



Impact of COVID-19 outbreak on the mental health in sports: a review

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Abstract

Global pandemic, lockdown restrictions, and COVID-19 compulsory social isolation guidelines have raised unprecedented mental health in the sports community. The COVID-19 pandemic is found to affect the mental health of the population. In critical situations, health authorities and sports communities must identify their priorities and make plans to maintain athletes' health and athletic activities. Several aspects play an important role in prioritization and strategic planning, e.g., physical and mental health, distribution of resources, and short to long-term environmental considerations. To identify the psychological health of sportspeople and athletes due to the outbreak of COVID-19 has been reviewed in this research. This review article also analyzes the impact of COVID-19 on health mental in databases. The COVID-19 outbreak and quarantine would have a serious negative impact on the mental health of athletes. From the accessible sources, 80 research articles were selected and examined for this purpose such as Research Gate, PubMed, Google Scholar, Springer, Scopus, and Web of Science and based on the involvement for this study 14 research articles were accessed. This research has an intention on mental health issues in athletes due to the Pandemic. This report outlines the mental, emotional and behavioural consequences of COVID-19 home confinement. Further, research literature reported that due to the lack of required training, physical activity, practice sessions, and collaboration with teammates and coaching staff are the prime causes of mental health issues in athletes. The discussions also reviewed several pieces of literature which examined the impacts on sports and athletes, impacts on various countries, fundamental issues of mental health and the diagnosis for the sports person and athletes, and the afterlife of the COVID-19 pandemic for them. Because of the compulsory restrictions and guidelines of this COVID-19 eruption, the athletes of different sports and geographical regions are suffering from fewer psychological issues which were identified in this paper. Accordingly, the COVID-19 pandemic appears to negatively affect the mental health of the athletes with the prevalence and levels of anxiety and stress increasing, and depression symptoms remaining unaltered. Addressing and mitigating the negative effect of COVID-19 on the mental health of this population identified from this review.

Keywords COVID-19 · Pandemic · Isolation · Mental health · PRISMA · Athletes · Sports

Introduction

COVID-19 is an arising irresistible illness brought about by the newfound Extreme Intense Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The first patient with COVID-19 was identified in Wuhan, Hubei territory as per the research of WHO [World Health Organization] in 2020. In addition, contamination has spread quickly all over the world which resulted in numerous extreme and lethal clinical cases [1]. It is identified as a highly transmitted disease which can transmit from one person to another person through the droplets of respiration, hands, nose, mouth etc. and also a high infectiousness disease [2]. The number of mortalities and grimness around the world due to COVID-19 have raised critical general health and well-being concerns. Additionally,

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identifying, diagnosing, and treating those who were infected, as well as developing medicines, antibodies, and treatments was focused on by all countries and the World Health Organization to decrease the effect of this pandemic [3]. Finally, governments were constraining nearly a worldwide quarantine [4]. As a result, all the people maintained social distancing to overcome this issue. Other countries announced several conditions like no contact between people and also lockdown had been declared [5]. The refugee crisis has also affected the world of sports affairs.

Due to this pandemic, several individuals get affected which leads to disruption, anxiety, stress, stigma, and xenophobia. In a society or community, the act of an individual affects the agitation of the pandemic which contains the level of severity, degree of flow, and aftereffects [6]. The complete information about the virus and its effects must be known prevent it. To control the spreading of the virus, regional lockdowns were implemented due to the people-to-people transmission of the SARS-CoV-2. The transmission chain has been broken by employing isolation, social distancing, and closing of educational institutes, workplaces, and entertainment venues by which people stay in their homes [7]. The social and mental health of people gets greatly affected because of these strict actions throughout the board [8]. The WHO recommends people stay active and available at home to reduce social relationships during the initial wave of COVID-19 and to prevent the spread of the virus. Throughout the world, after the decrease in the count of COVID-19 cases [9, 10], and due to the limit of outbreaks in the initial stage, a survey shows that there is a rise in the COVID-19 cases in the second wave in many regions of the world [11]. Zhao et al. [12] say that the second wave of infections will be indicated by the control measures and social distance carried out during the first wave of COVID-19 transmission. Due to this, the athletes faced challenges in doing their regular activities with the supervision of their coach and scientific experts, during the placement period.

Several efforts were carried out to prevent the pandemic situation, but there is no clear information about what will be the next steps followed in the upcoming days. The long-lasting effects of Coronavirus have given great worry to the global environment such as declined economy, venture surety, worldwide market stocks, human well-being, daily groceries supply and medical emergency services. To control the spread of the COVID-19 pandemic, strict actions were followed by the governments like severe lockdowns, restriction of social groups, and organisations like sports events and also unnecessary travel has also been prohibited which greatly affects the sports industry and athletes [13]. For this reason, the athletes were incapable to regulate their regular training sessions as well not participate in any sports events due to suspensions. Further, Turgut et al. [14] reported the cancellations and postponements of various

global sporting events to follow the global health recommendations and to restrict the spread of the infection.

By considering the risk of transmission and the health problems for both the spectators and the field players, several nations have postponed the local professional football leagues [15]. Severe economic issues and lack of income were the results of COVID-19 and the elite football clubs also face several problems due to this pandemic [16]. The final match of the UEFA Champions League and other fewer games were postponed by the Union of European Football Associations (UEFA) to March 2020, and the International Olympic Committee (IOC) and the government of Japan also postponed the Tokyo Olympics of 2020 to July 2021 in which there is no change in the name as 2020 Tokyo Olympics [17]. Totally of about 57% of the 11,000 athletes who have registered for the postponed Olympic games have already met the requirements, following the International Olympic Committee (IOC) However, the majority of these athletes are now confined as a result of the COVID-19 restriction, which was extended till 2021. Therefore, because of the pandemic these big decisions of cancellation and delaying the tournaments were taken due to which many athletes confronted tight limitations to proceed with their normal preparations or practices. Health authorities prescribe these constraints to avoid the public gathering during matches and events that might work to a quick spread of Coronavirus, bringing about extra tension in the medical services framework [18–20].

