

Effects Of Covid-19 Pandemic On Physical Activity Of University Athletes

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Abstract: The covid-19 pandemic, often known as the Corona virus, has wreaked the biggest havoc on the global athletic calendar. All sports leagues and events has been postponed due to covid-19. This thesis is a struggle to find out how covid-19 affected the routines of games practice of young athletes and also what strategies they are using to maintain their physical fitness. The study's aims are to investigate the relationship between covid-19 pandemic and physical activity, as well as the impact of covid-19 pandemic on physical activity. For this purpose, 135 University level athletes completed the questionnaire about covid-19 and physical activity. The information was gathered from three private sector universities: The University of Lahore, The University of Central Punjab, and The University of Management and Technology. In this investigation, an analytical and cross-sectional study approach was adopted with simple random sampling. Moreover, results disclosed that the physical activity had positive effect on athlete performance but the covid-19 had negative effect on physical activity of university athletes. According to results findings it is suggested that players at university level can improve their physical activity by adopting precautionary measures against Covid-19. Covid-19 can decrease the chances to improve the players performance. The results show that the effects of Covid-19 on physical activity have important impact on players performance, therefore this is time to think about the implementations and gain some benefits of it.

Keywords: Athletes, Physical activities, Covid-19 pandemic, Performance.

INTRODUCTION

Corona viruses are a group of encapsulated RNA (Ribonucleic acid) viruses that are widespread in humans and birds. They mostly cause respiratory diseases such as the common cold, pneumonia, and bronchiolitis, but they can also cause neurological, hepatitis, and cardiac disease in certain circumstances. Coronavirus belong to the Corona viridine and its genome size is approximately 26-32 kilobases. It is one of the most numerous all-RNA viruses. Individual corona normally infects their hosts, and cause infections that can be acute or permanent. Infections are mostly

transmitted through the respiratory and faecal-oral routes. Dry cough, fever, shortness of breath, and weariness are the most prevalent symptoms. Coronaviruses feature a distinct crown-like form, which inspired the virus's name. The first human coronavirus was found in 1965. A common cold was the result of it. Later that decade, scientists found a group of human and animal viruses known as crown viruses because of their crown-like appearance. Seven coronaviruses are capable of infecting humans. SARS causing germs were discovered in southern China in 2002 and quickly spread to 28 other countries. Nearly 8,000 persons had been affected by July 2003, with 774 deaths. In 2004, four more cases were recorded as part of a brief outbreak. Fever, headaches, and respiratory problems such as coughing and shortness of breath are all symptoms of this coronavirus. SARS-CoV-2 is caused by a virus called SARS-CoV-2. COVID-19 is a virus that can infect the lungs and cause sickness. It may cause damage to your upper or lower respiratory tract (nose and throat) (windpipe and lungs). It spreads similarly to other coronaviruses, primarily through direct contact between people. The severity of infections varies from minor to severe. The coronavirus is considered to have spread from bats to stray cats and pigs before arriving in people. Although there are several coronavirus variants, only seven of them are capable of infecting humans. Hands should be washed often with soap and water or an alcohol-based hand sanitizer. This disinfects your hands and removes viruses.

Keeping your distance from others is a smart idea. Because you may have and transmit the virus without recognizing it, you should spend as much 4 time at home as possible. If you must go out, keep a distance of at least 6 feet between yourself and others. Cover your lips and nose in public. You can spread COVID-19 even if you don't feel unwell if you have it. To keep people safe, cover your face with a handkerchief. This isn't meant to be a substitute for social isolation. You must maintain a 6-foot gap between yourself and everyone else in the vicinity. Make a conscious effort to avoid touching your face. If they come into touch with surfaces, coronaviruses can persist for several hours. If they get on your hands and come into contact with your eyes, nose, or mouth, they can enter your body. Clean and disinfect the area.

Cleaning with soap and water is a good start, but disinfecting items you come into touch with on a regular basis, such as tables, doorknobs, light switches, toilets, faucets, and sinks, is also important. Use a household cleaner that has been authorized for SARS-CoV-2 or a solution of household bleach and water (1/3 cup bleach per gallon of water or 4 teaspoons bleach per quart of water). When cleaning, use gloves and dispose of them afterward. Due to COVID-19, all major sports tournaments and activities have been postponed or cancelled since early March 2020. Some athletic events were initially scheduled to be staged without spectators in order to decrease transmission through close contact among supporters. The National Basketball Association's season was halted shortly after a player tested positive for COVID-19. Other athletic events were forced to cancel due to restrictions imposed by municipal and state governments on the number of crowds. To protect the health of athletes and others involved in local and international sports events, all games, from marathons to football tournaments, athletics championships to basketball games, handball to ice hockey, rugby, cricket, sailing, skiing, weightlifting to wrestling, and more, must be cancelled or postponed.

