

# Impact of Football Sports Participation on Generalized Anxiety Disorder and General Procrastination among Undergraduate Male Students

Haris Ahmad<sup>1</sup>, Asif Ali<sup>2</sup>, Fariq Ahmed<sup>3</sup>, Muhammad Azam<sup>4</sup>, Hammas Mazhar<sup>5</sup>

<sup>1</sup>BS Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

<sup>2</sup>Associate Professor, Department of Physical Education & Sports Sciences, Government College University, Lahore, Pakistan.

<sup>3</sup>MPhil Scholar, Department of Physical Education & Sports Sciences, Government College University, Lahore, Pakistan.

<sup>4</sup>Assistant Professor, Department of Physical Education & Sports Sciences, Government College University, Lahore, Pakistan.

<sup>5</sup>BS Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

Correspondence: [asif.ali@gc.edu.pk](mailto:asif.ali@gc.edu.pk)<sup>2</sup>

## ABSTRACT

**Aim of the Study:** General procrastination and Generalized Anxiety Disorder (GAD) are two influential variables that might impact significantly on the lives of students. However, probable interventions and non-pharmaceutical treatments are yet to be discovered that might break the association between general procrastination and GAD.

**Methodology:** To address this specific research gap, we selected 180 university students (M = 21.74, SD = 1.66), among which 90 were varsity football players (M = 21.92, SD = 1.63) and 90 were non-athletes (M = 21.56, SD = 1.69). The participants were selected through a convenient sampling technique). A self-administered demographic section, GAD-2, and GPS-9 were used for the gathering of data.

**Findings:** The t-test results showed that GAD and general procrastination were significantly lower among male varsity football players as compared to varsity non-athlete students. Additionally, regression analysis showed a strong positive association between elevated GAD and higher procrastination levels among male varsity non-athlete students as compared to male varsity football players who showed no significant relationship among both variables.

**Conclusion:** The findings conclude that sports participation, particularly football sports, positively mitigates GAD and general procrastination, thus improving the overall mental health of university students.

**Keywords:** Generalized Anxiety Disorder, General Procrastination, Football, Undergraduate Students, Student Athletes.

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## 1. INTRODUCTION

General procrastination and Generalized Anxiety Disorder (GAD) are two influential variables that have been suggested to influence significantly on the lives of students (Rozental, Forsström, Hussoon, & Klingsieck, 2022). As these students continue to grow through their academic years, this impact also keeps expanding (Jochmann, Gusy, Lesener, & Wolter, 2024). Previous studies have also suggested that both these variables have a strong relationship with each other in the context of Higher Education (Jamil, Ashouri, Zamirinejad, & Mahaki, 2021; Rozental et al., 2022). GAD can be described as a chronic condition of mental health in which an individual experiences an uncontrollable worry about various aspects of his life (Hossain et al., 2020). It has been observed that those students who are diagnosed with GAD are often unable to control their worry (Chirikov, Soria, Horgos, & Jones-White, 2020). Furthermore, it might also influence negatively on their physical health by causing muscle tension and headaches (Al-Tammemi, Akour, & Alfalah, 2020). Past studies have suggested that the affected students might also lose their ability to concentrate or make decisions as a result of GAD. This cycle of worry and delay might further lead students to general procrastination thus increasing stress and mental strain among them (Saplavska & Jerkunkova, 2018).

General procrastination can be defined as a continuous habit of delaying the tasks due to lack of motivation and anxiety (Lai, Badayai, Chandrasekaran, Lee, & Kulasingam, 2015). It is quite a common behavior as most of the students choose short-term comfort rather than completing important tasks (Rozental et al., 2022). However, it becomes problematic when this short-term comfort is turned into a habitual pattern, leading to reduced overall productivity (Limone, Sinatra, Ceglie, & Monacis, 2020). Anxiety, depression, stress, and exhaustion can all be exacerbated by severe procrastination which can also result in feelings of regret, guilt, and self-denial (Shi, Zhai, Li, Shi, & Fan, 2021). Furthermore, in the long run, chronic procrastination might also harm mental health, contributing to feelings of guilt, inadequacy, and even depression (To, Lo, Ng, Wong, & Choi, 2021). In addition, the reasons for general procrastination may vary from student to student as some fear the risk of failure while others might lack the ability to manage time effectively (Ma, Li, & Lu, 2023). Hence, these negative outcomes demand an active and effective treatment to tackle the long-term influences of general procrastination among students (Salguero-Pazos & Reyes-de-Cózar, 2023).

