Original Article



http://hnpublisher.com

Effects of Covid-19(OBESITY): Result of Imbalance Nutrition and Physical Inactivity during Covid-19(Athletes and Non-Athletes)

Sajjad Ali Gill¹, Muhamamd Bilal², Muhammad Saleem Akhtar³

¹Associate Professor, Department of Sports Sciences and Physical Education, University of the Punjab, Lahore ²MPhil Scholar, Department of Sports Sciences and Physical Education, University of the Punjab, Lahore ³PhD Scholar, Department of Sports Sciences and Physical Education, University of the Punjab, Lahore Correspondence: sajjad.sspe@pu.edu.pk¹

ABSTRACT

Aim of the Study: The present research discovers the penalties of Covid-19 for health syndromes, particularly obesity as it has been effected by out of proportion diet. It is not only concerned with a wholly to imbalanced diet, athletic performance, socialism, and restless daily life activity.

Methodology: A survey was conducted on the Lahore population (colleges and Universities) with a targeted sampling method utilized with 150, 150 males and females aged 18-40 age group respectively. A total of twenty-five (25) self-made questionnaires were circulated through social media, Whatsapp, email, and other helpful software for data collection and established responses (N=200) through questionnaires.

Findings: The values tested at 5% and its outcome was positive, which showed significance at this level. The Statistical Package for Social Sciences (SPSS) is utilized for comparison and the Chi-square test is used to get information from respondents. The data reliability has been calculated by Cronbach's Alpha whose value was 0.86.

Conclusion: The research concluded that Covid-19 affected the daily routine and ingestion actions of the people which have increased the obesity level among male and female athletes and non-athletes.

Keywords: Obesity, Imbalance diet, Inactivity.

Introduction

Covid-19 disease has produced a global crisis, which put together the whole world to put into operation and implement a quarantine state in which freedom of movement is restricted. It not only effected the bounding of socialism community but its major damaged the health of athletes (human being) especially athletes which resulted in depositing the extra nutritional value in the form of deposition hence resulted in obese (Abbas et al., 2021; del corral et al., 2023).During this period athletes could not perform their professional work in the usual way. During pandemic season stop the continuous exercise routines of athletes have been interrupted, obesity has been achieved due to a number of reasons (Pena et al., 2021),



Received: March 13, 2023

Revised: June 17, 2023

Accepted: June 19, 2023

Published: June 23, 2023 which have many core symptoms few of them are cut down physical activities such as epoch, gender, diseases, High fat accumulator, triglycerides, health and fitness disorders, chronic injuries (not properly rehabilitated), high blood glucose and random glucose etc (Gill et al., 2019; Abbas et al., 2021: Gill et al., 2021; Gill et al., 2022). This sudden change resulted in immobilization and the quality and quantity of training of athletes. The consequence of prolonged physical inactivity has many effects on the physical performance of the players. Study covers that during Covid-19 lockdown cardiovascular reaction with 28% normal misfortunes of VO2max and 11% in heart volume additionally is by all accounts hindered by long resting periods. Finally, the home based training program had been adopted to get rid of this probing & divesting curse (Del corral et al., 2023).



Fig.1. (Left) Map of country area included in the survey sample frame highlighted in different colors. (Top Right) indicated the First wave COVID-19 daily case ratio in 2020 across the country. During this period when a complete lockdown was imposed everywhere the survey was fielded. (Bottom Right) indicated the second wave of COVID-19 daily case ratio in 2020. During this pandemic period of time the survey was also fielded.