For the first time in modern history, the Olympics and Paralympics have been postponed, and will now take place in 2021. The sports industry is predicted to generate \$756 billion in revenue per year. COVID-19 will affect millions of employments, including those in connected selling and sports services firms that work with leagues and tournaments. Travel, tourism, infrastructure, transportation, catering, and media broadcasting are just a few examples. Professional athletes are also under pressure to reschedule their training while seeking to stay healthy at home, and they risk losing professional sponsors who may not be able to help them.

LECTURE REVIEW

Waris A, et al., (2020) concluded that COVID-19 was disseminated by SARS-CoV-2 in Wuhan, China, and soon expanded to 208 countries/districts, including the United States, the United Kingdom, Italy, Spain, and Pakistan. Pakistan's current status is unacceptable, as it is a densely populated country in need of additional aid. Pakistan is an agricultural country with a weak financial situation when compared to China, the United States, the United Kingdom, and Russia in the COVID-19 episode. The requisite number of clinics and isolation offices is not being met. If these clinical offices improve, it will be much easier to manage the spread of illnesses and the treatment of patients. Currently, the testing offices are well below the required level.

The testing centers might grow by five to ten (5 to 10) folds. The proper steps should be followed to handle the situation, for example, staying at home, lockdown, social separation, applying sanitizers, and wearing facial protection when necessary. Pakistan needs more screening offices for both arrivals and departures. Pakistan is expected to outperform the COVID-19. Gilat R, et al., (2020) expressed that COVID-19 episode has carried our lives to an unexpected and complete lockdown. While the quantities of affirmed cases and passing's keep on rising, individuals around the globe are making valiant moves to moderate transmission and save lives. The job sports play in this pandemic is remarkable, entrancing, and uncovers the massive effect sports has on each part of our lives. We should all do our part to keep each other protected until this flare-up dies down and sports and humankind are back to being more prominent than at any other time.

Li Q, et al., (2020) in Wuhan, Hubei Province, China, In December 2019 and January 2020, new Covid (2019-nCoV)-tainted pneumonia (NCIP) cases were reported. To assess the epidemiologic aspects of the condition, we evaluated data from the first 425 validated NCIP patients in Wuhan. For research facility-confirmed NCIP occurrences that were accounted for by January 22, 2020, we acquired information on segment characteristics, openness history, and illness timings. We displayed case characteristics and evaluated major epidemiologic time-defer dispersions. In the early phases of amazing development, we examined the plague multiplication time and the crucial conceptive number. It is estimated that almost 425 patients of tainted pneumonia have an age of 59 years, while 56% them were males.

In January 2020 mostly covid19 was seen in those people who use sea food regularly in their diet, 8.6 % effected people's data was collected after breeding 5.2 days sea food while this ratio increase 95% when days increases to 12.5. In its pre stage, this ratio increases with every 7.4 days. When we collect a mean value of day, the critical regeneration number was calculated to be 2.2. (95

percent CI, 5.3 to 19). (1.4 to 3.9 with 95% of confidence interval). Since the middle of December 2019, there has been 13 evidences of transmission from person to person is occur when they are in close contact with each other, according to this data. If comparable qualities exist elsewhere, major preventive actions will be required to address incidents. Those groups of people which are in severe condition, should follow precautions. World Health Organization, (2020) Frank, Fatke, Frank, Förstl, & Hölzle. (2020) While some athletes may be capable of improving on their past coping skills, others may experience a negative response that lasted at least weeks or months. While some anxiety of the coronavirus is natural, excessive concern or stress can have a significant impact on day-to-day living. Psychologists have identified various mental illnesses during epidemics: fear of infection, anxiety about physical recovery if infected, lack of access to fitness centers, poor sleep, eating disorders, 20 obsessive-compulsive disorder, and family conflicts. Short- or long-term depression can result from an incapability to control stress and a deficiency of appropriate coping abilities.