Additionally, both GAD and general procrastination have been suggested to influence significantly on the lives of university students. GAD has been reported to have a prevalence rate of 41% whereas, up to 80% of university students have been reported to suffer from general procrastination (Liyanage et al., 2021). Furthermore, around 40% of these undergraduate students were reported as frequent procrastinators which is particularly problematic (Magalhães et al., 2021). A growing number of researchers have invested their energies in discovering interventions or non-pharmaceutical treatments to break the association between general procrastination and GAD (Harmer, 2022). For varsity undergraduate students, sports participation has been recommended to improve psychological well-being (Egan, 2019), self-efficacy (McCormick, Meijen, Anstiss, & Jones, 2019), academic success (Cross & Fouke, 2019), dual career (Condello, Capranica, Doupona, Varga, & Burk, 2019) and overall productivity (Silva, Monteiro, & Sobreiro, 2020). Many past studies have reported how sports involvement might improve the mental health of students, which further emphasizes the need to find out if these advantages also apply to breaking the association between GAD and general procrastination (Teychenne et al., 2020).

In addition, engagement in competitive team sports has been predicted to enhance mental and physical well-being by lowering stress, anxiety, and depressive symptoms (Zhang et al., 2022). The risk of GAD and social anxiety disorder have also been suggested to decrease by active involvement in team sports (Herring, Gordon, McDowell, Quinn, & Lyons, 2021). In particular, organized team sports like football might have a stronger positive association with varsity students' mental health problems, predicting that participation in football sports might be the key to breaking the relationship between GAD and general procrastination (Snedden et al., 2019). Football, however, is a widely popular sport that might provide advantages beyond its physical aspects. Furthermore, it might also offer noteworthy psycho-educational

and social benefits including the development of social skills, teamwork, rule-abidingness, skill acquisition, shared recreational opportunities, personal accomplishment, team spirit, and peer support—all of which are linked to improved mental health (Friedrich & Mason, 2017). Hence due to the association between university students' mental health and their participation in team sports, particularly football in past studies, there is a need for further investigation in light of these encouraging results. There is also a substantial research vacuum concerning anxiety disorders as potential indicators of general procrastination in the varsity student population.

### ***1.1. Study Objectives***

This study primarily aims at assessing the connection between GAD and general procrastination among male undergraduate university students. Secondly, by analyzing varsity football players and non-players as a comparison, the study also aims to assess how team sports participation at the university level might affect the association between GAD and general procrastination among both groups.

### ***1.2. Hypotheses***

**H1:** We assume that there may be a positive impact of participation in football sport on GAD and general procrastination among university students. Our assumption is based on evidence generated by past studies that were conducted in this regard (Sanlav, Bulgurcuoğlu, & Tazegül, 2022).

**H2:** We hypothesize that there will be a positive association between GAD and general procrastination among the non-athletic participants group. However, this effect may be mitigated, and GAD may not show a positive impact on general procrastination among participants who engaged in varsity football sports. This assumption of ours is also based on the evidence extracted from past studies (Rostami & Feridoonfar, 2021).

### ***1.3. Significance of the study***

The findings of this study may serve as a policy guide for mitigation of general procrastination and GAD in educational institutes thus improving academic performance and psychological well-being of varsity students.

## **2. MATERIALS AND METHODS**

### ***2.1. Study Design***

The research implied a cross-sectional study design to collect data from a sample of individuals at a single point in time, thus allowing interactive inquiry.

