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ORIGINAL

THE INFLUENCE OF PHYSICAL ACTIVITY ON MENTAL HEALTH OUTCOMES IN ATHLETES RECOVERING FROM INJURY: A LONGITUDINAL STUDY

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ABSTRACT

Athletes' mental health is more recognized and valued. Although the frequency of depression, anxiety, and other mental health issues among athletes is comparable to the general population, injuries exacerbate these symptoms because players face unique environmental and societal demands. We also discuss lesser-known research indicating that athletes with mental health concerns are more likely to sustain an injury. We discuss both internal and external barriers to effective care, as well as the rising awareness of the absence of mental health help in sports, which was highlighted during the COVID-19 pandemic and among well-known professional and Olympic athletes. For measuring the used SPSS software and generate result included descriptive statistic, the correlation also that ANOVA test analysis between them. Recovery from musculoskeletal injuries can be sped up by a known psychological reaction to injury; however, mental health disorders in athletes are not only associated with a higher risk of injury, but also predict worse outcomes later on, such as longer recovery periods, higher rates of injury recurrence, lower rates of return to sport, and poorer performance after returning to sport. Many efforts are presently underway around the country to create and execute projects related to athlete mental health screening, support networks, and targeted treatments to address athletes intricately connected physical and mental health. These initiatives are being done in response to intrinsic hurdles to delivering appropriate treatment for athletes, such as identification, stigma, and resource availability. Athletes' mental health is negatively impacted by athletes' injury. Similar to how mental health may and does impact athletic performance, it is also intimately related to the risk of sports

injury, creating a complex cycle that makes it hard to discern between mental and physical health.

KEYWORDS: Physical Activity (PA), Mental Health Outcomes (MHO), Athletes Recovering (AR), Injury (II)

1. INTRODUCTION

It is difficult to envision a future without athletics. Sports may be seen on everything from cereal boxes to billboards, clothing, the nightly news, and social media. Since most people in the globe like sports, cities usually utilize sports as the basis for their rebranding initiatives. During a sporting event, athletes are on show, and coaches and fans expect them to perform well under all circumstances. Both men and women's lives are significantly impacted by sport, which offers a safe haven. Sport may significantly improve protective mental health by socializing and engaging in a socially acceptable activity that appears to have far more good benefits than negative ones. Participating in sports can improve one's physical and emotional well-being. Engaging in physical exercise can improve wellbeing and boost physical health. People categorize themselves and get closer to belonging to a tangible or symbolic social group, according to the social identity theory. Since social connection is essential for preserving psychological well-being, people might feel strongly connected to their groups and promote interpersonal development. (Eather et al., 2023) People can build relationships with others in their community by participating in sports. Competitive sports' demands encourage the development of psychological traits including perseverance and tolerance. One important factor in achieving emotional balance may be the happy emotions that arise from playing sports. According to behavioural theories, people are motivated to repeat physical activities when they experience positive emotional reactions. An active lifestyle, which would improve quality of life, wellbeing, and health, might be one of the long-term benefits of these positive feelings. Motivation and, consequently, self-esteem are predicted by athletes' dedication to the task at hand rather than their ego. When physical health improves, so does happiness and mental health outcomes follow sports injuries in both participating and non-participating athletes. Consequently, there is a positive correlation between happiness and participating in sports. Engaging in an active sport improves socialization opportunities, distracts from unpleasant stimuli, builds self-confidence, and develops communication and collaboration abilities. Participating in sports can improve one's self-perception and reduce symptoms of anxiety, sadness, and poor academic performance. Participating in sports has a good impact on mental health, which may lead to personal growth and real self-awareness, two things that are essential for social wellness. Sports participation in particular may be a source of good self-esteem for many young people who struggle academically in the classroom. Despite the positive effects that sports may provide, there are drawbacks to playing sports. It is said that