The COVID-19 pandemic has influenced numerous areas of our worldwide society since its recognition and group activities have been no more abnormal to this reality. Corona virus resulted in the suspension of games, conclusion of exercise centers and wellness focuses, and limitations on open air exercises which ultimately led to obesity. These elements drove soccer players to change their activity projects and train at home, the majority of which are not directed by medical staff or mentors. About twenty percent (20%) athletes and non-athletes affected in most of the countries faced a course of overweight and obesity during this quarantine era. A few countries have experienced a reduction in the occurrence of individuals with overweight/obesity. In spite of the exertion of the groups training, the incorporation of focused energy running activities relied upon the states of home imprisonment for most of athletes. Therefore, the execution of explicit removals like speed increases/decelerations, runs, and course adjustments were hard to perform at home (Moreno-Perez et al., 2020). It is a matter of fact that reduction in training occurs at the end of the major event, as of injury or illness. In addition, "de-training" conditions are ordinary and are not same to the circumstance brought about the detention in the initial stage of the COVID-19 pandemic, regardless of the self training directed along with excess of food and especially litter which lead to increase problems of athletes as well as increase in bodyweight, isometric and kinetic training (Eirale et al., 2020).

The intensity of the training duration contrasted for different preseason. Moreover, different kinds of training along with exercises are not linked to one another as concerned with the specific games and training sessions as well. If a proper training is done in isolation then it not only influences on physical illness but also mentally frustrated which a key factor is also of generate tension. The collectives players under gown by tactics and strategies and they are well prepared for the performance and matches. A major factor was that these collective conditions could not be directed in friendly matches, something that is done in the pre-season. As a result nothing is done during this covid-19 era restricted athletes not only for their competitions, matches and practice, but also the physiological and tactical volume was affected. (de Souza et al., 2020; Brito Souza et al., 2020). But training with and without possession (equipments, ball etc) of the neuromuscular coordination is not very akin (Palucci Vieira et al., 2019).

Objectives

- Circulate knowledge (Educate) how to manage themselves in such kind of situation
- To spread information about essential nutrition during covid-19.
- Educate athletes how to manage & maintain fitness
- Home based and indoor facilities best utilization sessions

Methodology

This study is survey research and it was a quantitative study in which questionnaires were utilized. 25 self made questions were developed to collect the data and along with an expert opinion utilized to check its validity. The reliability was checked through Cronbach's Alpha and its value was 0.86. The data was collected through online forms, E-mail, Facebook accounts, Whats-up and Instagram and other social interaction software's. 200 respondents have given the relevant and updated information for further analysis in which 35% were male and 65% were female athletes, which has been further used in analysis process through Statistical Package for social Sciences (SPSS-26) software.

Research Question

Is obesity is developed through imbalance diet and inactivity during COVID-19 Pandemic?

Hypotheses

H0: Imbalance diet and inactivity is the cause of obesity

H1: Imbalance diet and inactivity is not the Major cause of obesity

Post Confinement Competition

The return of the teams to the post-confinement competition could be relied on consistency in performance resulted into decrease in the force and speed competition. In the event that we add to this the absence of a group of people and the impact on the competitions performed on the home ground as well as away (Lago-Penas et al., 2019) the observation of the outsider viewer would be of a decline in the conditional play performance rhythm. At the point when a competitive league ends under typical conditions players go on siestas for around a month; still, wellness level may be kept up with part of the way by clinging to individual training programs (Mohr et al., 2020). Focusing on a constricting the rot of perseverance and neuromuscular-related performance parameters (Silva et al., 2016). Following the off season duration, clubs may ordinarily assign around a month and a half to preseason group training including training games. In this manner, the critical conditions in many nations during the COVID-19 period have constrained players into an individual course of "self-administration" under exceptionally limited conditions (Kalinowski et al., 2021). From that point, training has been finished in small gatherings for half a month in certain nations preceding firing up the ordinary group training possibly enduring half a month prior to the resuming of the period. The Table 13 below showed the complete information during this pandemic disease. The present circumstance is profoundly not at all like ordinary slow time of year and preseason situations, which impacts both the likelihood of ideal performance (Lim and Pranata, 2021).

