Original Article

Perceived Stress as a Predictor of Well-being in Football Players: A Simple Linear Regression Analysis

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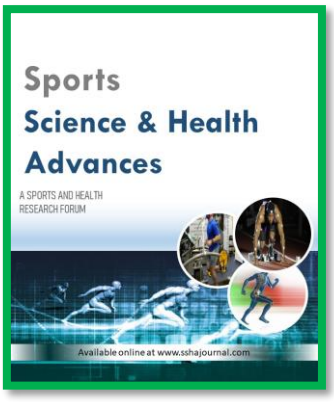

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Abstract

Purpose: Sports psychology is growing in terms of its influence on athlete performance and well-being. Despite this, the relationship between perceived stress and well-being among football players remains under explored, particularly in India. This study aims to assess this association, addressing the dearth of research on the psychological aspects of football athletes. **Material and Methods:** A regression analysis involving 143 football players from Delhi University was conducted. The sample comprised 120 males (83.91%) and 23 females (16.08%), aged between 17 to 23 years (mean = 19.3, SD = 1.03). Participants completed the Perceived Stress Scale (PSS) by Cohen et al. (1983) and the Personal Well-being Scale (PWS) by Benson et al. (2019) to measure perceived stress and subjective well-being, respectively. **Results:** The results of regression suggested that perceived stress explained 19.3% of the variance, $R^2 = 0.193$, $F(1, 141) = 33.7$, $p < 0.001$. This underscores the adverse impact of stress on athletes' overall well-being. **Conclusion:** The findings emphasize the necessity of interventions to address stress management and enhance well-being among football players. Future research should explore additional factors influencing stress and well-being, guiding tailored approaches to support athlete mental health.

Keywords: Sports psychology, Perceived stress, Well-being, Football players, India, Regression

Introduction

Sports psychology is a recent field of study, and it is now growing in terms of significance as it has beneficial effects on athlete's and coaches' performance and overall well-being (Jones et al., 2020; Make peace & Young, 2021; Mann & Narula, 2017; Mehta, 2022). Sports and physical activity are related to reduced stress, better sleep, and mental health (Gerber et al., 2014), reduced depression (Johnston et al., 2021), increased motivation (Lippke et al., 2015), reduced problematic internet use (Park, 2014). The application of psychological principles in sports is related to increased attention, performance, emotional regulation, enjoyment, and development of coping mechanisms among other things (Jewett et al., 2014). For instance, stress is one of the important variables that affect the individual negatively (O'Connor et al., 2021; Young et al., 2021). It is also linked to well-being (Hepburn et al., 2021; Teh et al., 2015). Therefore, studying the same in the context of athletes, especially among football athletes is necessary. In

India, sports psychology has been of significant interest since the 1960s and 1970s. Yet, the research has been stagnant due to many setbacks such as the stigma around the term "psychology", inadequate funding, and lack of trained officials (Thakkar, 2019). Additionally, it has been dominated by Cricket with regards to resources (Parmar, 2017). Sports psychology in India focuses on other sports such as boxing (Kumar, 2015; Panchal and Kumar, 2015; Malik, 2008; Malik, 2019). However, at present, football is one of the fastest-growing sports in India (Dhillon & Sharma, 2022). It is imperative to study perceived stress's influence on football athletes' well-being.

Cohen et al. (1983) defines perceived stress as a "measure of the degree to which situations in one's life are appraised as stressful". Due to the highly competitive environment and pressure among athletes, there is significant perceived stress (DE Pero et al., 2016; Pritchard & Wilson, 2005). High perceived stress can increase the risk for illness (Keaney et al., 2018), have a direct effect on burnout and depression (De Francisco et al., 2016), promote cortisol response (Dziembowska et al., 2019) and higher fear of failure (Gustafsson et al., 2017), and less enjoyment in athletes (Dunker et al., 2020). It is also significantly related to musculoskeletal pain (Østerås et al., 2015) and inversely related to physical activity (Stults-Kolehmainen & Sinha, 2014).