athletes who suffer from serious or chronic injuries are under a great deal of physical and mental stress. Depression and anxiety are frequent psychological repercussions. Anxiety disorders and depressive disorders have a broad range of diagnosis and symptoms. Genetic, environmental, and psychological elements are all part of the complex genesis of anxiety and depression. According to research, depression is a prevalent condition that significantly impairs social expenses, functional handicap, and quality of life. One of the most prevalent psychiatric disorders is depression. These unpleasant feelings and/or a loss of interest in most of their previous pastimes are common among people who are depressed. Along with accompanying symptoms (such sleep disturbances, changes in appetite or weight, feelings of worthlessness, difficulty making decisions, etc.), these symptoms usually appear on most days for at least two weeks (Ramiz et al., 2021). Results of Sport-Related Anxiety and Mental Health in Athletes and Non-Players According to research, 8 is a negative psychological term that represents an individual's reaction to a stressful situation. The physical and emotional response to stressful, dangerous, or unforeseen situations is known as anxiety. When someone responds badly to a stressful situation, they will exhibit signs of anxiety. Common symptoms of anxiety include unpleasant emotions, behavioural changes, and cognitive shifts, such as avoiding circumstances that make you feel anxious. It is the uneasiness, fear, or anxiety you have before a significant event. Anxiety frequently starts to affect our relationships or interfere with day-to-day functioning when it gets really bad or overpowering. When treating an injured athlete, the sports medical team's top objective is to address the physical effects of the injury. According to research, many wounded athletes, however, display adverse psychological effects. Having a psychological response to an injury is common. In sports careers, pain and injuries are inevitable health concerns and employment dangers (Brett et al., 2022). In many different sports, injuries are common. However, when the emotional reaction to a physical injury worsens and lasts, mental health issues like depression may result. The sport psychology literature has connected psychological symptoms of anxiety and depression to a number of difficult situations and phases, including injuries, life stress, performance setbacks or failures, post-Olympic experiences, stressors in the team or sports organization, and sports career transitions. Most people agree that sports carry a high risk of harm. Early research on the psychology of injuries focused on factors like age, inactivity, injury history, and weariness, but there are many more factors that might lead to an injury. Athletes experience injuries on an emotional level, and there is a lot of sport studies. Various emotional reactions to an injury, including fear, anxiety, despair, and rage, are described in Mental Health Outcomes After Sport Injury in Playing and Non-Playing Athletes psychology. Athletes exhibit varying degrees of mental distress after an injury. After injuries, emotional responses evolve during the healing process. Injured athletes may experience trait anxiety as a result of discomfort, a fear of reinjury, a lack of social support, and the sense of a decline in athleticism. According to

research, recreational athletes who sustain injuries may miss time from training and competition and suffer from extreme psychological anguish, despair, and bereavement. A cycle of stress and sadness might hinder an athlete's capacity to heal from an injury and obtain the right care. Following an injury, athletes may experience job insecurity, which worsens their psychological distress. Losing them might result in the loss of their athletic identity, and they must be regained. There might be a lot of unpleasant emotional reactions if these factors are removed. Injury is associated with behavioral and emotional discomfort and may affect athletes' relationships, responsibilities, and routines. Athletes' mental health is expected to suffer more from injury-related career discontinuation than from career discontinuation resulting from an individual's personal decision to quit playing. Athletes create objectives for themselves during their careers, and achieving these goals affects their self-perception. Athletes who sustain injuries no longer need athletic-based objectives, and the adjustment can be challenging because, for the majority of them, their subjective well-being and success in sports have been a major part of their life. In 2018, sports injuries are considered to be a significant risk factor for psychiatric disorders in athletes. Athletes may be more susceptible to anxiety and depression as a result of the psychological demands placed on them by the athletic environment, which can have a negative impact on both physical and mental health (Hassett et al., 2024). They become more sensitive and may be more vulnerable to additional symptoms of common mental diseases if they are unable to perform. Former sportsmen who experienced several major injuries or surgeries were two to seven times more likely to report symptoms of prevalent mental disease than those who were not injured or underwent surgery. Compared to athletes who are not wounded, athletes who have had an injury have greater rates of depression. Other psychological impacts of transition, including anxiety, eating disorders, drug misuse, despair, and low self-esteem, have been documented in the transition literature.

