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Effect of Mental Health on Level of Injury and Life Satisfaction among Young Elite Athletes-A Barrier or Augment: An Observational Study

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Abstract

***Introduction*:** Sports injuries can have long-term psychological and physical ramifications. For instance, concussions can affect a person's quality of life by causing a variety of cognitive problems and emotional swings. Joint injuries can also make athletes more susceptible to musculoskeletal issues in the future, which could limit their capacity to exercise and lower their level of enjoyment and general well-being. Gaining a thorough grasp of the mental health and psychological well-being unique to top athletes may help to improve models of treatment and management for this group, which might ultimately lead to improved performance, lower risk of injuries and improve quality of life. Sport professionals, such as coaches, medical personnel, and sport psychologists, need to have this understanding in order to help elite athletes improve their mental wellness by helping them build coping mechanisms. ***Methods*:** The study was performed in NIMS University, in 2024. The survey contained information about the purpose and objectives of the study, informed consent, sociodemographic questions, questions related to mental health, life satisfaction and level of injury questionnaires concerning various aspects of well-being (stress level, depression, anxiety, satisfaction, and physical health, level of physical, mental and social functioning). ***Result*:** In this study, a total of 258 participants were included in the analysis. The average age of the participants was 19.5 years, with 52.7% of the sample being women and 47.3% men. ***Conclusion*:** A distinct set of pressures that elite athletes face might make them more susceptible to mental illness. Important elements include coping with continuous performance pressure from competition, the psychological effects of injuries, life satisfaction, overtraining, and burnout, and intensive public and media scrutiny.

Keywords: Mental Health, Level of Injury, Life Satisfaction, Elite Athletes, Cross Sectional Study.

INTRODUCTION

The concept of elite young athletes involves a combination of inherent talent, specialized training, expert coaching, and early exposure to competitive environments. These athletes typically exhibit superior physical abilities and skills compared to their peers, often standing out in their chosen sports from an early age [1]. Youth competitions organized by national and international federations play a pivotal role in the athletic development pipeline. By structuring these competitions in various age classes, federations ensure that young athletes receive appropriate challenges and opportunities to develop their skills progressively. This system not only nurtures talent but also helps in identifying future stars, preparing them for the demands of senior-level competition, and contributing to their overall growth as athletes and individuals. Age categories can range from under-13 (U13) to under-21 (U21), depending on the sport and its governing body's regulations [2].

Recent data indicate that the risk of sports injury among elite youth athletes is indeed high. Studies and reports consistently show that young athletes participating in high-level competitive sports face a significant risk of injury due to several factors, including the intensity and frequency of training, the pressure to perform, and the physical and psychological demands of their sports [3]. By addressing both the immediate and

long-term consequences of sports injuries, it is possible to promote sustained physical activity, enhance long-term health outcomes, and reduce the incidence of debilitating conditions such as posttraumatic osteoarthritis (PTOA) [4-6].

Sports injuries can indeed have long-lasting effects, both physically and psychologically. Concussions, for example, can lead to various cognitive issues and mood disturbances, impacting one's quality of life [7-10]. Additionally, joint injuries can predispose athletes to future musculoskeletal problems, potentially affecting their ability to engage in physical activities and diminishing their overall satisfaction and well-being [11-13].

One in four individuals aged 16-34 meets clinical criteria for one or more mental disorders, making this age group the most affected by such conditions [14]. A comprehensive examination of injuries affecting elite young athletes would be incomplete if psychological components were excluded. Additionally, there is a possibility that participating in organized youth sports at an elite level may have detrimental consequences on participants' psychological health. The dangers of psychological harm that top young athletes may experience are determined using a modified version of Hellstedt's athletic triangle.

Concerning oneself with one's physical appearance, losing a match and the ensuing dread of failing and being rejected, having disagreements with coaches, spouses, or relatives, the expenses related to physical demands and exercise have all been linked to a substantial increase in the stress levels of elite athletes, including young adult and figure skaters, golfers, and tennis players [15, 16]. It has been demonstrated that psychological stress affects performance by making an athlete pay less attention and using more of their self-awareness. This increases the risk of injury by increasing muscular tension and revealing coordination issues at the same time [17].

Improvements in the optimum management or, ideally, prevention of physical injuries in elite athletes have resulted from high-quality, systematic studies on the nature and effects of these injuries, particularly limb and head injuries/concussions. The psychological well-being and mental health of professional athletes are subjects of very little research, but there is rising interest in this area [18-20]. Although the frequency of diagnosable psychiatric diseases in this population is still up for dispute [21], sports medical professionals are increasingly questioning the idea that great athletes are mentally well [22].