Yousfi N, et al., (2020) Conclude that the World Health Organization (WHO) proclaimed the outbreak of a new coronavirus responsible for the ailment COVID-19 a worldwide public health emergency on January 31, 2020. Countries throughout the world have implemented a variety of steps to restrict the spread of the coronavirus, including school and institutional closures, lockdown, and targeted quarantine for suspected sick persons. More than a third of the world's population has been confined to their homes less than four months after the pandemic began. The purpose of this post is to provide advice to healthy persons and athletes who are on a strict diet and exercise regimen in order to be healthy, safe, and fit. The recommendations in this article might help anyone who is trying to maintain excellent physical and mental health while under lockdown, quarantine, or restricted movement (movement control order). Boosting the immune system is critical for confined persons, especially confined athletes, during these times. Specific guidelines for increasing the immune system through physiological and psychological control must be followed. This article examines the available scientific evidence in order to suggest a practical approach, with a focus on nutrition, intermittent fasting or caloric restriction, vitamin D deficiency, sleep patterns, exercise, and psychodynamic factors as factors affecting the immune system and human health in general.

The present COVID-19 epidemic is certainly a global public health issue. The Covid-19 epidemic, often known as the Corona Virus, has just caused the most severe interruption to the global athletic schedule since World War II. Sports events have been cancelled or postponed to varied degrees throughout the world. The Summer Olympics in Tokyo in 2020 have been postponed until 2021. There are no games to watch and no games to play for spectators or players. The epidemic has significant long-term ramifications for people's daily life, health, and sports, in addition to its terrible immediate and mid-term health effects. Some latest studies in the field of physical educations have been reported in (Aamina et al., 2020; Aqsa et al., 2020; Aqsa et al., 2021; Farwa et al., 2021; Hira et al., 2021; Iqbal et al., 2019; Rabia et al., 2021; Saadia et al., 2021; Salma et al., 2020; Sana et al., 2021; Threem et al., 2020).

Objectives: This research has been carried out under the following objectives: To determine the relationship between covid-19 pandemic and physical activity. To determine the impact of covid-19 pandemic on physical activity.

RESEARCH METHODOLOGY

Analytical and cross-sectional study design has been used for data collection from three private sector universities. Population is 200 and Sample size is 135, simple random sampling has been used. Only athletes of 18 to 25 years of age have been included in the study. Only private universities are included. Athletes of less than 18 and more than 25 years of age have been excluded from the study. Public sector universities are excluded.

Sport under covid-19 professional survey available on <https://www.surveymonkey.com/r/WY98VS3> and Physical Activity Baecke, JAH., Burema, J., Frijters, ER. (1982), a short questionnaire for the measurement of habitual physical activity in epidemiological studies were used. Data was gathered personally after formal clearance was received from the relevant authorities to proceed with the project. Survey research is used by researchers to find students who are willing to participate in this research and meet the study's objectives. The participants were informed about the study's goal and nature, and their confidentiality was guaranteed. Statistical analysis has been conducted by using SPSS version 23.0. Collected data be reported frequency distribution, mean value \pm standard deviation, find the relationship between the variable using Pearson correlation test and find the impact of variables using regression analysis.

RESULTS

In all big city sports activities take place every year, even at university level it gains popularity in sports lover. Like other universities, UOL, UMT & UCP are tacking sound part to promote games at high level. There are some factors which are affecting players performance which can figure out. Now a days the most important factor is covid 19 which effect badly every field of life. There for, a sample of 135 students of 18-25 years age of university level is selected to execute the result of covid-19's effect on sports.

To find out the consistency of the collected data, Cronbach' Alpha reliability test was applied and results are reported in Table 1.