2. Literature Review

The purpose of this study is to introduce writing connected with competitor psychological wellness & tackle manners by which athletic wound may add to competitor emotional wellness, prosperity, & mental preparation for come back to athletic. Competitors might encounter emotional wellness worries at comparable estimates, & in certain occasions, greater estimates than non-athletes. Athletic wound & emotional well-being seems to have a two-way connection, & the game wound & recovery procedure is related with a broad assortment of mental & emotional wellness worries (Haugen, 2022). The objective of this research is to give an outline of what a women competitor's psychological & profound prosperity mean for her sport presentation, wound chance & recuperation pursuing games associated wound. This audit investigates different non-actual elements that add to sport achievement, like strength, care & rest. The job of nervousness & discouragement in athletic-

associated wound is one more major question that put resources into a competitor's preparation should have the option to perceive & direct(Herrero et al., 2021). Studies examined the lengthwise route of somber side effect seriousness more than Nineteen Years in previous US soccer performers & the impact of blackout past, physical game cooperation & actual capability on noticed directions. Decrease in actual capability was a critical indicator of a more extreme direction of expanded burdensome side effects, free of blackout impacts. This addresses one reasonable objective for precaution mediation to moderate extensive haul neuro-psychiatric hardships related with blackout beyond ensuing many years of vitality(Brett et al., 2022). Studies explain that contrasts emerging from rehearsing athletic solo or with other people were greater articulated on account of interior games, that might be connected with the way that actual work that may be worked on over repression is greater like that rehearsed inside solo. Suggestions connecting with which athletic therapists & different wellbeing experts might propose to competitors in distressing circumstances are talked about(Rubio et al., 2021). The point of this survey was to feature the effect of mental variables on quantifiable results following muscular careful intercessions & to investigate mediations that maybe carried out to work on careful results & the general consideration of wounded competitors. In competitors who're harmed, especially that going through careful mediation, mental variables assume a significant part in the recuperation cycle(Daley et al., 2021). Researchers reveal that regardless of a momentary adverse consequence of Coronavirus limitations on workout cooperation over lock-downs, most of defendants got back toward their unique degrees of physical activity over the casual Coronavirus stages. As an examination of Elevated locales exhibits, especially serious Coronavirus estimates appear to have decreased physical activity along prospective adverse wellbeing impacts. In after years, strategy creators & athletics associations ought to team up to help the populace in their physical activity conduct over epidemics to offset limitations(Schöttl et al., 2022). The discoveries of this study propose that the deep rooted social & medical advantages of juvenile cooperation in recreation time actual work seem, by all accounts, to be connected with the sort of movement embraced, along prospective contrasts among genders (ZHANG et al., 2023). Along the uncommonness of lengthwise investigations crossing from adolescence toward maturity, these discoveries give significant experiences to general wellbeing systems to advance deep rooted wellbeing & actual work support(Miller et al., 2024). The determinations of this audit affirm that cooperation in game of whatever structure (group or solo) is valuable for working on emotional wellness & societal results among grown-ups. Group activities, be that as it may, might give greater powerful & extra advantages toward psychological & societal results beyond maturity. This survey as well gives primer proof to the Emotional wellness over Game paradigm, however additional trial & lengthwise proof is expected to lay out the systems answerable to athletics impact on psychological