A particular feature of an athletic career is the strong mental and physical demands imposed on professional athletes, which may make them more vulnerable to certain mental health issues and risk-taking behaviors [26]. Moreover, the peak years for top athletes to compete [27], typically coincide with the peak age at which mental illnesses are most likely to manifest [28, 29]. Elite athletes deal with a unique set of "workplace" stressors in addition to physical and competitive pressures. These include the possibility of injuries ending careers prematurely, limited support networks due to relocation, increased public scrutiny through mainstream and social media, and group dynamics in team sports [30-34]. The manner in which athletes evaluate and manage various stresses can be a significant predictor of the impact the stressors have on both their mental health and their sporting success [35].

Because of stigma, ignorance about mental health issues and how they may affect performance, and the belief that asking for help is a show of weakness, athletes are less likely to seek treatment for mental health issues [29-36]. Although there have been initiatives to promote the prevention, early detection, and treatment of psychopathology in elite athletes through the dissemination of sport-related mental health research, there are indications that certain sports regulatory organizations still downplay the importance of mental illness in this demographic [36]. This has serious ramifications if professional players in these organizations lack access to prompt or sufficient mental health care, or if they don't believe that the ethos of the athletic organization allows them to even raise their mental health concerns. Although the benefits of physical activity on mental health have long been recognized [23, 24], a review has revealed that high levels of physical activity among elite athletes may actually have the opposite effect, exacerbating symptoms of anxiety and depression through overtraining, injury, and burnout [25].

The current provision of mental health care for elite athletes may not account for sport-related factors that may influence vulnerability to mental health problems, nor for diagnostic or treatment issues that may be specific to this population, given the early stage of sports psychiatry and its research base [21-36]. Gaining a thorough grasp of the mental health and psychological well-being unique to top athletes may help to improve models of treatment and management for this group, which might ultimately lead to improved performance, lower risk of injuries and improve quality of life. Sport professionals, such as coaches, medical personnel, and sport psychologists, need to have this understanding in order to help elite athletes improve their mental wellness by helping them build coping mechanisms [37].

METHODOLOGY

The study was performed in NIMS University, in 2024. The survey contained information about the purpose and objectives of the study, informed consent, sociodemographic questions, questions related to mental health, life satisfaction and level of injury questionnaires concerning various aspects of well-being (stress level,

depression, anxiety, satisfaction, and physical health, level of physical, mental and social functioning). The NIMS college of Physiotherapy and occupational therapy Committee approved the study. The participants gave informed consent to participate in the study, and all measures were taken to ensure the anonymity of the participants.

Life satisfaction among athletes was measured using "The satisfaction with life scale". Scale has 5 questions which athlete may agree or disagree. Using the 1-7 scale (strongly disagree to strongly agree), indicate athletes agreement with each item by placing the appropriate number in the line preceding that item [38].

The Athlete Psychological Strain Questionnaire (APSQ) is a 10 question, brief self-report screening instrument for elite athlete's mental health. It assesses three domains of elite athlete mental strain: (1) Self-regulation, (2) Performance, and (3) External Coping. The APSQ provides a total Score (sum of all 10 items) and three subscale scores, ranging moderate (15- 16), high (17- 19), very high (20 +) [39].

Level of injury will be assessed by asking last recent or recurrent injury. Data about age, gender, place of residence (rural area, urban area), and marital status were collected [40].

Sample N=257 athlete aged between 13-21 years took part in the study on the basis of inclusion and exclusion criteria. Inclusion criteria was all athletes should be elite, both male and female, 13- 21 years of age. Exclusion criteria was non cooperative athletes, any neurological or orthopaedic impairment. All participants were elite athletes from different games like weightlifting, cricket, hockey, kabaddi, table tennis, badminton and kho-kho.

RESULTS

In this study, a total of 258 participants were included in the analysis. The average age of the participants was 19.5 years, with 52.7% of the sample being women and 47.3% men.

Table 1: Mean and SD of age, gender, mental health, level of injury, life satisfaction.