	Athletes	Healthy Individual	High risk individual
Issues brought about by the COVID-19 pandemic	No competition and game or match	No outdoor training	Antagonistic wellbeing and mental results
	No team or group training	lack of gym and fitness center facility	Chances of sedentary lifestyle and physical inactivity
	No training facilities	Chances of sedentary lifestyle and physical inactivity	
	Training at home without proper guidance		
Effects of physical inactivity	Declined physiological capacities (e.g., musculoskeletal, neuromuscular, respiratory, and cardiovascular framework)	Negative weight structure (diminished bulk and expanded fat mass)	Negative weight structure (diminished bulk and expanded fat mass)
	Deconditioned actual capacities (e.g., power, strength, flexibility, speed, and endurance)	persistent medical conditions	Diminished performance of ADLs (e.g., eating, dressing, showering, toileting, and step climbing)
Focus during lockdown quarantine	Keep strong fitness level	develop productivity	endurance performance of ADLs
	Keep good body mass composition	Avoid weight gain	keep quality of life
	increased risk of injury	Engage in active lifestyle	
	Reduced performance		
Health issues back to normal activities during COVID-19	Increased risk of injury	Develop chronic diseases	expanded mortality and morbidity
	Reduced performance		increased risk of fall
			minimized quality of life

Table 1: Athlete's perception during Covid-19

Data Analysis and Interpretation

Gender	Number	%	Age	%
Male	129	64.5	18-30	79.5
Female	71	35.5	31-40	20.5

Table 2: Distribution of participants' Gender, age and genders according to demographic variables.

Total numbers of respondents are 200 out of them 139 are male and 71 females. According to age 159 respondents are 18-30 years old, and 41 respondents are 30-40 years old. The response of all the candidates indicates that due to lockdown the players could not undergo proper training which has had a profound effect on the performance of the soccer players.

Table 3: Chi-Square values about the question (Did you actively and regularly participate in online training session at home?)

Statement	Observed Numbers				\mathbf{X}^2	Р	
Did your actively and regularly participate in	SA	Α	Ν	D	SD	25.7	0.000
online training session at home to get rid of	21	21	7	8	2		
obesity?							

Table 3 highlighted that the respondent's results about the question (21 people strongly agree, 21 Agree, 7 Neutral 8 Disagree and 2 people are strongly disagree. Chi-square test value reveals that a significant difference between (p=.000) scores of the perception about the statement (X^2 =25.7)

Table 4: Chi-Square values about the question (Before Covid-19 Lock Down did you practice regularly?)

Statement	()bserv	ed Nu	\mathbf{X}^2	Р		
Before Covid-19 quarantine did you practice	SA	А	Ν	D	SD	25.3	0.000
regularly and take organic food	50	6	1	2	0		

Table 4 highlights the respondent's results about the question (50 people strongly agree, 06 Agree, 1 Neutral 2 Disagree and 0 People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.000) scores of the perception about the statement ($X^2=25.4$) Before Covid-19 quarantine did you practice regularly?

Table 5: Chi-Square values about the question (During lockdown did you perform Aerobic exercise at home?)

Statement	Observed Numbers					\mathbf{X}^2	Р
During lockdown did you perform Aerobic	SA	А	Ν	D	SD	25.66	.000
exercise at home with balance diet	11	14	30	4	0		

Table 5 highlights the respondent's results about the question (11 people strongly agree, 14 Agree, 30 Neutral 4 Disagree and 0.People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.000) scores of the perception about the statement

Table 6: Chi-Square values about the question (Did you practice physical activities after getting online training lecture during pandemic?)

Statement	Obser	ved N	\mathbf{X}^2	Р			
Did you practice physical activities after getting	SA	А	Ν	D	SD	19.9	.001
online training lecture during pandemic?	02	09	21	9	18		

Table 6 highlights the respondent's results about the question (02 people strongly agree, 16 Agree, 28 Neutral, 12 Disagree and 11People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.001) scores of the perception about the statement (X^2 =19.9).