Subjective well-being was defined by Diener et al. (1984) as "psychological well-being as a subjective evaluation of one's life that is categorized by affirmative emotions, engagement, and meaning". Physical activity has been found to increase well-being in one's life (Buecker et al., 2021). Frequent and regular participation in sports is also positively related to well-being (Haga & Idén Nordin, 2015), and reduces anxiety and depression (Fujiwara et al., 2014; McMahon et al., 2017; Ruseki et al., 2014; Wheatley & Bickerton, 2017). On the contrary, there is evidence that suggests high-intensity workloads and pressure hampers an athlete's well-being. It may be due to poor adaptation to training programs, competitions, expectations, etc (Timoteo et al., 2017).

This study's objective is to investigate whether perceived stress levels significantly predict well-being in football players. The purpose for this is 3-fold. The first reason is that, though a plethora of research has been done on the relationship between stress and the well-being of various populations, like students (Chambel & Curral, 2005; Denovan & Macaskill, 2017) and primary healthcare professionals (Atanes et al., 2015). There is seldom any research being done on analyzing the relationship between stress and well-being among football athletes. Even though perceived stress (De Francisco et al., 2016; DE Pero et al., 2016; Dunker et al., 2020; Dziembowska et al., 2019; Gustafsson et al., 2017; Keaney et al., 2018; Østerås et al., 2015; Stults-Kolehmainen & Sinha, 2014; Wilson & Pritchard, 2005) and well-being (Buecker et al., 2021; Fujiwara et al., n.d.; Haga & Idén Nordin, 2015; Ruseski et al., 2014; Timoteo et al., n.d.; Wheatley & Bickerton, 2017) in sports have been studied separately among athletes. It is necessary to examine the relationship between them in the context of football athletes. The second reason is that the global pandemic coronavirus has affected the psychological aspects of individuals all over the world including perceived stress and well-being, both in India and the rest of the world (Grover et al., 2020; Kowal et al., 2020; Lades et al., 2020; Uroh & Adewunmi, 2021). It is also seen that younger people are more vulnerable to stress, anxiety, and depression (Varma et al., 2021). Therefore, there is a need to reevaluate psychological aspects among football athletes and provide help accordingly. The third is that perceived stress, well-being, and other psychological aspects are understudied among football athletes in India (Thakkar, 2019). Additionally, though football is one of the most popular and growing sports in India (Dhillon & Sharma, 2022), it has been often neglected due to the dominance of cricket in terms of resources (Parmar, 2017) and boxing in terms of research (Kumar, 2015; Panchal and Kumar, 2015; Malik, 2008; Malik, 2019). Therefore, there is a need to understand the psychological aspects among athletes of this sport. Also, there are already few studies that exist in this area in India. After the COVID-19 pandemic, it makes it even more necessary to re-evaluate and make further developments on well-being and perceived stress among football athletes. Therefore, the study hypothesizes that higher perceived stress levels will negatively predict well-being in football players.

Material and Methods

Participants

The criteria required the participants to be from the ages of 17 to 23. Also, every participant had to be enrolled in higher education and practice football regularly. After all the criteria mentioned above were ensured. 143 football athletes from Delhi University volunteered in the study through a random purposive sampling method. Out of these 143 football athletes, there were 120 males (83.91%) and 23 females (16.08%). The age ranged from 17 to 23 ($\bar{x}$= 19.3, S=1.03).

Tools

The Perceived Stress Scale (PSS) by Cohen et al. (1983) measures the "degree to which situations in one's life are appraised as stressful". It consists of 10 items, out of which items 4,5,7, and 8 are scored by reversing the responses. The options range from never to very often. The items ask about the perceived stress experienced in the last month. For example, "In the last month, how often have you been upset because of something that happened unexpectedly?". The test-retest reliability of the PSS-10 was >0.70. Another scale was used for measuring well-being was The Personal Well-being Score (PWS) by Benson et al. (2019). It is based on the Office of National Statistics (ONS) four subject well-being questions. It calculates subjective well-being from 4 items, giving a 13-point scale ranging from 0 to 12. The types of answers range from strongly agree to disagree). The internal consistency of the test is strong with Cronbach's α=0.90.

Procedure

The study took a sample of 143 football athletes through random purposive sampling. All participant's voluntary consent was taken through a detailed consent form. In the data collection phase, two tests were administered to the participants- the Perceived Stress Scale and the Personal Well-being Score. Before that, demographic information such as name, age, sex, school/university, and state were taken. All doubts were resolved that came up at any point in time.