To evade the COVID-19 infection during the lockdown self-isolation, limitations, social disconnection arrangements and an environment of uncertainty created an adverse effect on the populace's mental health [21] and already available evidence appears to affirm these forecasts [22]. During the first month of internment, nearly 15.8% and 21.6% of the total population of Sain faced depression, anxiety, and post-traumatic symptoms as per the report of González-Sanguino et al. [23]. Further, WHO [18–20] is also concerned about these mental health and psycho-social issues due to this pandemic.

However, to understand these outcomes, there is a need to study the results of the coronavirus pandemic in the sports setting. In that context, Trabelsi et al. [24] also reported that few coaches, sports psychologists and even psychiatrists found some mental issues in athletes, that may cause adverse consequences in their life. Furthermore, Reardon et al. [25] identified in a narrative review that elite athletes were suffering from various psychological issues at rates identical to or surpassing the common population due to COVID-19. Moreover, the field specialists cautiously screened and observed the athletes during the Coronavirus pandemic and expressed those athletes needed a mental advisory for adjustments. Similarly, Turgut stated that the new measures of self-segregation from others and quarantine affects exercise, practice routine as well as lifestyle resulting in

prompt physical and mental challenges for athletes due to the COVID-19 pandemic. Before the COVID-19 pandemic, elite athletes encountered a lot of stressors during their career, the COVID-19 restrictions seem to have amplified all the stressors with negative consequences on the mental health of athletes. Unfortunately, the present literature does not seem to clarify the possible causes and effects of COVID-19 restrictions on athletes. Subsequently, the present narrative review aims to describe the COVID-19 pandemic lockdown influenced the mental health of elite athletes. Specifically, the primary objective of this review is to identify the common psychological distress and stress responses in elite athletes during the COVID-19 pandemic. Consequently, this study aims to identify factors, either positive or negative, related to psychological distress in elite athletes during the COVID-19 pandemic from various research articles.

Impact of COVID-19 on mental health

Several reasons were identified for this. The people who combat the public health factors (like vaccination) and how they deal with the risk of infections and following losses which was mainly due to the psychological measures. The treatment of any infectious disease like COVID-19 is one of the main problems. The maladaptive behaviours, emotional distress and defensive responses were the results due to the Psychological effects of the pandemic [26]. The people who were affected psychologically will be harsher. We need to accept that, there will be a low lifespan for the people who were affected mentally and this results in poor physical health in normal cases rather than in other populations [27]. People who already have mental health or use drug problems are more likely to contract COVID-19, and they may face difficulties getting tested or treated and suffer unfavourable medical or mental impacts as a result of the pandemic.

Secondly, from this study, it is predicted that an increase in anxiety and depression symptoms, with some individuals, eventually developing post-traumatic stress disorder, among those who do not already have these diseases. From the evidence, a suggestion is made that throughout the current pandemic, this risk was not fully recognized in China [28].

Third, an assumption is made that, the people who work in public health, primary care, emergency services, emergency departments and intensive or critical care may face several psychological disorders. While this risk to healthcare workers has been formally identified by the World Health Organization, more needs to be done to manage anxiety and stress in this population and, in the long run, to help prevent burnout, depression, and post-traumatic stress disorder [29]. However, physical exercise training generally has health benefits and assists in the prevention of several chronic diseases. Moreover, physical activity improves mental health by reducing anxiety, depression, and negative mood and

improving self-esteem. Therefore, the beneficial effects of adapted physical activity, based on personalized and tailor-made exercise, in preventing, treating, and counteracting the consequences of COVID-19 are analysed [30].

Consequently, it is important to identify some of the unique challenges this population currently faces, and understand where our student-athletes are mentally and physically. This is to ensure their needs are addressed, and the health and well-being of this population are protected. [31] assessed the impact of the COVID-19 pandemic on Canadian high-performance secondary school student-athletes. Student-athletes should be provided additional mental health support during this maelstrom of changes. In particular, additional mental health support for student-athletes should be anticipated in this maelstrom of changes; specific in-home virtual training during the COVID-19 outbreak should be further strengthened and improved to protect the mental and physical health of the athletes, especially to reduce the risk of anxiety and depression.

Impact of COVID-19 on sports

Throughout the world, the COVID-19 virus has been spread virtually, and to stop the spread of this disease, companies, schools, and colleges have been locked down, and general social life like sports and physical activities has also been hindered. The challenges faced by the athletic industry have been mentioned in the COVID-19 lockdown policy. As a result of the fast transmission of this coronavirus, millions of people have lost their lives, the largest indoor and outdoor sports events have been affected, and without the view of competitions the national and international level sports have been postponed or cancelled or rescheduled or location changes happened [32]. Sports events have been greatly affected by the COVID-19 virus and there are rescheduled international events like the Olympics which have been discussed earlier.