well-being & mediators of intercession impacts(Eather et al., 2023). Studies investigate the connection among athletics nourishment & large muscle control improvement in youthful competitors, concentrating on keeping up with ideal nourishment degrees. The essential problem distinguished is the absence of comprehension of what nourishment means for large muscle control & sport execution in youngsters & teenagers. The concentrate additionally uncovers that financial element influence admittance to nourishing diet & muscle control results. The end highlights the significance of adjusted nourishment toward Motor ability advancement & sport execution(Purwanto & Ockta, 2024). Studies suggest that puberty addresses a period of gigantic corporeal, societal, & profound development, & game support may give huge emotional well-being advantages to youthful competitors. Wounds are tragically normal in athletics & address a danger toward the concise-& extensive haul wellbeing of competitors. Most of this exploration has been directed in grown-up competitors & fewer is had some significant awareness of results in young competitors pursuing wound(Haraldsdottir & Watson, 2021). This survey features the requirement for anticipatory commitment with proficient competitors, mentors, coaches, & athletics chambers to work with comprehension & mindfulness rearing, procedure enhancement, & conveyance of steady preparation & mental help & word related treatment schemes that keep up with the wellbeing & prosperity of competitors whilst limiting word related pressure over an epidemic(Haan et al., 2021). Studies outcomes demonstrated that upper class competitors also those along elevated degree of actual work encountered the most reduced trouble. Besides, impacts of the progressions in the preparation usual on trouble amid actually dynamic people relied upon the degree of athletics support with first class competitors who diminished preparation phases displaying diminish nervousness contrasted with sporting competitors who decreased preparation phases also or retained a similar preparation schedule(Sokić et al., 2021). The results of this study indicates that the job of lineage inside the sufferer's process was intricate, along physical activity personality, convictions, & anxiety toward post-Myocardial Infarction re-event affecting physical activity sustain the two emphatically & adversely. Physical activity commitment Post-Myocardial Infarction is a vigorous & intuitive cycle inside which the lineage may have a significant impact(Birtwistle et al., 2022). Scholars suggest that corporeal & psychological well-being are firmly connected, along developing proof to organic & social avenues. Generally, the exploration has focused on emotional well-being as the vital operator of between association; the degree actual wellbeing molds psychological well-being has gotten fewer consideration. Researchers discover that active work & wellbeing scares dissolve emotional well-being by means of their effect on actual wellbeing along a single unit development (or deteriorating) in actual wellbeing scads (zero to hundred) bringing about an ascent (or fall) of (forty-three percent) in psychological wellness scads(Doan et al., 2023). Studies aim is to survey writing in regards to athletic cooperation in grown-ups along corporeal or scholarly handicap. In

particular, to analyze qualities of accessible examinations involving members, mediations, results, & effect. The outcomes of this explore show that there were numerous great & hardly adverse results toward cooperation in athletic for grown-ups with corporeal or scholarly handicap. Additional exploration is expected to tackle the proof holes of sexes, ailment, & kind of game, & to utilize greater thorough examination plans to assess the impacts of game cooperation(Hassett et al., 2024). The findings of this research show that psychological well-being crumbled over lock-down in French Republic over the two thousand twenty Coronavirus emergency. In general, Self-evaluated actual wellbeing upgraded yet the people who encountered a more regrettable actual wellbeing were bound to account uneasiness side effects(Ramiz et al., 2021). The objective of the review was to survey either & how much the eruption of the Coronavirus epidemic has impacted the wellbeing ways of behaving of youthful grown-ups. The Coronavirus epidemic demolished wellbeing ways of behaving & heightened the sensation of summed up uneasiness in youthful grown-ups. Summed up uneasiness over compulsory lock-down adversely affected stationary ways of behaving & rest peculiarity(Czenczek-Lewandowska et al., 2021). The point of this explore was to inspect viability of a Twelve-Week multi-module work out with distant direction intercession on wellbeing associated results following 1 Year amid invasive carcinoma sufferers. The discoveries of this study recommended that the multi-module practice mediation along far off direction created extensive haul medical advantages toward invasive carcinoma sufferers(Dong et al., 2020). This audit analyzes the impacts of Musculo-skeletal wound on emotional wellness in grown-up competitors & distinguishes subjects to direct additional examination. Ultimately, survey of the writing uncovered that outer muscle wound & compulsory abdication from athletic auxiliary to wound are related with more regrettable emotional wellness in grown-up competitors, that has been displayed to enhance along care founded mediations(Furie et al., 2023). Studies analyzed Whether psychological well-being results had altered beyond the epidemic, & in the event that these modifications were connected with alterations in active work, stationary period, rest, & support in coordinated athletics. Be that as it may, expanded rest term on non-weekend days was connected with little tension & improve health associated Quality of life. The outcomes might assist strategy producers & different partners with understanding the derivative impacts of the Coronavirus epidemic on emotional well-being results & assist directing the preparation of strategy activities(Nyberg et al., 2023). The investigation shows in what way individuals' purposes behind practice impact their encounters over period, the powerful idea of individuals' activity boundaries & catalysts, & the inconsistent idea of chances & encounters. At the point when sprinters confronted significant boundaries, possessing a significant explanation was useful however it was in some cases lacking to upkeep(McCormick et al., 2024). Studies determined that after a while, grown-ups with Childhood Trauma have generally steady less fortunate metabolous results than their non-abused gazes.