### ***2.2. Population and Sample***

Data was collected from all distinct universities that had a football team and were located in a big city in Pakistan. Furthermore, these teams should also be representing their respective universities at intervarsity, national and international levels. After a comprehensive search, we could only find 5 eligible universities. All football players from these five university teams were selected as samples of the study. Additionally, a similar number of non-athlete varsity students were also selected as control of varsity football players. Hence, the study sample comprised 180 university students ( $M = 21.74$ ,  $SD = 1.66$ ) among which 90 were varsity football players ( $M = 21.92$ ,  $SD = 1.63$ ) and 90 were non-athletes ( $M = 21.56$ ,  $SD = 1.69$ ). The experience levels of varsity football players were very wide-ranging, as they ranged between 2 to 13 years ( $M = 7.71$ ,  $SD = 2.451$ ). All participants were enrolled in various academic years of their undergraduate programs, ranging from the first to the fourth year. The department, study program, and semester of the varsity football players and non-athletes were the same from whom data was collected. The inclusion criteria for varsity football players were that they must be part of the university's football team, have intervarsity, national, or international experience, and must also be enrolled in the BS program. Similarly, non-athlete students who have neither participated in any sports competition nor have been part of any

sports team were recruited as the control group for the study. Due to religious and cultural constraints, we were unable to find any female varsity football teams, which forced us to exclude female athletes from the study.

### 2.3. Instruments

Data was collected from specialized universities in Lahore, Pakistan by utilizing the following instruments:

#### 2.3.1. Demographic and Personal Information

The demographic and personal information consisted of 7 components, including the university's name, year of study, age, family economic status, athletic status, participation level, and sports experience (years) for varsity football players only.

#### 2.3.2. Generalized Anxiety Disorder-2

The anxiety assessment tool, GAD-2, was developed by Kroenke, Spitzer, Williams, Monahan, and Löwe (2007). This tool was utilized in this study due to a robust Cronbach's alpha score of 0.71 which is considered reliable and valid. Likert scale was used to evaluate the two components with the highest of four points (0 being "Not at all" and 3 being "Everyday"). The anxiety scale indicated severe levels of anxiety among participants with higher scores whereas lower scores depicted no anxiety. The scale ranges from 0 to 6 in terms of its scoring.

#### 2.3.3. General Procrastination Scale (GPS-9)

The GPS-9 also known as Lay's General Procrastination Scale was developed by Sirois, Yang, and van Eerde (2019). This nine-component scale is based on a five-point scale ranging between "strongly agree" to "strongly disagree". Procrastinating responsibilities of individuals were measured using this scale. Higher scores indicated higher procrastination behavior and vice versa. The scale score ranged from nine to forty-five. The Cronbach alpha coefficient of this scale was 0.74 which was established during validity and reliability analyses.

### 2.4. Procedure

Data was collected by using a combination of demographic questionnaire, procrastination scale, and anxiety scale. It was ensured that the participants were aware of their voluntary participation. The confidentiality of the collected data was warranted, and it was also ensured that the data would not be transferred to any third party. Data collection was for research purposes only and it will not impact participants' lives in any way. The participants were thoroughly guided before filling out or completing the questionnaire. The researcher used a face-to-face strategy to collect data from the participants. Each participant was given 10-15 minutes to complete all sections of the questionnaire. Permission for questionnaire usage was granted by the concerned researchers via email.

### 2.5. Data Analysis

Simple linear regression and descriptive tests were utilized to analyze the data through SPSS version 27 (IBM Crop 2020). The *p-value* was fixed at < .05 which aided in evaluating the level of significance.

## 3. RESULTS

**Table 1.** Participants' Demographic Characteristics

Variables	<i>f</i> (% age)
<b>Family income status</b>	
Enough to live	31 (17.2)
Middle class	132 (73.3)
Wealthy	17 (9.4)

<b>Athletic status</b>	
Varsity football players	90 (50)
Non-Athletes	90 (50)

Note: N = 180, f = Frequency, % = percentage

The descriptive analysis revealed the demographic profile and other characteristics of the participants. The majority of participants were recognized as middle class (N = 132, 73.3%), followed by those who disclosed having enough income to live (N = 31, 17.2%), and a smaller proportion ascertained as wealthy (N = 17, 9.4%). The sample was evenly dissected between varsity football players and non-athletes, with each group comprising 90 participants (50.0%).

