to pre-lockdown, although 42%

observe to take the same amount of time indicating positive effect on their endurance. 61.33% of the sample population responded affirmatively to this question indicating increase in their napping duration and frequency, whereas 38.67% responded negatively. 77.33% of the sample population noticed getting fatigued easily while training as compared to before lockdown. 72% of the surveyed population responded affirmatively to this question indicating an increase in their leisure time as compared to pre-lockdown. Around 74.67% of the total sample population contributed in household chores compared to 25.33% who did not contribute. Detailed information along with 95% CI was mentioned in Table 5.

Questions	Response	Frequency	Percentage (%)	95% Conf. Limits
Has there been any impact on your training during lockdown?	Yes	97	64.67	56.45% - 72.29%
	No	53	35.33	27.71% - 43.55%
What type of training were you doing during the lockdown?	HIIT	39	26	19.19% - 33.79%
	Aerobic training	54	36	28.33% - 44.23%
	Circuit training	23	15.33	9.98% - 22.11%
	Strength training	34	22.67	16.24% - 30.21%
Did you do any vigorous activities like aerobics, running, fast bicycling during lockdown?	Yes	76	50.67	42.39% - 58.92%
	No	74	49.33	41.08% - 57.61%
Do you take same amount of time to complete a mile while jogging as you did before lockdown?	Yes	63	42	34% - 50.32%
	No	87	58	49.68% - 66%
Has your napping period increased in duration and frequency during the lockdown?	Yes	92	61.33	53.05% - 69.16%
	No	58	38.67	30.84% - 46.95%
Do you get tired easily as compared to before while training during lockdown?	Yes	116	77.33	69.79% - 83.76%
	No	34	22.67	16.24% - 30.21%
Did you spend most of your time sitting or lying during lockdown?	Yes	108	72	64.09% - 79.02%
	No	42	28	20.98% - 35.91%
Did you do any household chores like scrubbing floors, washing windows, sweeping?	Yes	112	74.67	66.93% - 81.41%
	No	38	25.33	18.59% - 33.07%

**Table 5:** Showing the effect of COVID 19 Pandemic using Self-reported Questionnaire.

## Discussion

The Aim of this study was to observe the effects of lockdown due to COVID-19 pandemic on psychology which includes Stress, Anxiety, Depression and Physical Activity of Athletes. In this study a total of 150 Athletes completed this cross sectional survey.

More than half of the surveyed population experienced Anxiety, among which few experienced moderate to severe degrees of anxiety. Performance anxiety must have increased in athletes due to the decreased practice and interaction between teammates whereas general anxiety maybe career oriented related to negative thoughts of the near future. Some of the other reported areas for which a significant percent of participants reported anxiety might be due to watching COVID-related facts, fear of getting infected, feelings of hopelessness and pessimism, sedentary lifestyle, Exercise reduction and quarantine [14]. In a similar study by Grover S, et al. found that around 2/5th of athletes are experiencing anxiety due to fear of getting COVID-19 considering the worldwide mortality and infection rates but these could also be attributed to media hype and prevailing myths related to COVID-19, there was trouble falling asleep/frequent awakenings, wearing protective equipment even in

open spaces [8].

Majority of the sample population reported increased incidence of depression and among which majorly reported moderate degrees of depression. Change in their level of physical activity due to closure of gyms and training grounds, unsupervised training leading to poor technique and posture affecting safe return to sport, more leisure time leading to weight gain, Lack of sport specific training can be the contributing factors for the same.

More than 50% of athletes faced stress, similar results were observed by Selenia F, et al., concluded that pandemic had strong detrimental impact on perceived stress [2]. Lack of exercise due to unavailability of equipment that athletes need for training could also contribute to the increase in level of stress. Lack of exercise can lead to physical and psychological damage. Rise in stress level could also be a result of change in motivation in athletes as mentioned as supported by Tingaz EO, et al. [15].

The Physical activity questionnaire had three subscales i.e. Sports Activity, Leisure and Household Chores which was used to evaluate the current physical activity level of the athletes. Maximum athletes experienced negative impact

while some had positive impact on their training during lockdown according to self-reported questionnaire which could be due to the confined movement and restrictions imposed by the government leading to difficulty in training. Also, solo training and lack of sports-specific training for athletes participating in team sports may be challenging. Unsupervised training may lead athletes to injuries due to poor technique and posture. In a study by Pillay L, et al., inferred that COVID-19 had physical, nutritional and psychological consequences that may impact on the safe return to sports and general health of athletes [16].

Maximum athletes got tired easily as compared to before lockdown. Factors contributing to this might be the increased weight of athletes due to diet changes as limited or no training was done for long period of time it may have affected their endurance capacity. Fikenzer S, et al. concluded in their study that COVID-19 lockdown lead to a reduction in endurance capacity of elite handball players without team training, despite a home-based strength and endurance program [17]. Childs ERF, et al. found that athletes spent longer time in bed and longer time asleep during lockdown compared to pre-COVID-19 [18]. Maximum athletes did household chores like scrubbing floors, washing windows, sweeping whereas few did not do any of the household activities during the lockdown which might have helped them to reduce their stress levels.

Limitation of this study was comparison of the effects of lockdown in males and females was not done.

## Conclusion

The study concludes that the overall physical activity of the athletes was reduced, and they were vulnerable to mental health problems as they were suffering from depression, anxiety and stress due to the COVID-19 lockdown.

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