Table 1 Reliability statistics of both the scales (n=135)

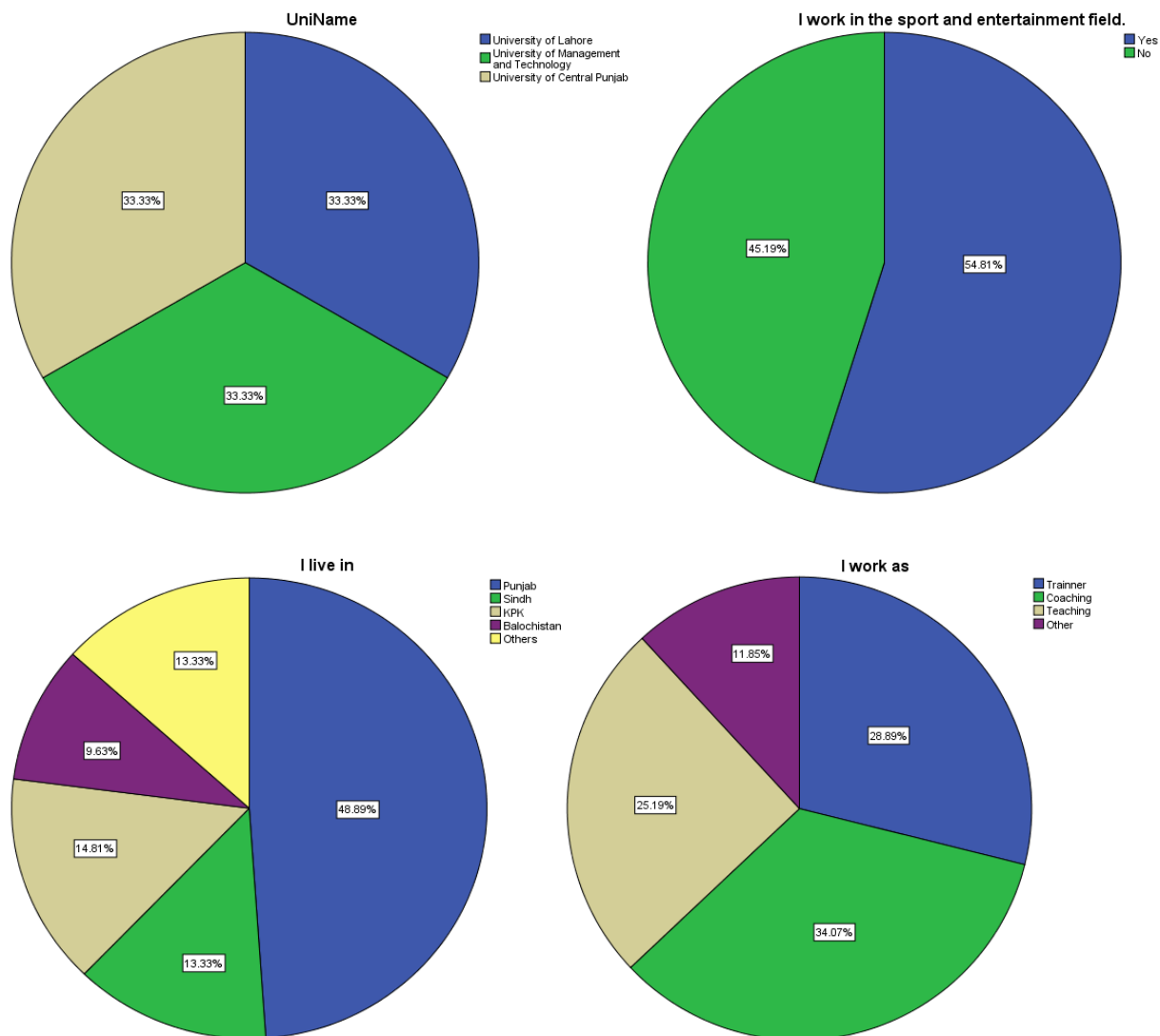
Scale	No. of Items	Reliability Statistics
Sport Under COVID-19 Professional Survey	16	0.79
Physical Activity	22	0.71
Overall	38	0.92

According to the results overall Cronbach, Alpha reliability statistics 0.92, which is in excellent range. Therefore, it is concluded that the response data of students at university level is consistent. The Shapiro-Wilk test was used for analyzing the normality of scales. Shapiro Wilk test is significant value of sport under COVID-19 professional scale which is 0.137 and Physical activity scale is 0.104 which is greater than 0.05 that shows the data is normal reported in table 2.

Table 2 Normality statistics of both the scales (n=135)

Scales	Shapiro-Wilk		
	Statistic	df	Sig.
Sport Under COVID-19 Professional Survey	0.973	120	0.137
Physical Activity	0.973	120	0.104

Figure 1 Demographic variables of current study



The above figure shows the demographic variables of current study, top left pie chart shows the frequency distribution and percentage of the students of different universities, top right pie chart shows results during work in the sports and entertainment field 54.8% students agree with yes statement while 45.2% are with no, bottom left pie chart shows data collected from students of different provinces at university level it was observed and bottom right pie chart shows observation of people of different fields.