**Table 2.** *Demographics Characteristics of Varsity Football Players and Non-Athlete Participants*

	<b>Varsity Football Players</b>	<b>Non-Athletes</b>
<b>Variables</b>	<b>f (% age)</b>	<b>f (% age)</b>
<b>Family income status</b>		
Enough to live	16 (17.8)	15 (16.7)
Middle class	64 (71.1)	68 (75.6)
Wealthy	10 (11.1)	7 (7.8)
<b>Highest playing Level</b>		
Intervarsity	55 (61.1)	N/A
National	30 (33.3)	N/A
International	5 (5.6)	N/A

Note: N = 180, f = Frequency, % = percentage, N/A= No Participation

The descriptive analysis demonstrated the demographic attributes of both varsity football players and non-athlete participants. Majority of the football players showed to be from the middle-class family (N = 64, 71.1%). A smaller sample was identified as having enough income to live (N = 16, 17.8%), while the lowest percentage of sample was ascertained as wealthy (N = 10, 11.1%). The majority of varsity football players' participation was significant at the intervarsity level (N = 55, 61.1%), followed by the national level (N = 30, 33.3%). A small group of varsity football players had international playing experience as well (N = 5, 5.6%).

Additionally, demographic characteristics of the male non-athlete participants were revealed by the descriptive analysis. Most of the non-athlete participants were recognized as middle class (N = 68, 75.6%), followed by those who showed having enough income to live (N = 15, 16.7%), and a smaller proportion ascertained themselves as wealthy (N = 7, 7.8%). All non-athlete participants (N = 90, 100.0%) revealed that neither they played football at any level, nor they had any sort of football experience.

**Table 3.** *Mean Comparison of scores of Varsity Football Players and Non-Athlete Participants on GAD and General Procrastination*

	<b>Varsity Football Players</b>		<b>Non-Athletes</b>				
<b>Variables</b>	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>	<b>t (178)</b>	<b>p</b>	<b>Cohen's d</b>
GAD	1.46	1.42	2.71	1.75	5.29	.000	0.789
General Procrastination	25.64	4.94	28.63	5.41	3.87	.000	0.577

A significant difference in mean scores was identified by independent samples t-test in GAD levels of both varsity football players and non-athlete participants. Varsity football players (M = 1.46, SD = 1.42) had significant lower levels of GAD than non-athletes (M = 2.71, SD = 1.75), with  $t(178) = 5.29$ ,  $p < .05$ . The effect size, Cohen's  $d = 0.789$ , demonstrated a statistically significant medium to large effect. This

leads to the conclusion that varsity football players are likely to have significantly lower levels of GAD as compared to non-athlete participants.

Similarly, the t-test showed a significant contrast in general procrastination levels between the two groups. Varsity football players ( $M = 25.64$ ,  $SD = 4.94$ ) revealed lower general procrastination levels than non-athletes ( $M = 28.63$ ,  $SD = 5.41$ ), with  $t(178) = 3.87$ ,  $p < .05$ . The effect size, Cohen's  $d = 0.577$ , demonstrated a statistically significant medium effect. The data indicated that participation in football tended to lower general procrastination levels among students.

**Table 4.** *Descriptive Analysis of GAD and General Procrastination among University Students*

Variables		<i>f</i> (% age)
Anxiety category	No Anxiety	140 (77.8)
	GAD	40 (22.2)
Procrastination category	Low Procrastination	79 (43.9)
	High Procrastination	101 (56.1)

The results of the descriptive analysis (see Table 4) revealed the attributes among overall university students in terms of GAD and procrastination. The frequencies for the first variable, anxiety, as demonstrated were: no anxiety was indicated by 140 students (77.8%), while GAD was demonstrated by 40 students (22.2%). The frequencies for the second variable, general procrastination, as demonstrated were: low procrastination was indicated by 79 students (43.9%), and high procrastination was disclosed by 101 students (56.1%).