People with Childhood Trauma have an expanded chance to Cardio-Metabolic infection & might profit from observing & initial intercessions focusing on digestion(Souama et al., 2024). Studies meant to dissect the relationship amid athletics contexts & low-life satisfaction in ladies of conceptive epoch. The research outcomes highlight the significance of the advancement of outside, Green workout & the improvement of unique mediations to keep up with or further develop the mental prosperity of ladies in regenerative epoch(Prémusz et al., 2023). Scholars' studies reveal that actual work might forestall burdensome side effects, although, physical activity vacillations might make various impacts. The results indicate that grown-ups who persevered in customary physical activity might have a diminish plausibility of creating burdensome side effects. The determination could act as a observational mention toward despondency avoidance(Tian et al., 2024). Scholars explain that over the transitional seasons of the Coronavirus epidemic, the two emotional wellness & preparing chances of competitors with disabilities were at expanded danger. Person adapting fads utilized by competitors with disabilities were inadequate assets to adapt to the intense pressure brought about via the Coronavirus epidemic(Urbański et al., 2023).

Table 1: The Result of Correlations

CORRELATIONS					
		PHYSICAL ACTIVITY 1	PHYSICAL ACTIVITY 2	MENTAL HEALTH OUTCOMES 1	MENTAL HEALTH OUTCOMES 2
PHYSICAL ACTIVITY 1	Pearson Correlation	1	.101	.010	-.168
	Sig. (2-tailed)		.441	.938	.199
	N	60	60	60	60
PHYSICAL ACTIVITY 2	Pearson Correlation	.101	1	-.349**	.107
	Sig. (2-tailed)	.441		.006	.417
	N	60	60	60	60
MENTAL HEALTH OUTCOMES 1	Pearson Correlation	.010	-.349**	1	-.154
	Sig. (2-tailed)	.938	.006		.239
	N	60	60	60	60
MENTAL HEALTH OUTCOMES 2	Pearson Correlation	-.168	.107	-.154	1
	Sig. (2-tailed)	.199	.417	.239	
	N	60	60	60	60

** . Correlation is Significant at the 0.01 Level (2-Tailed).

The preceding results of table 1 show that correlation coefficient analysis describes Pearson correlation values, significant values, and the number of

observations for each dependent and independent variable. The mental health result demonstrates a 10% favorable and substantial connection with physical exercise. The mental health results indicate a 15% meaningful relationship with physical exercise.

Table 2: The Result of Model Summary

MODEL SUMMARY						
MODEL	R	R SQUARE	ADJUSTED SQUARE	R	STD. ERROR OF THE ESTIMATE	OF THE
1	.209 ^a	.044	.010		.68759	

a. Predictors: (Constant), Physical Activity 2, Physical Activity 1

The above result of table 2 demonstrates that model summary result shows R square values, the adjusted R square value also that standard error of the estimate value its rate level is 68%, 10%, 4% and 20% model fitness analysis between them.