To find out the relationship between covid-19 and physical activity of players performance in University of Lahore, University of Management and Technology & University of Central Punjab the Pearson correlation is applied, and the result are discussed in this section. Score variable of work index coefficients, sports index coefficients, leisure index coefficients, simple sports score and mean value of covid 19 scale are generated on the basis of responses given by the students through Pearson correlation measurements scale. The descriptive statistics are discussed below.

Table 3 Descriptive Statistics

	Mean	Std. Deviation
Work Index Coefficients	2.9861	0.37769
Sports Index Coefficients	2.8963	0.56017
Leisure Index Coefficients	3.0130	0.48226
Simple Sports Scores	2.8658	1.52815
Mean vales of COVID scale	2.9488	0.25856

Table 4 Coefficients of correlation. (n=135)

			1	2	3	4	5
1	Work Index Coefficients	Pearson Correlation Sig. (2-tailed)	1	0.088 0.031	0.048 0.057	-0.069 0.042	0.27 0.007
2	Sports Index Coefficients	Pearson Correlation Sig. (2-tailed)		1	-0.105 0.022	-0.088 0.031	-0.069 0.017
3	Leisure Index Coefficients	Pearson Correlation Sig. (2-tailed)			1	-0.082 0.034	-0.23 0.008
4	Simple Sports Scores	Pearson Correlation Sig. (2-tailed)				1	0.024 0.001
5	Mean vales of COVID scale	Pearson Correlation Sig. (2-tailed)					1

The correlation coefficients of five study variables are listed in Table 4, This table shows that the Covid-19 has low level correlation ($r= 0.27$) with work index which is positive and significant. Covid-19 has no correlation ($r= -0.069$) with sports index which is negative and significant. Covid-19 has low level correlation ($r= -0.23$) with leisure index which is negative and significant. Covid-19 has no correlation ($r= 0.024$) with simple sports score which is positive and significant.

To analyze the effect of COVID-19 on physical activities, the regression analysis is applied to the study variables.

Table 5 Model Summary of study variables (n=135)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.024 ^a	.001	-.007	1.53344	2.004

a. Predictors: (Constant), Mean vales of COVID scale, b. Dependent Variable: Simple Sports Scores

In the column labeled are the values of the multiple correlation coefficients between the predictors and the outcome which is 0.024. The next column gives us a value of R^2 , which is measures of how much of the variability in the outcome is accounted for by the predictors. For the model its value is 0.001, which means that covid scale accounts for 1% of the variation in simple sports scores. The adjusted R^2 gives us some idea of how well our model generalizes and ideally, we would like its value to be the same, or very close to, the value of R^2 . In this example the difference for the final model is small.

Finally, the Durbin–Watson statistics it will be found in the last column of the table. This statistic informs us about whether the assumption of independent errors is acceptable. As a conservation rule, suggested that values less than 1.5 or greater than 2.5 should definitely raise alarm bells. The data value is 2.004, which is in the range of 1.5-2.5 that the assumption has almost certainly been met.

Table 6 Analysis of Variance for Significance of the Model (n=135)

Model	Items	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.183	1	.183	.078	.081 ^b
	Residual	312.741	133	2.351		
	Total	312.925	134			

a. Predictors: (Constant), Mean vales of COVID scale, b. Dependent Variable: Simple Sports Scores

The change statistics are provided only if requested and these tell us whether the change in R^2 is significant. The significance of R^2 can actually be tested using an F-ratio. The change in the amount of variance that can be explained gives rise to an F-ratio of .078. The change statistics therefore tell us about the difference made by adding new predictors to the model.

The next part of the output, which contains an ANOVA that test whether the model is significantly better at predicting the outcome than using the mean ‘best guess’. Specifically, the F-ratio represents the ratio of the improvement in prediction that results from fitting the model, relative to the inaccuracy that still exists in the model. Thea average sum of squares is then calculated for each term by dividing the square sum by the df and F-ratio is .078. We can interpret these results as meaning that the model predicts the outcome variable.