Table 7: *Chi-Square values about the question (Did you spend your time on walking activities on a day at home?)*

Statement			ved N	\mathbf{X}^2	Р		
Do you like junk food and spend less time on walking activities on a day at home during Covid-	SA 02	A 16	N 28	D 2	SD 11	40.1	0.000
19?	02	10	20	2	11		

Table 7 highlights the respondent's results about the question (02 people strongly agree, 16 Agree, 28 Neutral, 12 Disagree and 11People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.000) scores of the perception about the statement (X^2 =40.1)

Table 8: Chi-Square values about the question (Did you spend your time in moderate intensity physical activities on a day during lockdown?)

Statement		Obser	ved N	\mathbf{X}^2	Р		
Did you spend your time in moderate intensity	SA	А	Ν	D	SD	13.3	0.010
physical activities on a day during lockdown with	5	14	6	14	20		
fewer intakes of calories?							

Table 8 highlights the respondent's results about the question (05 people strongly agree, 14 Agree, 04 Neutral, 06 Disagree and 20 People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.010) scores of the perception about the statement (X^2 =13.3)

Table 9: Chi-Square values about the question (Did players spend their time in vigorous intensity physical activities in pandemic?)

Statement		Obse	\mathbf{X}^2	Р			
Did players spend their time in vigorous	SA	А	Ν	D	SD	41.3	0.000
intensity physical activities in pandemic?	1	4	07	21	26		

Table 9 highlights the respondent's results about the question (01 people strongly agree, 04 Agree, 07 Neutral, 21 Disagree and 26 People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.000) scores of the perception about the statement (X^2 =41.3)

Table 10: Chi-Square values about the question (Did you face some psychological problems during quarantine?

Statement		Obser		\mathbf{X}^2	Р		
Did you face some psychological & Physiological	SA	А	Ν	D	SD	28.8	0.002
problems during quarantine in performing	23	20	9	4	3		
physical activities							

Table 10 highlights the respondent's results about the question (23 people strongly agree, 20 Agree, 09 Neutral, 04 Disagree and 03 People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.002) scores of the perception about the statement (X^2 =28.8)

Table 11: Chi-Square values about the question (Your Online Training coach didn't give you any plan for Aerobic Exercise for home base training?

Statement	Observed Numbers					\mathbf{X}^2	Р
Did your coach give you proper diet and exercise	SA	А	Ν	D	SD	14.4	0.002

Table 11 highlights the respondent's results about the question (13 people strongly agree, 27 Agree, 0 Neutral, 11 Disagree and 08 People are strongly disagree. Chi-square test value reveals that a significant difference between (p=.002) scores of the perception about the statement (X^2 =14.4)

Results

Table 12: Frequency Distribution of responses

Sr#	Statement	SA	Α	Ν	D	SD
1	Did you actively and regularly participate in online training session at home?	02	09	21	9	18
2	Before Covid-19 quarantine did you practice regularly?)	50	6	1	2	0
3	During lockdown did you perform Aerobic exercise at home?)	11	14	30	4	0
4	Did you practice physical activities after getting online training lecture during pandemic?)	02	09	21	9	18
5	Did you spend your time on walking activities on a day at home?)	02	16	28	2	11
6	Did you spend your time in moderate intensity physical activities on a day during lockdown?)	5	14	6	14	20
7	Did players spend their time in vigorous intensity physical activities in pandemic?)	1	4	07	21	26
8	Did you face some psychological problems during quarantine?	23	20	9	4	3
9	Your Online Training coach didn't give you any plan for Aerobic	13	27	0	11	8
	Exercise for home base training?					
10	Did your coach not treat you better during quarantine training session?)	12	17	2	20	8