**Table 5.** *Characteristics of GAD and General Procrastination among Varsity Football Players and Non athlete Participants*

		Non-Athletes	Varsity Football Players
Variables		<i>f</i> (% age)	<i>f</i> (% age)
Anxiety category	No Anxiety	58 (64.4)	82 (91.1)
	GAD	32 (35.6)	8 (8.9)
Procrastination category	Low Procrastination	30 (33.3)	49 (54.4)
	High Procrastination	60 (66.7)	41 (45.6)

The results obtained from the descriptive analysis (see Table 5) revealed the characteristics of non-athlete students concerning GAD and general procrastination. The frequencies for the first variable, anxiety, as demonstrated were: no anxiety was indicated by 58 students (64.4%), while GAD was showed by 32 students (35.6%). The frequencies for the second variable, general procrastination, as demonstrated were: low procrastination was indicated by 30 students (33.3%), while high procrastination was showed by 60 students (66.7%).

The results obtained from the descriptive analysis (see Table 5) revealed the characteristics of varsity football players concerning GAD and general procrastination. The frequencies for the first variable, anxiety, as demonstrated were: no anxiety was indicated by 82 students (91.1%), while GAD was showed by 8 students (8.9%). The frequencies for the second variable, general procrastination, as demonstrated were: low procrastination was indicated by 49 students (54.4%), while high procrastination was showed by 41 students (45.6%). The main conclusion that can be drawn is that varsity football players tended to have lower levels of GAD and general procrastination compared to non-athlete students.

**Table 6.** *Regression Coefficients of GAD on General Procrastination among Varsity Football Players*

Dependent Variable	Predictor variable	B	$\beta$	SE	$R^2$	P
General Procrastination	GAD	0.272	0.078	0.371	0.006	0.465

The effect of GAD on general procrastination among varsity football players is shown in Table 6. GAD was the predictor variable, and the outcome was the general procrastination, which worked as the dependent variable. The obtained results indicated that GAD does not have a significant relationship with general procrastination among varsity football players ( $\beta = 0.078$ ,  $p = 0.465$ ). This leads to the conclusion that changes in anxiety levels do not significantly demonstrate changes in procrastination tendencies within the varsity football players.

**Table 7.** *Regression Coefficients of GAD on General Procrastination among Non-Athlete Participants*

<b>Dependent Variable</b>	<b>Predictor variable</b>	<b>B</b>	<b><math>\beta</math></b>	<b>SE</b>	<b>R<sup>2</sup></b>	<b>P</b>
General Procrastination	GAD	0.919	0.297	0.315	0.088	0.004

The effect of GAD on general procrastination among non-athlete participants is shown in Table 7. GAD was the predictor variable, and the outcome was the general procrastination, which worked as the dependent variable. The R<sup>2</sup> value of 0.088 demonstrates that GAD explained 8.8% of the variance in general procrastination, with  $F(1, 88) = 8.524$ ,  $p = 0.004$ . The data suggests a significant positive relationship between GAD and general procrastination among non-athlete participants ( $\beta = 0.297$ ,  $p = 0.004$ ). This leads to the conclusion that there is a direct relationship between GAD and general procrastination levels among non-athlete participants. The higher the level of anxiety, the higher is the level of procrastination among non-athlete students.

This aspect of the analysis suggested that GAD is interlinked with general procrastination. In non-athlete participants, GAD explains 8.8% of general procrastination. This indicates that higher anxiety levels often lead to more procrastination. However, among varsity football players, GAD does not significantly influence general procrastination, indicating that they might manage GAD differently or have other factors that decrease its impact.

#### 4. DISCUSSION

The purpose of this research was to study the influence of football participation on Generalized Anxiety Disorder (GAD) and General Procrastination and their association among male undergraduate university students. The t-test results showed that GAD and general procrastination were significantly lower among male varsity football players as compared to varsity non-athlete students. Additionally, regression analysis indicated a strong positive association between elevated GAD and higher procrastination levels among male varsity non-athlete students as compared to varsity football players who showed no significant relationship among both variables. This novel discovery suggested that playing football sports might lessen the detrimental effects of GAD on general procrastination among varsity students. These findings further highlight the potential protective benefit of varsity football involvement in fostering improved time management and mental health, which in turn might support higher academic productivity among university students.