In overall history, this is the first time the cancellation of Olympic Games due to a medical issue [33]. The financial loss is not only faced by the country Japan but also the 11,000 Olympic athletes and 4400 Paralympians who participated in several sports events of the Olympics also faced this problem. The Olympics is one of the rare and great opportunities for athletes to establish their talents through participation in competitions in front of the total world. Every participant had worked hard and undergo much training for this. During March and April 2020, football clubs would not be required to release players for national teams, according to a FIFA announcement made on March 13, 2020. Without any response, the players have the opportunity to decline. As per the suggestion of FIFA, all international matches must take place outside of the slots, however, the final choice is based upon the administrators of the competition member associations for friendly matches [34]. Other

sporting events, including the Wimbledon championship, the basketball and football tournaments, the athletics championship, handball and ice hockey, cricket, rugby, skiing, weightlifting, and wrestling were able to modify their schedules or can cancel their competitions altogether. For the top athletes, their professional career gets affected greatly due to this rescheduling of the Olympics and several National and International sports events. Along with the discussion about the performance of the athletes, the effects of COVID-19 on sports events must also be considered. Based on factors like location, opposition, score, number of recovery days, and tactical system, the performance of athletes relies [35].

Because of this lockdown during the COVID-19 pandemic, throughout the world, there are millions of jobs at risk. Rather than the sports person, the people who were engaged in retail and other services, sports industries along with the sports events and leagues that contain transportation, infrastructure facility, travel, tourism, catering, and media broadcasting in the field of sports were also get affected [36]. A lot of pressure arises among the athletes and professional players because of this postponement of the competitions. Initially, there is no support from the sponsors if they decide to make them fit in the home itself.

Several educational institutions along with sports education are also get affected because of the COVID-19 lockdown, and those stakeholders the local and national ministries, public and private educational institutions, sports organizations, NGOs and the business community, teachers, scholars, coaches, athletes, parents and some young people were also involved.

Impact of COVID-19 on physical activity

Due to the cancellation of sports events during the COVID-19 lockdown, all the other outdoor activities were also restricted. Furthermore, gyms, stadiums, pools, dance and fitness studios, physiotherapy clinics, and parks were forced to close. These factors encouraged athletes to alter their fitness routine and train at home, where they are frequently not observed by qualified health workers or trained coaches. Several athletes have their gym at home or other pieces of exercise equipment which they can use to practise regularly during a lockdown. Their current level of physical fitness should be maintained, or at the very least not decreased, during the home activity period [37]. However, most people are unfortunately unable to be actively involved in their regular outside individual or group sporting or physical activities. A high level of physical fitness is required by elite athletes irrespective of the specific type of sport. Generally speaking, elite athletes avoid long periods of rest during and at the end of the competitive season [38].

The immune system and the anti-viral defences were greatly affected because of continuous exercise every day [39]. A low regulate exercise is resulted due to the order of

stay-at-home by the government and closures of parks, gyms, stadiums, and fitness centres to stop the spread of SARS-CoV-2. Since regular exercise can boost the immune system of a sports person and can able to treat several co-morbidities like obesity, diabetes, hypertension, and severe heart diseases that make athletes more prone to infections like COVID-19 so it is considered an unacceptable instruction [40].

Since they affect several sports damage processes and have the potential to improve repeat intervention and prevention, psychological elements underlying the various stages of sports injury are becoming more and more essential [41]. Rather than the new concept in history, the confinement scenario resulting from COVID-19 shares several issues with the various stages of sports injury encountered by athletes. The sports activity can be reduced due to some inference, reduction in autonomy, alterations in the sports environment, as a single or group there is a lot of chances to increase their records in the sports field, prohibition of activities that are not related with it, personal and family life changes like earlier retirement because of the alterations in the schedule of sports events. Now there is the existence of deeper problems like abuse of substances, social distance, depressive or anxiety episodes, suicidal thoughts, self-esteem problems, and poor sleep quality. Because a poor perception of the quality of sleep can harm the health of a sports person, along with the life of the sports person the latter factor is also included [42]. Long periods of isolation may lead to personal growth and development of the psychological processes of sports exercise, which is under the discussion with the writers. There are many adjustments made by sportspersons because of the existence of restrictions throughout the world since they lack the equipment or appropriate areas to develop their training routines effectively [43]. Because of the prohibition or postponement of all the local, national, and worldwide contests, this fact has prompted us to investigate how the athletes face this complex situation and their issues. Consequently, during this complicated scenario, particular emphasis should be dedicated to specific exercise interventions tailored for subjects and athletes recovering from COVID-19 [44]. Studying the psychological effects both good and bad that this situation may have a great interest in the individuals.

For the athletes, both the physical and mental issues get increased due to this continuous COVID-19 lockdown. There arises an unstable life for sports players due to the prohibition and rescheduling of sports events. Professional players or athletes feel stressed because they are pushed to the situation to handle all the problems behind them. The level of worry, stress and anxiety may get increased due to the unstable future [45].

However, to the researcher's awareness, how far the mental health of the athletes and professionals get affected due to this pandemic has been examined through several researches and surveys. During the continuous lockdown of COVID-19, athletes and sportspeople have faced a lot of issues like

difficulties in sleep, sadness and depression rather than an increase in their physical activities [46]. To address these mental issues and information and illuminate the sports fraternity as well as the general society about the mental challenges an athlete is facing during this COVID-19 outbreak, this review article's impact of a COVID-19 outbreak on the mental health in sports was taken. To examine the current status of the professional athletes who went for a break during the pandemic period and to measure their mental health several surveys have been carried out. An investigation was also carried out to identify the physical and mental activity of the athletes while they stay at the home.

Methodology

The scoping review was carried out for the criteria and procedures outlined in the available systematic literature data factors and Meta-Analysis (PRISMA) with the Scoping Reviews extension.