Discussion

The pandemic disease (Covid-19) nor only effected the human globe community but its major symptoms are appeared in sports era. Numerous researchers identified the excess the junk food utilization in the lock down period which resulted in extra storage of fatty acid, thus lead to obese structure. Our result is familiar with the Eirale et al., 2020. Similarly, extra nutritional values which abstracted as a result of non-cardiovascular activities for sports community the finding are also over lapping with (Abbas et al., 2021; del corral et al., 2023 and Pena et al., 2021). Finally, the injured sports personnel and rehabilitation protocols also affected the training sports athletes to obese stage, same findings were mentioned by (Gill et al., 2019; Abbas et al., 2021: Gill et al., 2021; Gill et al., 2022 & del corral et al. 2023). As the physiological and tactical capacity is damaged at that time period it was also mentioned by the famous researchers (de Souza et al., 2020; Brito Souza et al., 2020) and results are in same dimensions.

Conclusion

In view of our results, we can establish that the current isolate has contrarily affected, and greatly affects the athletes biological system have made a heap of difficulties for the elite game, including returning ideally and securely to competitive especially in cardiovascular and real time implementation. Indicators of physical exertion in matches restricted not only in performance but also affected the weight management problems like obesity. It is because of Covid-19 were essentially lower at medium and extreme intensities especially for athletes. Our research result reveals that the majority of the players agree that Covid-19 lockdown has badly affected their physical health, fitness and performance. Probably, players didn't encounter the best conditions, during training cut off position in post Covid-19, which renewed introduction to collective training sessions especially evoke home based intellectual sessions and programs. Hence, it has been concluded that if such kind of situation captured the globe so, coaches must

be focused on different tactics, strategies, home made plans and physical activities such as using rotations in the starting line-ups and making reasonable replacements which not only to maintain the intensity levels of their teams but also get rid of this curse of obesity. These activities and proper arrangements together could assist with acquiring better execution during the official competitions and performance.

Recommendations

- Promoting healthy eating habits and encouraging exercise
- Developing public policies that promote access to healthy, low-fat, high-fiber foods
- Training healthcare professionals so that they can effectively support people who need to lose weight and help others avoid gaining weight
- Here's what you can do to lose weight or avoid becoming overweight or obese:
- Eat more fruit, vegetables, nuts, and whole grains.
- Exercise, even moderately, for at least 30 minutes a day.
- Cut down your consumption of fatty and sugary foods.
- Use vegetable-based oils rather than animal-based fat

Acknowledgments

None.

Conflict of Interest

Authors declared no conflict of interest.

Funding Source

The authors received no funding to conduct this study.

ORCID iDs

Sajjad Ali Gill ¹ https://orcid.org/0000-0002-8936-6900 Muhammad Bilal ² https://orcid.org/0000-0002-5945-0968 Muhammad Saleem Akhtar ³ https://orcid.org/0000-0001-6819-6220

References

- Abbas, K., Gill, S. A., Sherwani, R. A. K., Qazi, T., Feroze, N., Adil, R., and Shahid, H. (2021). Prevalence of Obesity and Trends of Body Mass Index in Azad Jammu and Kashmir. *Journal of Pharmaceutical Research International*, 33(15), 69-82.
- Bisciotti, G. N., Eirale, C., Corsini, A., Baudot, C., Saillant, G., and Chalabi, H. (2020). Return to football training and competition after lockdown caused by the COVID-19 pandemic: medical recommendations. *Biology of Sport*, *37*(3), 313-319.
- Brito Souza, D.; Lopez-Del Campo, R.; Blanco-Pita, H.; Resta, R.; Del Coso, J. (2020). Association of match running performance with and without ball possession to football performance. *Int.J. Perform. Anal. Sport, 20*(3), 483–494.
- De Souza, D. B., Gonzalez-Garcia, J., Lopez-Del Campo, R., Resta, R., Buldu, J. M., Wilk, M., and Coso, J. (2020). Players' physical performance in LaLiga when the competition resumes after COVID-19: Insights from previous seasons. *Biology of Sport*, 38(1), 3-7.