Table 7 Regression Coefficients of the models (n=135)

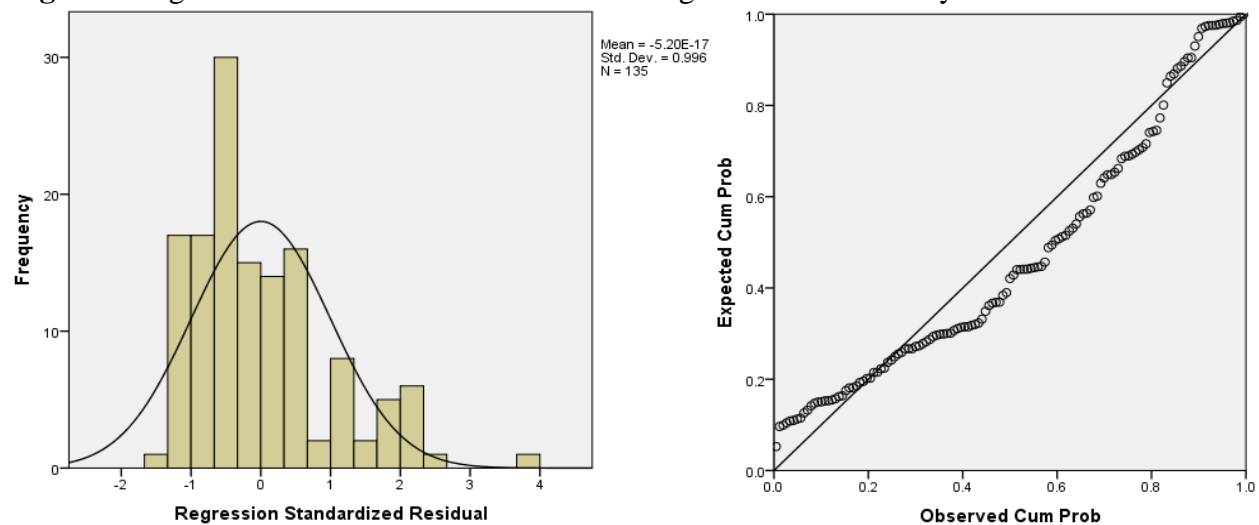
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.444	1.517		1.612	.109
	Mean vales of COVID scale	.143	.512	.024	.279	.781

The regression coefficient (β), Standard error of the estimate (SE), t statistics value and significant value for model- 1 is listed in table- 12. The β (slope) coefficient for model has ($\beta = .143$) value, which indicates that covid scale has positive impact on players performance.

On the basis of above results listed in the table 8-10 the fitted regression models can be expressed as given below.

Model: Physical Activity = f (Covid – 19) + Random Term
 PA = 2.44 + 0.143(Covid – 19)

Figure 2 Regression standardized residual and histogram of current study



Left side of figure 2 shows the histogram and normal probability plot of the data for the current example. The histogram should look like a skewed distribution. SPSS draws a curve on the histogram to show the shape of the distribution. For the mean performance data, the distribution is roughly. The Means of performance is -5.20E-17, Standard deviation 0.996 and n=135. The Left side of figure 2 shows straight line in this plot represents a normal distribution, and the points represent the observed residuals. Therefore, due to the skewed distribution data set, all points lie near the line. This is pretty much what we see for the mean performance data.

DISSCUSSION

To combat the spread of COVID-19, Greece employs some of Europe's most harsh and draconian measures. Nonetheless, according to the current study, establishing a temporary lockdown in Greece is substantially associated to negative changes in PA in terms of daily occupational, transportation, and sporting activities, with a total PA loss of 16.3%. (95 percent CI, 17.3 to 15.4).

Another fascinating finding of this research is that, while total inactivity rose during lockdown, it did so unevenly, with male and high PA respondents facing a disproportionate part of the load. As a result, it is clear that the previous WHO PA guidelines, which were widely disseminated on various Greek government public health authority websites, were insufficient in encouraging widespread PA.

Furthermore, the drop in PA has long-term implications for the rate of advancement of NCDs, general public health, and healthcare systems, highlighting a social concern that needs to be investigated further. Bourdas D I, Zacharakis E D. (2020). Almost every firm has faced new hurdles as a result of the COVID-19 outbreak. Many businesses, among other things, had economic and financial difficulties, which eventually led to their demise. Soccer clubs, in particular, are no exception. Solutions were sought across the board because enterprises can adapt flexibly to problems, which is a big advantage of market-based systems. The soccer leagues have shown incredible financial flexibility while keeping to statutory limits by finishing the 2019/2020 season as 'ghost games.