The available literature on aerobic exercise intervention on body composition in obese females was considered for the present study. Figure 1 shows the PRISMA flowchart. From the sources like Research Gate, Pub Med, Google Scholar, Springer, Scopus, and Web of Science, a total of 80 research articles were gathered for the study and among that 14 sample papers were selected by making use of keywords like COVID-19, SARS-CoV-2, and athletes. Initially, the selected papers were examined whether they are related to the effect of the pandemic on the sportsperson and to confirm this, their respective reference papers were also examined for the full-text articles. The reviews of the particular research papers were also considered. Some of the measures developed to confirm the eligibility were (1) Population: sports person, professional athletes, players, (2) Intervention: COVID-19 pandemic, (3) Types of Study: a comparative study, randomly controlled trials, clinical trials, review papers, systemic review, and meta-analysis, and (4) Outcomes: an establishment of good and fine result related to the psychological health. Age, injury form, or research design will not be avoided. Studies which are not in English, not publishing results, and are not relevant to the COVID-19 pandemic were removed.

Scope of PRISMA

To provide guidelines for the creation of protocols and for scientific reviews and meta-analyses that evaluate the efficacy of treatments, the PRISMA has been developed. Without the examination of efficacy, the PRISMA undergoes several reviews because of the fewer protocol instructions, writers are recommended to adopt. A protocol has been demonstrated by the research as a document that defines the reasoning, intended purpose, and intended methodology approach of a systematic review before it begins.

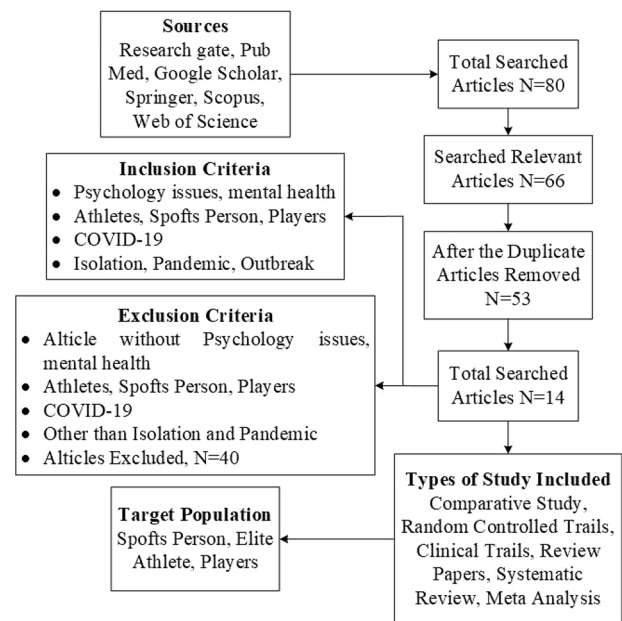


Fig. 1 Flow chart of PRISMA

The authors who are involved in the development of systematic review procedures for publication, general consumption, or other purposes should PRISMA initially. To identify whether the protocol contains crucial information, it will be useful for the candidates who write review procedures and as a tool for the reviewers. To get a conclusion about a review, the journalists and reviewers make use of PRISMA to identify the correct protocol.

The structure of this document is the same as the previously established journalistic standards, such as the PRISMA Explanation and Elaboration document; it provides thorough justifications and evidence-based justifications for each checklist item. Examples of effective reporting for each checklist item have been discovered which use systematic review and meta-analysis techniques and are provided throughout this document to help the readers to identify in a better way.

During the development of an efficient review protocol, a particular list of items must be taken into account to focus on the PRISMA, and to get a clear view of the planned review process an extra detail will be more helpful in this process. Rather than the customary of the author, there is a need for more words or space in the PRISMA. Transparency and reproducibility will be available by giving more detailed information about that, and hence in the generated systematic report, the details mentioned must be limited by the authors, and if needed the summary of the report will be given and the finished protocol was referred by the readers or PROSPERO record. Following new journal rules aimed at encouraging reproducibility, this review proposes that full explanations of planned scientific details for systematic reviews are

acceptable. There are several checklist elements to match how we picture them appearing in a procedure; publishing them in this order may help readers understand what's going on. If the authors feel that changing the order in which the checklist items appear is necessary, they should do so. In their protocol, authors must describe every PRISMA element.

Discussions

These discussions made use of selected articles as described in the above section. After duplicates were removed from the 80 titles and database citations loaded, just 68 remained. After evaluating the titles and abstracts, 54 were found to