	Age	Gender	MH	LOI	LS
Mean	17.66	.62	.62	.62	.68
SD	2.123	.500	.486	.486	.486

Table 2: Frequency table of age

Age	11-16	17-21
Frequency	74	184

Table 3: Frequency table of gender

	Frequency	Cumulative frequency
Male	136	100
Female	122	52.7

Table 4: Frequency table of Mental Health

	Frequency	Cumulative frequency
Unaffected	98	38.0
Affected	160	100.0

Table 5: Frequency table of Level of Injury

	Frequency	Cumulative frequency
Unaffected	98	38.0
Affected	160	100.0

Table 6: Frequency table of Life satisfaction

	Frequency	Cumulative frequency
Unaffected	98	38.0
Affected	160	100.0

Table 7: Correlations between Mental health, level of injury and life satisfaction

		mental health	level of injury	Life satisfaction
mental health	Pearson Correlation	1	1.000**	1.000**
	Sig. (2-tailed)		.000	.000
	N	258	258	258
level of injury	Pearson Correlation	1.000**	1	1.000**
	Sig. (2-tailed)	.000		.000
	N	258	258	258
Life satisfaction	Pearson Correlation	1.000**	1.000**	1
	Sig. (2-tailed)	.000	.000	
	N	258	258	258

DISCUSSION

Present study was conducted to find out the effect of mental health on level of injury and life satisfaction among young elite athletes. The study finding shows that there is a significant correlation between mental health of elite athletes to level of injury and life satisfaction.

While engaging in sports activities at a young age provides significant physical health benefits, it also involves a risk of injury, particularly at the elite level. Balancing these benefits and risks requires a comprehensive approach that includes proper training, adequate rest, education, and medical supervision. By implementing preventive strategies and promoting a holistic approach to athlete development, it is possible to maximize the health benefits of sports participation while minimizing the risk of injury for young athletes [41].

Although their breadth is restricted, evidence from studies with bigger samples indicate that the risk of high-prevalence mental illnesses (such as depression and anxiety) among professional athletes is similar to that of the general population [42]. Nevertheless, certain athletes may be more susceptible to mental illness than others; these may include athletes who are nearing retirement from competition [43] or who are having problems with their performance [44]. Major negative life experiences, such as injury [42], may raise the risk of mental illness in top athletes [45], just as they do in the general population. However, more focused quantitative research with sufficient follow-up assessment periods are required to verify this.

Popli S, in their study evaluated the relationship between posture and perceived stress and its impact on day-to-day activities. We found in this study. 86% of young adults both males and females are affected by posture. For this study, 273 adults were chosen to evaluate the craniovertebral angle data analysis showed that 240 participants were affected [51].

Yogeshwar D, concluded in their study was conducted to evaluate the relationship between physical activity, life satisfaction, and mental well-being of college-going students and it was found that all the components were significantly correlated with each other [52].

J Singh, in their study found the effect of rounded posture on cardiorespiratory fitness and psychosocial health status. There was a significant negative correlation was found between the variables. This correlation of rounded shoulder, cardiorespiratory fitness and psychosocial health status seems important clinically because it provides evidence that those patients with increased rounded shoulder have negative impact on cardiorespiratory fitness and psychosocial health status in both males and females [53].

In their study found the correlation between physical activity and mental health the people who were more active tend to have good mental health similar to the results of our study i. e, those athletes who were mentally healthy were performing good in their respective games with low chances of injuries [54].

In many previous studies by J. Singh, it has been found that there is very beneficial effect of physical activity on health and body posture and life satisfaction of the human body. Musculoskeletal disorders are extremely common worldwide and affect people of all ages, gender and socio-demographic background in society [55].

A small-scale (N = 59) internet-based intervention did not improve attitudes, intentions, or behaviors linked to seeking assistance, but it did raise mental health literacy [46], which is a crucial step in the help-seeking process. More well-designed research using bigger samples are required, as stigma, a lack of mental health literacy, and negative experiences in the past with seeking mental health care are major obstacles for professional athletes [47]. Numerous studies have identified injury, subpar performance, exhaustion, and organizational elements like the coaching environment and expectations as common athlete-specific stresses. The findings on athlete stresses are consistent, which suggests that these areas might be addressed for skills-based intervention programs, such as resilience training [48], and problem solving [49].

The physical and mental component summary scores, as well as all eight SF-36 component scores, were found to be significantly impacted negatively by injury. We anticipated to witness declines in role and physical function physical, and physiological pain ratings following an injury, but we weren't prepared for drops in every other domains in addition. We think that this result is probably an examination of the psychological toll that damage has on these elite sportsmen. [50]

CONCLUSION

A distinct set of pressures that elite athletes face might make them more susceptible to mental illness. Important elements include coping with continuous performance pressure from competition, the psychological effects of injuries, life satisfaction, overtraining, and burnout, and intensive public and media scrutiny. More excellent epidemiology and intervention studies are required in order to measure and treat top athletes' mental health demands on per with their physical needs. The findings of these should ideally be shared outside of the organization or sports code, wherever practical.

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