Results

Before evaluating the predictive efficacy of our model, a comprehensive assessment of its fundamental assumptions was conducted to validate the integrity of our analysis. Examination of scatter plots meticulously scrutinized the relationship between predictors and the dependent variable for linearity, revealing no deviations from linear expectations. The Shapiro-Wilk test provided empirical support for the normality of residuals (W = .99, p = .95), thus satisfying the normality criterion.

Table 1 Simple Linear Regression

Model	R	R^2	Adjusted R^2	Overall Model Test			
				F	(df^1)	(df^2)	p
1	0.439	0.193	0.187	33.7	1	141	<.001

Furthermore, homoscedasticity, ensuring consistent variance of residuals across predicted values, was affirmed through the Breusch-Pagan test (χ^2 = 1.338, p = 0.25). Additionally, the Durbin-Watson statistic, yielding a value of 1.89, effectively negated the presence of auto correlation among residuals, thereby attesting to the independence of errors. Concerns regarding multicollinearity were alleviated as the Variance Inflation Factor (VIF) for the predictor remained substantially below the established threshold of 5.

Discussion

In concert, these diagnostic assessments robustly validate the foundational assumptions underpinning our linear regression model, providing a sound basis for subsequent analyses. Simple linear regression was applied to assess whether perceived stress significantly predicts well-being in football players. The results of regression suggested that perceived stress explained 19.3% of the variance, $R2= 0.193$, $F (1, 141) = 33.7$, $p< 0.001$. Thus, perceived stress negatively predicts well-being in football players $\beta = -2.17$, $t = -5.80$, $p <0.001$.

The present study hypothesized that higher perceived stress levels will negatively predict well-being in football players. The results indicated that perceived stress significantly predicted well-being along with perceived stress explaining 19.3% of the variance in this study. Based on the empirical evidence, this hypothesis was retained in this study. It elucidates that well-being decreases simultaneously as perceived stress increases in an athlete. There may be many reasons for high perceived stress among athletes such as a higher competitive environment and regular high-load training sessions (DE Pero et al., 2016; Pritchard & Wilson, 2005; Timoteo et al., 2017). Previous research has suggested the same in other populations such as undergraduates (Chambel & Curral, 2005; Denovan & Macaskill, 2017; Harris et al., 2017), Urban African American Women (Young et al., 2004), and primary care health professionals (Atanes et al., 2015). Moreover, other stressors such as academic pressure (Hamlin et al., 2019), poor diet, lack of sleep, and financial strains (Stallman & Hurst, 2016) also have a significant effect on the well-being of athletes. If these reasons are not addressed in time, high perceived stress can negatively affect an individual. Low well-being and greater vulnerability to injuries and illnesses (Gabbett et al., 2014). All these factors will have a profound impact on all aspects of the athlete's life such as efficiency in training, academic performance, and interaction with friends and family.

There are alternative methods, through which this study could have been made more comprehensive and accurate. This study acknowledges the following three major limitations. The sample was mainly male football athletes. The reason for this could be the lack of female participation in sports (Nair & Eapen, 2021). So, it is suggested that future studies also focus specifically on female athletes. As the tools used to measure perceived stress and well-being were self-report measures, there may be self-report bias because of social desirability due to the mental stigma in society (Thakkar, 2019). However, this limitation was considered beforehand, and it was made sure to encourage honest answers through the assurance of confidentiality to participants to moderate social desirability as much as possible. Another limitation was that the sample was taken entirely from Delhi University, so it is recommended to also consider football athletes who are currently not enrolled in higher academics or other universities that may represent a more inclusive sample within the age group of 17 to 23 years old.

Conclusion

The present study showed that perceived stress significantly predicts well-being among football athletes. High perceived stress and low well-being can cause burnout, depression, and unhealthy coping strategies in late adolescents and young adults. Therefore, it is necessary to identify football athletes suffering from high perceived stress. As a result, appropriate and effective intervention procedures can be developed and applied to these football athletes. It is important to do so because it has a direct impact on their performance and efficiency. It is also important to include procedures to teach coping mechanisms such as mind-body-stress-reduction (MBSR) techniques (di Fronso et al., 2022; Stillwell et al., 2017), so the vulnerability to high perceived stress of these football athletes can be moderated.

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