Table 3: The Result of ANOVA ^a

ANOVA ^a						
MODEL		SUM OF SQUARES	DF	MEAN SQUARE	F	SIG.
1	Regression	1.235	2	.617	1.306	.279 ^b
	Residual	26.948	57	.473		
	Total	28.183	59			

a. Dependent Variable: Mental Health Outcomes 2

b. Predictors: (Constant), Physical Activity 2, Physical Activity 1

The above result of table 3 describes that regression model and residual model result shows that its sum of square values is 1.235 and 26.948 the F statistic value is 1.306 the significant value is 27% significant level between them. the total sum of square value is 28.183 respectively.

Table 4: The Result of Coefficients^a

COEFFICIENTS ^A						
MODEL		UNSTANDARDIZED COEFFICIENTS		STANDARDIZED COEFFICIENTS	T	SIG.
		B	STD. ERROR	BETA		
	Physical Activity 1	-.200	.144	-.181	-1.390	.170
	Physical Activity 2	.134	.140	.125	.961	.341

a. Dependent Variable: Mental Health Outcomes 2

The above results of table 4 show that the linear regression analysis results include beta values, standard error values, t statistic values, and significant values for each independent variable. The major independent variable, physical activity 1, has a beta value of -0.181 and a t statistic of -1.390. The important value is 0.170. It indicates a negative but 17% meaningful relationship with mental health outcomes. Physical activity 2 is another independent variable, and the beta value is 0.134. The t statistic value is 0.961 and the significant rate is 0.341, indicating a 34% significant relationship between physical exercise and mental health outcomes.

Table 5: The Result of Test Statistics

TEST STATISTICS				
	PHYSICAL ACTIVITY 1	PHYSICAL ACTIVITY 2	MENTAL HEALTH OUTCOMES 1	MENTAL HEALTH OUTCOMES 2
CHI-SQUARE	21.700 ^a	17.100 ^a	9.100 ^a	10.300 ^a
DF	2	2	2	2
ASYMP. SIG.	.000	.000	.011	.006

a. 0 Cells (0.0%) Have Expected Frequencies Less Than 5. The Minimum Expected Cell Frequency Is 20.0.

The above result of table 5 demonstrate that chi square analysis result represents that physical activity 1,2, shows that chi square rate is 21.700 and 17.100 positive chi square rates between them. the chi square value of mental health outcomes 1 and 2 its shows that chi square value is 9.100 and 10.300 respectively. The overall significant rate is 0.000 shows that 100% significant levels between them.

Table 6: The Result of ANOVA

ANOVA						
		SUM OF SQUARES	DF	MEAN SQUARE	F	SIG.
PHYSICAL ACTIVITY 1	Between Groups	.937	2	.469	1.212	.305
	Within Groups	22.046	57	.387		
	Total	22.983	59			
PHYSICAL ACTIVITY 2	Between Groups	.348	2	.174	.413	.664
	Within Groups	24.052	57	.422		
	Total	24.400	59			
MENTAL HEALTH OUTCOMES 1	Between Groups	.928	2	.464	.918	.405
	Within Groups	28.805	57	.505		
	Total	29.733	59			

The above result of table 6 demonstrate that ANOVA test analysis result represent that sum of square rates, the mean square rates, the F statistic value,

the significant rate of each variables included dependent and independent. The physical activity 1 is main independent variable result shows that its sum of square value is 0.937, 22.046 and 22.983 respectively the F statistic value is 1.212 the significant rate is 0.305 its shows that positive and 30% significant level between them. the physical activity 2 shows that sum of square value is 34%, 24% the mean square value is 17% and 42% the F statistic rate is 41% the significant value is 66% significant levels between them. the mental health outcome 1 shows that sum of square value is 92%, 28%, and 29% sum of square values between them. the f statistic rate is 91% the significant rate is 40% significantly levels between them.

2.1 Techniques for Promoting Mental Health While in Recovery

- **Communication and Education:** Teachers may help athletes feel less alone by normalizing their experiences and teaching them about the typical psychological reactions to injuries. To offer assistance and handle issues, it is crucial to have open lines of communication with coaches, mental health specialists, and healthcare experts.