Table 1 Impact of COVID-19 outbreak on the mental health in sports

S. No	Author	Sample	Variables	Outcomes
1	Costa et al. [47]	<i>N</i> = 1125	Cognitive emotion regulation (CERQ scale)	Athletes with higher athletic personalities drive in general ruminate and catastrophize more
2	Esteves et al. [48]	<i>N</i> = 529	State anxiety and trait anxiety	A significant correlation was found between state and trait anxiety with COVID-19
3	Facer-Childs et al. [49]	<i>N</i> = 375	Lifestyle factors, social interactions, physical activity, sleep patterns, and mental health	A significant change was reported in total sleep time, sleep latency, social jetlag, Training frequency and duration of athletes and changes in training and sleep are directly associated with mental health outcomes
4	Fronso et al. [50]	<i>N</i> = 1132	Perceived stress and psycho-biosocial	Differences were observed in perceived stress and Psycho-biosocial by gender and level of achievement among the athletes in times of adversity
5	Håkansson et al. [51]	<i>N</i> = 1145	Depression, anxiety, alcohol drinking, gambling behaviour	Depression and anxiety are mental health symptoms associated with elite athletes due to pandemics Gambling increments during the pandemic were uncommon yet identified with gambling issues
6	McGuine et al. [52]	<i>N</i> = 13,002	Depression and anxiety	Moderate to severe anxiety symptoms were reported in athletes. The prevalence of depression symptoms was highest in team sports than individual sports due to the pandemic
7	Mehrsafar et al. [53]	<i>N</i> = 1417	Mental health, mood states, and life satisfaction	In this phase of the pandemic period the training rate, mental health, life satisfaction, and positive mood have decreased in comparison to the reopening and semi-lockdown phases
8	Mon-López et al. [54]	<i>N</i> = 187	Emotional intelligence, mood state, and resilience	COVID-19 isolation had significant negative effects on sleep quality, and other psychological variables
9	Pillay et al. [55]	<i>N</i> = 692	Mental state	COVID-19 had a significant effect on mental state
10	Pons et al. [56]	<i>N</i> = 544	Life-spheres and mental health	The negative impact of the lockdown was reported on the mental health and life spheres among youth athletes in Spain
11	Şenışık et al. [57]	<i>N</i> = 418 and 612 (Athlete and Volunteers)	Depression, anxiety and post-traumatic stress	Team and individual athletes have depression, anxiety and stress due to the COVID situation
12	Shepherd et al. [58]	<i>N</i> = 99	Mental health and social connection	Participants reported their mental health was influenced by social connections, online classes, and physical activity
13	Strahler J et al. [59]	<i>N</i> = 742	Wellbeing, momentary stress, and resilience	Mental health was affected in the initial phase of the pandemic
14	Uroh and Adewunmi [60]	<i>N</i> = 64	Anxiety and depression	Individual athletes were more distressed rather than team athletes during the coronavirus pandemic

be appropriate for full-text examination. Of the 54 papers considered eligible, 40 were eliminated because they were unrelated, lacked full texts, or were abstract-only articles. As a result, 14 publications out of 80 were found to meet the meta-analysis' inclusion criteria.

Original research articles were cross-sectional studies like comparative studies, random controlled trials, clinical trials, review papers, systemic reviews, and meta-analyses. Table 1 represents the effects of the COVID-19 Outbreak on Psychological Health in Sports. The table illustrates the sample of respondents, variables used for the evaluation and outcomes achieved for the respective studies.

The COVID-19 pandemic is a worldwide challenge. Meier et al. [61] reported administrations of countries and public health organizations take action most effective commendation to restrict contamination is social distancing. Further, various countries opted for mandatory lockdowns and the closing of public areas for maintaining social distancing. A greater level of mental distress was discovered as a result of changing to new protective measures, according to [62]'s research on the effects of the coronavirus outbreak on public health. Further, due to this outbreak there are severe mental health disorders like increases in fear, anxiety and depression, gambling problems, sleep and eating disorders, psychological rigidity, obsessive-compulsive disorder, family conflicts, fitness concerns, sedentary lifestyle and negative habits, low mood, large intake of alcohol and drugs, self-harm attempts or suicidal behaviour, and rumination [13, 51, 53–55, 63–70] respectively.

Due to the new standards of a pandemic, the athletes have gone through huge changes in their style of living and daily activities, communal relationships, financial-related issues, and loss of goals and satisfaction. In line with these challenges, psychological well-being cannot be isolated from both the physical and mental problems manifestations and related fundamental issues in which the outer injury and recovery may take a long time. Peluso et al. [71] stated that physical activity has valuable impacts on the control and treatment of various diseases and mental illnesses like depression and anxiety. Further, stress and physical activity effectively affect the factors which influence cardiovascular status [72]. According to De Matos et al. [73] the normal problems faced by athletes are physical training, heart diseases, and risk factors. Similarly, during the Coronavirus lockdown, athletes trained less frequently and for shorter periods, which can cause higher depression, anxiety, and stress scores. In addition, [74] reported that excessively low training load may affect psycho-social engagement among athletes by inducing training-induced physiological and physiological adaptation to aversive preparedness.

Further, McGuine et al. [52] reported less physical activity and lower quality of life due to school closures and sports cancellations during a pandemic in the USA, and for women

players and team sports players' fewer symptoms like anxiety and depression were faced. Similarly, [54] also stated that a survey before and after one month of school closure due to the pandemic reported less dissolution of their athletic identity and there is more support from the social environment and the communication between the team members is also increased. Moreover, due to the low quality of sleep and long periods of sleep, they were reported in Spanish handball players due to the decreased training intensity and volume during the pandemic period. Additionally, [75] mentioned that the numerous physical performance tests of soccer players were get affected in Brazil due to 63 days of quarantine which they conduct during their normal off-season. Furthermore, Haan et al. [76] reported in their study that Sweden athletes (elite football, ice hockey, and handball players) are concerned about their sport and their careers during this COVID crisis, along with the negative psychological impact of the pandemic.

Furthermore, during this pandemic situation, some players feel lonely and their psychological health gets affected [77]. Additional factors that have contributed to players' mental suffering include their exclusion from the athletic community, decreased training and activity, a lack of formal coaching, and a lack of social support from fans and the media [53]. Furthermore, depression, anxiety, and higher athletic identity symptoms were reported in individual and team sports athletes of Turkey and Italy during the lockdown period [47, 73] and Uroh and Adewunmi. [60] also found that single players were more distressed rather than team players during the coronavirus pandemic. Similarly, [56] stated the negative effect of lockdown on the psychological health and life spheres among youth athletes in Spain. Likewise, individual athletes are more prone to psychological distress than team sports athletes [46, 78, 79]. Individual athletes are at a greater risk because in individual sports athletes are the only responsible person for their success or failure, they cannot get any support from anyone during the competition so they need to work accordingly. Thus, the present circumstance makes individual players more prone to psychological distress in comparison to team sports athletes [80–82]. Additionally, a group of elite and semi-elite athletes from 15 different sports namely soccer, hockey, rugby, cricket, athletics, netball, basketball, endurance running, cycling, track and field, swimming, squash, golf, tennis, and karate in South Africa were examined by Pillay et al. in [55] to determine the psychological effects of the disease outbreak on their physical, nutritional, and mental health.