The results pertaining to varsity undergraduate students who are not athletes are consistent with earlier studies (Constantin, English, & Mazmanian, 2018; He, 2017; Saplavaska & Jerkunkova, 2018; Vivar-Bravo, La Madrid Rojas, Fuster-Guillén, Álvarez Silva, & Ocaña-Fernández, 2021; Yerdelen, McCaffrey, & Klassen, 2016). According to these studies, general procrastination may become more common in response to severe anxiety or GAD as a coping mechanism for emotional stress, exhaustion, academic stress, and excessive demands. They also suggest that to avoid the discomfort and intense feelings associated with severe anxiety, general procrastination may develop rapidly in this group (Hutchison, Penney, & Crompton, 2018). Considering these findings, it can be proposed that GAD might disrupt critically important functions such as study habits (Salaam & Mustafa, 2024), relationships with teachers (Liyanage et al., 2021), time management (Barel et al., 2023), and concentration (Falk, Joseph, Smith, & Wilk, 2023), all of which are important for academic success (Cross & Fouke, 2019). One possible reason

for this discrepancy could be the absence of formal training programs which have been demonstrated to increase motivation and focus (He, 2017).

In addition, the results regarding varsity football players indicated that those students who consistently participated in football sports had low GAD and general procrastination. These findings are of significant importance as no past study has assessed the direct association among these variables in varsity football players. Varsity students who participated in distinct team sports have previously been suggested to manage negative psychological states better than non-athlete students due to their regular sports participation. Additionally, it has also been observed that participating in regular team sports might improve executive function deficits (Pluhar et al., 2019), reduce anxiety in stressful situations (Wang & Li, 2022), improve self-control (Sohail, Ali, & Ahmed, 2023) and promote psychological health in varsity students (Egan, 2019). As per Friedrich and Mason (2017), athletes who participate in sports were also able to manage stress better and maintain better emotional equilibrium. Based on these findings, it can be suggested that participation in team sports like football might improve the overall mental health of students enrolled in higher education institutions.

Lastly, the results of simple linear regression also revealed novel findings. The obtained results indicated that GAD does not have any significant relationship with general procrastination among varsity football players as compared to non-athlete students who portrayed a significant positive association between both variables. This finding suggests that participation in team sports like football might nullify the probable positive associations between GAD and general procrastination among university students. Apart from being novel, these findings are also of paramount importance as these findings highlight the importance of participation in team sports like football to reduce the effect of GAD on general procrastination thus leading to increased academic productivity and output among university students. However, further studies accompanying strong study design are still required in this regard to strengthen the reliability of the current findings.

#### **4.1. Practical Implications**

The findings of the study emphasize the need for universities to promote team sports programs, particularly football, to help students handle academic pressure and reduce GAD which might aid in mitigating general procrastination among them. Additionally, encouraging football sports participation might also be an effective strategy to improve their psychological health, emotional well-being, and time management.

### **5. CONCLUSION**

The study was conducted with the objective of assessing the influence of participation in football sports on GAD and general procrastination and its association among male undergraduate university students. The results of the study suggested that anxiety and procrastination were comparatively lower in male varsity football players as compared to non-athlete varsity students. These findings highlight the positive influence of sports participation in mitigating GAD and its impact on general procrastination, thus improving the overall mental health of university students.



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## Conflict of Interest

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## ORCID iDs

Haris Ahmad<sup>1</sup>  <https://orcid.org/0009-0005-3608-4204>

Asif Ali<sup>2</sup>  <https://orcid.org/0000-0001-5270-7241>

Fariq Ahmed<sup>3</sup>  <https://orcid.org/0009-0007-3919-1966>

Muhammad Azam<sup>4</sup>  <https://orcid.org/0000-0002-1464-2595>

Hammas Mazhar<sup>5</sup>  <https://orcid.org/0009-0001-8789-4574>

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