- **Goal Setting:** Having a sense of control over the healing process and sustaining motivation may be achieved by setting reasonable, attainable objectives. Both short-term and long-term objectives should be included of these goals, which should also be periodically evaluated and modified as needed.

- **Psychological Interventions:** Stress, anxiety, and depression can be effectively managed using cognitive-behavioral therapy (CBT), mindfulness, and relaxation techniques. Getting help from a sports psychologist or counsellor can help athletes deal with the psychological effects of injury.

- **Social Support:** Keeping up relationships with peers, coaches, and teammates can lessen feelings of loneliness and offer emotional support. Athletes can retain a feeling of purpose and belonging by being encouraged to continue being associated with their team in some way, even if they are unable to play on the pitch.

- **Physical Activity:** When done properly, participating in reduced or alternative types of physical activity can improve mood, lower anxiety, and maintain fitness levels. Exercises that may be modified to suit an injury include yoga, cycling, and swimming.

- **Visualization and Positive Self-Talk:** Helping athletes visualise and employ positive self-talk can boost their self-esteem and lessen their fear of playing sports again. During the rehabilitation process, visualizing a good recovery and performance may be a highly effective technique.

3. Conclusion

Athletes require better mental health resources. Although the prevalence of mental health symptoms among athletes of all ages and competitive levels is comparable to that of the general population, athletes must take into account particular cultural elements relevant to competitive sports, such as athletic identity, performance expectations, stigma, and injury risks. Recent research indicates that mental health issues may be risk factors for injuries, even while accidents might cause mental health disorders in sports. Injured athletes who suffer from mental health infection also have worse outcomes, such as longer recuperation periods, higher rates of injury recurrence, lower rates of return to sport, and worse performance after returning to competition. Athletes' mental and physical health are closely related, and poor treatment of one can cause a vicious cycle that affects both. In order to establish evidence-based, standardized techniques for the detection and management of mental health issues in athletes, a multidisciplinary sports medicine team including coaches, trainers, athletic personnel, and medical providers must be coordinated. Further study is required to examine the relationship between mental health and injury risk, find safe and efficient treatment alternatives for athletes, and modify mental health care practices to fit the particular culture of sports.

4. Future Efforts

There are still unresolved questions about how to appropriately diagnose and treat great athletes. The International Olympic Committee detailed two measures designed specifically for top athletes to identify mental health indicators and disease in a 2021 study. Better diagnosis may be possible in future Olympic events if these technologies are applied and their effectiveness is examined. When compared to a control group, Olympic athletes suffered fewer days of disease and injury as a result of psychological therapies that included cognitive behavioral stress management. The burden of injuries may be lessened with more attention on coping mechanisms, namely emotion-focused techniques, mindfulness training, and stress-based therapy. It is necessary to conduct more evaluation and demonstrate comparable strategies at various competition levels. Due to limitations imposed by regulatory organizations or methodological concerns about potentially affecting an athlete's performance, it is either difficult to get evidence on how drugs affect athletes. Seasonal studies can be used to assess the extent of the influence on mental health. Criteria to account for additional injury confounders, such as biomechanical risk variables, can be incorporated into advanced investigations. A 2020 comprehensive review of athlete cognition, for instance, showed that the emergence of biomechanical patterns that raised the risk of musculoskeletal injury was linked to worse performance measures of cognition. The financial burden of increasing access to mental health treatment may be intimidating when considering the system-level effects of treating athletes' mental health;

for instance, 1998 research estimated that teenagers needed US\$12 billion in mental health-related medical expenses. The overall cost of some mental health therapies has proven challenging to estimate due to insurance unpredictability and a lack of information on out-of-pocket spending. But according to the NCAA, bringing in outside advisors is a good approach to include mental health specialists while keeping expenses to a minimum. Athletic governing bodies must give programs looking to hire qualified personnel, such clinical psychologists, resources because cost is still an issue.

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