Although the outcomes in this study are from various sports, and geographical regions but results were reported the same from every region Athletes are suffering from mental health as well as physical challenges due to the compulsory restrictions and guidelines of this COVID-19 pandemic

and during the COVID-19 outbreaks the athletes needed psychosocial services.

COVID-19 impacts on sports and athletes

Several influences were faced by the athletes and players who have long been preparing for the 2020 Tokyo Olympic and Paralympic Games. For some people, no chance is given because of immediate retirement and due to the announcement of a postponement. For instance, British rowing squad member and two-time Olympic medalist Tom Ransley announced his retirement. Eddie Dawkins, who won the silver medal in the Olympics in Rio, recently declared his retirement from the game of track cycling. However, this opportunity is used by others to continue their performance or heal from any injuries they may have experienced the temporal shift in time and rapid modification to optimise their peak. As a consequence, enthusiastic and good attitudes were maintained by the sports players [83].

Due to the loss of daily, weekly, monthly, and yearly routines, the mental and outer health of the players gets affected. Many athletes lost their normal training routines when the terrible disaster struck in 2011, but the damage was still limited. Athletes carried out their training since many areas of Japan were sufficiently separated from the Fukushima prefecture without the unidentifiable effects of nuclear power plant accidents. The outbreak of COVID-19 has prompted players to stay at home in addition to forcing practically the training centre to be closed. In the Tokyo Olympic and Paralympic Games along with other games, the qualified tournaments get cancelled which was impacted by social distancing measures implemented to prevent the spread of COVID-19. To make it more difficult to achieve a specific goal, these changes have enhanced feelings of doubt, perplexity, and frustration. The athletes work out for a long period due to the impact of practice sessions because there is no way to leave the house and engage in deep and systematic training. Due to this, there may increase in injuries, which in turn could make players feel even more doubt and frustration. Athletes may have increased anxiety due to less communication with their teammates, coaches, and other people.

On the other hand, there is information about athletes who push themselves to a limit as it hurts them and they sometimes feel it necessary to stop [84]. This type of athlete develops an "exercise dependence prevalence," according to Numanović et al. [85] research.

The individual athletes felt more stress rather than other team athletes due to this compulsive trend, which is defined by extreme exercise [86]. Athletes in individual sports are rigorous in their training and intensely focused on their competitive outcomes. The interruption of their preparation due to the limitation in training leads to stress. The roles and responsibilities were divided for the team sports. In

comparison with the athletes of individual sports, the team sports participants have more confidence and they can tackle and manage stress easily. As per the frequent discussions with their teammates, the effects of the home lockdown and the confusion around them were seen as less threatening. This condition is acknowledged as a protective factor. As stated earlier, the fitness participants displayed perfection and enjoyment and performs a lot of work. By frequent behaviours like avoiding the issue (avoidance), or acting out of anger and fear they were reacted [87]. However, the team players may face low stress.

Rather than other types of athletes, the fitness performers show higher values throughout all subscale ratings.

Impacts and actions from various countries

The Health Professionals Council of South Africa has loosened its restrictions on the employment of telehealth to make it more accessible according to the review of Pillay et al. [55]. This is due to the lockdown and the dangers of COVID-19. Because of travel and financial limitations, just one in four people may contact a sports physician. To know more information about COVID-19, the athletes make use of social media and get knowledge about how effective these channels are at getting important public health messages through to a broad audience. As the healthcare professionals failed to reach the athlete community, there is a need for physicians or other evidence-based channels which were misused for this purpose.

The sports were prohibited at all levels due to COVID-19 outbreaks and the associated quarantine. Because of this situation, the Italian sports community has been subjected to unfavourable psychological pressure, which affects over a long time. Additionally, the Italian sports community is in danger for psychological health due to the psychological effects of COVID-19 outcomes, according to [88]. The players from the youth and amateur levels generated a way for Olympians and professionals who were included in this, along with the supporting staffs, coaches, physical trainers, and managers.

According to [89], the medical guidelines for COVID-19 treatment in Brazil during the national soccer tournament required RT-qPCR testing of players and coaching staff preceding games and indicated that only asymptomatic players who tested negative be allowed to play.

Even though some teams and players may have less opportunity for testing because of financial inequality. Following this, athletes had a 2.5-fold higher probability of acquiring the disease if a teammate had COVID-19 and were double as likely to be tested for the illness themselves. If the test was conducted by the athlete's team, their chances of being tested will be increased (15-fold).

According to Lundqvist et al. [90], in France, the quarantine prohibits training in their place, and most of the regional, national, and international tournaments have been cancelled or delayed until further notice. Because of this the anxiety of players increased and their enthusiasm is decreased to return to sports competitions. During the lockdown, athletes had varying options for training depending on their accommodation and the amount of interaction they had with their coaches. To keep the players, motivated, the coaches of various teams scheduled daily workouts using digital tools. In other teams, the athlete's and coaches' interaction was very rare. A few players questioned the connections and trust with their coaches and their feelings also increased. With the infection of COVID-19, some players and coaches struggled with their symptoms and felt uneasy about their isolation during the crisis. During these times, telephone-based psychological help was also provided.