Learning has had an influence on all domains, and more changes are on the way. Professional soccer teams have been urged by COVID-19 to recognize that they are not just reliant on one another, but also on fans in a number of ways. Spectators contribute money to the soccer business, and because they help to create the distinctive stadium ambiance, they should be considered a part of the manufacturing process rather than just a demand source. If this professional soccer crisis has a silver lining, it is that clubs will become more cognizant of the industry's interdependencies. Additionally, firms in the team sports sector must strengthen their resilience, which may be accomplished by, for example, growing their stock base. 'UEFA or national league organizations may strive for this goal in future licensing procedures.' Despite the sector's inherent incentives, which (may) lead to undercapitalization and overinvestment, corporate accountability must not be overlooked in times of crisis.

Professional soccer teams should be professional enough to plan for crises, even if they arise unexpectedly, for commercial purposes. State help utilizing public funds is not economically warranted for this business, which is not cash-strapped, and is legally problematic from a state aid standpoint. Drewes M, et al., (2020). All around the world, COVID-19 has caused the closure of gyms, stadiums, pools, dance and fitness studios, physiotherapy clinics, parks, and playgrounds. As a result, many people are unable to participate in their preferred sports or physical activities outside of their houses, whether alone or in groups. As a result of these situations, many people become less physically active, spending more time on screens, having inconsistent sleep habits, and eating poor diets, resulting in weight gain and a loss of physical fitness. The study's goal is to evaluate how covid19 influences university athletes' physical activity. Covid-19 has a negative influence on athlete and sports performance. The key points of the study are listed below:

- At first step 135 players are selected and at second step 45 players from each University (UOL, UMT, UCP) are selected.
- Range of the age of the players 18-25 years.

- I work in the sports and entertainment field, 54.8% of the students say yes and 45.2% of the students say no.
- I live in, 48.9% of the students from Punjab, 13.3% of the students from Sindh, 14.8% of the students from KPK, 9.6% of the students from Baluchistan and 13.3% of the students from others.
- I work as, 28.9% of the students are trainer, 34.1% of the students are coaching, 25.2% of the students are teaching and 11.9% of the students from others.
- Covid-19 Scale generated the results on the basis of responses against each statement 3.45 ± 0.54
- Physical activity generated the results on the basis of responses against each statement 29.98 ± 0.61 .
- Covid-19 Scale and Physical activity has high correlation ($r = -0.56$) which is negative and significant.
- Covid-19 and leisure index have low correlation ($r = -0.23$) which is negative and significant.
- Covid-19 and sport index have no correlation ($r = -0.069$) which is negative and significant.
- Covid-19 and work index have high correlation ($r = 0.27$) which is positive and significant.
- The following regression model (equation) is formulated to quantify the impact of COVID-19 on players performance of the University level players. $Physical\ Activity = f(Covid - 19) + Random\ Term$
 $PA = 2.44 + 0.143(C - 19)$
- In linear regression having one predictor C-19 have negative regression indicating that decreasing PA.

CONCLUSION

This study has been conducted on the players of University of Lahore, University of Central Punjab & University of Management and Technology in Lahore. The determination of the study is to measure the effects of covid-19 on Physical Activity at university level players. Effects of covid-19 on sports and players performance are negative. According to the results findings Covid-19 Scale and Physical activity has high correlation ($r = -0.56$) which is negative and significant. The following regression model (equation) is formulated to quantify the impact of COVID-19 on players performance of the University level players. $Physical\ Activity = f(Covid-19) + Random\ Term$
 $PA = 2.44 + 0.143(C-19)$

Recommendations: The goal of the study is to help researchers, students, and sport departments enhance player performance by using preventative measures. • This study suggested that players at university level can improve their physical activity by adopting precautionary measures against covid-19. • The results show that the effects of covid-19 on physical activity have important impact on players performance, therefore this is time to think about the implementations and gain some benefits of it. • The study will also be helpful for students and players to adopting precautionary measures against covid-19. • Additional research might be conducted throughout Punjab.

Limitations: The research study is analytical cross sectional and is the results response of the University level players in Lahore. The students are restricted to provide correct response according their level of understanding. This study is limited to UOL, UMT & UCP players.

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