- Del Corral, T., Fabero-Garrido, R., Plaza-Manzano, G., Fernandez-de-Las-Penas, C., Navarro-Santana, M., and Lopez-de-Uralde-Villanueva, I. (2023). Home-based respiratory muscle training on quality of life and exercise tolerance in long-term post-COVID-19: Randomized controlled trial. *Annals of physical and rehabilitation medicine*, 66(1), 1-12.
- Eirale, C.; Bisciotti, G.; Corsini, A.; Baudot, C.; Saillant, G.; Chalabi, H. (2020). Medical recommendations for home-confined footballers' training during the COVID-19 pandemic: From evidence to practical application. *Biol. Sport*, *37*, 203–207.
- Gill, S. A., Akhtar, T., Islam, M., Khan Sherwani, R. A., Shahid, H., Yasin, S., & Waseem, M. T. (2022). Rehabilitation of Acute and Chronic Ankle Sprain for Male Cricketers through Mixedbag (Hydrotherapy and Land-Based) Exercises. *Journal of Bioresource Management*, 9(4), 123-133.
- Gill, S. A., Akhtar, T., Nazeer, T., and Shahid, H. (2019). Rehabilitation of acute and chronic ankle sprain of male cricketers through aqua exercise. *Journal of the Research Society of Pakistan*, 56(2), 387-400.
- Gill, S. A., Akhtar, T., Rafiq, M. T., Naseer, A., Javed, S., and Shahid, H. (2021). Rehabilitation of acute and chronic ankle sprain for male cricketers through headway (Isometric, Isotonic and Proprioception) exercises. *Rehabilitation*, 33(39B), 250-264.
- Hub, B. I. (2020). COVID-19: How FC BARCELONA trains during the isolation period. BarcaInnov Hub. Available online at:isolation-period/(accessed March 24, 2021).
- Kalinowski, P., Myszkowski, J., & Marynowicz, J. (2021). Effect of Online Training during the COVID-19 Quarantine on the Aerobic Capacity of Youth Soccer Players. *International Journal of Environmental Research and Public Health*, *18*(12), 1-12.
- Lago-Penas, C., Gomez-Ruano, M.A. El Jugador Numero 12. La Ventaja de Jugar en Casa en el Futbol, 1st ed.; Independently Published; 30 November 2020; ISBN 979-8574379523.
- Lim, M. A., and Pranata, R. (2021). Sports activities during any pandemic lockdown. Irish Journal of Medical Science (1971-), 190(1), 447-451.
- Macdonald P (2020) Premier League: players face "25% increased injury risk." In: BBC Sport. https://www.bbc.com/sport/football/ 52754212. Accessed 27 May 2020.
- Mohr, M., Nassis, G. P., Brito, J., Randers, M. B., Castagna, C., Parnell, D., and Krustrup, P. (2022).Return to elite football after the COVID-19 lockdown. *Managing Sport and Leisure*, 27(1-2), 172-180.
- Moreno-Perez, V., Del Coso, J., Romero-Rodriguez, D., Marce-Hernandez, L., Penaranda, M., and Madruga-Parera, M. (2020). Effects of home confinement due to COVID-19 pandemic on eccentric hamstring muscle strength in football players. *Scandinavian Journal of Medicine & Science in Sports*.
- Palucci Vieira, L. H., Carling, C., Barbieri, F. A., Aquino, R., and Santiago, P. R. P. (2019). Match running performance in young soccer players: A systematic review. *Sports Medicine*, 49, 289-318.
- Pena, J., Altarriba-Bartes, A., Vicens-Bordas, J., Gil-Puga, B., Pinies-Penades, G., Alba- Jimenez, C., and Casals, M. (2021). Sports in time of COVID-19: Impact of the lockdown on team activity. *Apunts Sports Medicine*, 56(209), 100340.
- Silva, J. R., Brito, J., Akenhead, R., and Nassis, G. P. (2016). The transition period in soccer: a window of opportunity. *Sports Medicine*, *46*(3), 305-313.