Because of this lockdown, there is an increase in the negative impact on the physical and mental health of people in India since it reduces physical activity in daily life, as indicated by Jadhav et al. [91] and the continuous development of COVID-19. The ICC Men's T-20 World Cup editions for 2020 and 2021 were both postponed by one year because of the pandemics during July 2020 declaration by the International Cricket Council. The event was postponed to November 2021 and October 2022, respectively. As per the ICC's declaration on August 8th, the right to host the competition was guaranteed for India in the year 2021 and Australia in the year 2020. The 2021 Women's Cricket World Cup and its semi-final event rescheduled by 1 year as a result of the pandemic.

Based upon the estimation, to improve the country's economy, health, and education Australian sport is funded by \$83 billion yearly. A priority on life skills training, ideal social climates, and increased positive results spanning social, personal, and physical sectors have all been recognised as youth sports environments' contributions to children's positive youth development on a worldwide scale. Therefore, [92] examined how COVID-19 was evaluated by various stakeholders in South Australia's youth sports, including athletes (ages 15 to 18), parents, coaches, and sports administrators.

As the English Football Association (FA) has repeatedly postponed elite men's and women's football matches, the pandemic has put new strains on them. A concern about how much it will be passed out on to elite women's clubs, as more people were already economically insecure. The financial effects of postponed games and reduced television income will be significant in men's football. To put a spotlight on the danger and uncertainty the sport was facing, [93] examined how the pandemic might affect the development of elite women's football.

The cognitive, affective, and behavioural features of athletes are greatly influenced by perfectionism, which is a

significant psychological factor. Through the patterns, it is described as having expectations, perceptions, and evaluations of events, such as "setting excessively high standards, followed by overcritical self-assessment." Perfectionism is associated with a focus on higher goals and more effective performance. Because of this, Lancheva et al. 2022 examined the dominating psychic conditions and perfectionism and their connection to the preferred coping mechanisms during the COVID-19 pandemic among sports students who arrived from Bulgaria and Russia and revealed their specialization based on gender, type of sport, level of qualification, and nationality.

Fundamentals of mental health interviewing and diagnosis of athletes

Without a thorough biopsychosocial clinical assessment, it is impossible to design a management strategy for mental health illnesses and symptoms. In this overview, important details on mental health issues and illnesses in sports that are relevant to this pandemic are addressed. Due to this pandemic, worse mental health conditions and symptoms like anxiety, obsessive-compulsive disorder, PTSD, depression and even suicide attempts among the players [94], who are frequently young and thus developmental less prepared to deal with the uncertainty that the pandemic has wreaked. The athletes were usually physically active, and due to sudden quit from sports and the migration of much academic education online, some athletes have seen a sudden and significant decrease in physical activity [95]. The rapid changes might affect mental health because exercise is considered to have both anxiolytic and antidepressant properties [96, 97]. Social isolation cancelled events and games and the ensuing uncertainty over how to adjust training schedules, loss of income, loss of training facilities and access to trainers, teammates, and coaches, family infection risks, disruption of daily routines and self-care, anxiety about contracting COVID-19 at sporting events or otherwise, and persistent community distress and additional relevant factors in the mental deterioration health symptoms and disorders in athletes. Because of the changes in sports, professional players get affected mentally (such as those who had planned to retire after 2020 or those who were in their final season of collegiate competition), the pandemic-related sport suspension could mean sport retirement, which could be a particularly difficult transition. Without any willingness, even if a person gets retired, then there is no plan for this retirement, no support from others and there was a higher level of athlete identity, their mental health may suffer [98]. Numerous of those unfavourable prognostic variables are probably linked to COVID-19-related retirement from sports.

If a person decides to restart the sport, he may face a lot of stress and anxiety. Due to the return of pandemic training

levels, there is an increase in the risk of injury and the play procedures for athletes were returned who previously had COVID-19 that contain a cardiovascular assessment, which has been reported to cause anxiety in certain athletes [99]. Trust and collaboration during sporting events [100] get affected because of the tactile communication such as giving high fives or pats on the back which has historically been crucial among teammates, but the athletes must need to get back in later days.

Healthcare professionals may identify new mental health conditions among the players at this time because of the contextual stresses [101], but they should be careful not to assign pathologies to normal and not to combat the stress which results in distress or dysfunction. Virtual appointments may be used for a variety of purposes. The diagnosis of a fresh case of ADHD, however, is more difficult to determine without a physical examination. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) states that certain symptoms for such a diagnosis must have been present before the age of 12 [102], even though were not aware of the player. Stimulants are not authorized when certain diagnostic requirements are met, according to the NCAA, WADA, and some professional sports leagues. According to the NCAA, the usage of ADHD rating scales is one of the major needs for the use of medications [103] But according to WADA, "there should ideally be a reference in the diagnostic assessment to use allowed diagnostic instruments." There is a challenging test conducted digitally because it can be time-consuming and complex. The athletes should be informed if any changes are happening in the timescales for the identification of disease, and virtual solutions should be investigated if possible.

In the time of the pandemic, the evaluation for suicidal behaviour is essential, and the linked crisis planning influences the management of a cure for the player, particularly for the degree of care advised. Although definitive data are not yet available, some people worry that the pandemic may raise the probability of suicide [104]. Social isolation, financial struggles, and difficulties to gain standard mental health care during the pandemic are a few factors which will enhance the risk which must be investigated. Firearms sales were used in large numbers in recent days in several countries and providers who are worried about the safety of players in mental health should investigate access to firearms. Guns are linked to an increased risk of suicide even if they are not bought to kill one [105]. To control the other suicide methods (e.g., excessive medication, and access to high buildings), a suicide risk analysis should be carried out. There is a large number of suicide attempts during the late spring in the Northern Hemisphere and during the effects of COVID-19, it is relatively high, especially during spring and summer sports.

Psychological aspects of return to sport after COVID-19

During the final events of athletes, individual and team training has been hindered which harms the mental health of players during the quarantine and come to a mindset to play again. Athletes are currently dealing with issues like social isolation, career disruption, and restricted access to training environments and instructors, which can harm their general well-being and result in a terrible performance, according to a Simons et al. editorial [106]. The debate has emerged about the potential that some athletes may have the benefits of training or disadvantage depending on the region due to variations in the degree of confinement around the world. If the athlete is not aware of when to complete the training and competition then he may face tension, anxiety, and sadness. Several surveys say that popular athletes have overcome depression in the baseline similar to the general population. [107] found that group training greatly increased pain tolerance and may have boosted the types of activity in comparison with taking training alone. During the period of outbreak, the National Alliance on Mental Illness has generated several recommendations namely [108] (1) a structured work environment, (2) attire and structured breaks which is a normal routine, (3) continuous physical workout with "mindfulness" along with quiet time and deep breathing, (4) safe of self-talk, conversation with other people, nutrition, creating a daily routine for the normal day, (5) available among the friends, family, and colleagues, (6) making use of video tools to connect manually, (7) referring the National Alliance on Mental Health Illness.

During the period of isolation and less exercise among the team, the ideas and guidelines were used which were provided by National Alliance on Mental Health organization and it was taken as a reference.

Conclusion

Throughout the world, there are more effects raised due to this COVID-19 outbreak in the field of sports as well as it also affects the physical activity of sportspersons and other players. Enormous effects of COVID-19 were realized not only in the world of athletics, but also in society, as a result of which businesses, workplaces, social engagements, universities, and educational institutions had to close down quickly. Globally, few longitudinal studies compared mental health before and during COVID-19 and found an increase in anxiety and depression symptoms. However, the majority of significant outdoor and indoor athletic events at the world, regional, and national levels have been cancelled or postponed as a result of COVID-19. The health of all the people around the world gets affected by COVID-19.

The present situation requires raising awareness in public, which can be helpful to deal with this calamity. This perspective article provides a detailed overview of the effects of the COVID-19 outbreak on the mental health of people. An effective plan to safeguard the mental health of this already vulnerable population of athletes is crucial. As sportspeople and athletes are significantly affected by mental disease, this study focuses on mental health, psychological responses, and suffering among them. This study's review includes a selection of articles based on PRISMA meta-analysis. Out of 80 papers found using Research Gate, PubMed, Google Scholar, Springer, Scopus, and Web of Science, 14 articles relevant to the literature were chosen. Furthermore, these selected papers are used in the discussions.

Several risk factors have been identified such as mental and cardiovascular disease in athletes which results in stresses like isolation, a lack of exercise, a low income, and fear of losing their jobs. The stress leads to COVID-19 exposure. To fight the coronavirus outbreak, organizations for occupational therapy and psychosocial stressors and their health will get affected. Many millions of jobs are at stake worldwide as a result of the COVID-19 lockdown, not just for sports professionals but also for individuals in allied retail and athletic services businesses associated with leagues and tournaments. Essentially, the evidence presented in this study supports the hypothesis that the pandemic affects mental health problems in sportsmen. Athletes' mental health concerns are exacerbated by a lack of training, needed physical activity, practise sessions, and teamwork with teammates and coaching staff. The beneficial effects of physical exercise in improving quality of life and well-being have been extensively documented. An adapted physical activity program may represent an important factor to prevent COVID-19 infection, as well as a useful complementary tool to improve the physical and psychological outcomes of COVID-19-affected patients. A suitable exercise program may strengthen the athletes, providing immune protection in the long term and reducing treatment costs. The influence on sports and athletes, the impact on various nations, basic concerns of mental health and diagnosis for sportspeople and athletes, and the COVID-19 pandemic's afterlife for them were all explored in the review. The findings showed that COVID-19 has an impact on elite athletes' mental health and was linked with stress, anxiety and psychological distress. The magnitude of the impact was associated with athletes' mood state profile, personality and resilience capacity. Therefore, strongly believe that the findings from this review would help athletes in addressing and mitigating the rise in mental health disorders, which could prove worse than the current pandemic itself. Based on the findings of this study, it was concluded that the athletes of different sports and geographical regions are suffering from mental health

issues due to the compulsory restrictions and guidelines of this COVID-19 outbreak.

Future application

Pandemic isolation has created immense pressure on athletes to regulate their training, execute their specific plans, maintain their social networks, to participate in targeted sports events and tournaments, respectively. Further, a finding of this study will support the professionals to prepare or establish specific psychological programmes to motivate and enables athletes to regulate their normal practices during the COVID-19 outbreak.

Relevance for clinical practice

This study was to review the shreds of evidence for the effect of a COVID-19 outbreak on mental health in sports. The findings of the study concluded that the athletes of different sports and geographical regions are suffering from mental health issues due to the compulsory restrictions and guidelines of this COVID-19 outbreak.

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Data availability Data sharing does not apply to this article as no datasets were generated or analysed during the current study.

Declarations

Conflict of interests The authors declare that they have no conflict of interests.

Informed consent Not applicable.

Ethical approval Not applicable.

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