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Abstract: *The study examined the relationship between athletic performance and physical stress (fatigue and illness), social stress (family, teachers, and behaviors), and psychological stress (sleep and emotions), as well as the degree to which each stress affected performance. Self-administered surveys were used in a quantitative manner to evaluate athletes' perceived performance and these stressors. 434 athletes from two districts' government colleges participated in the study. Significant positive relationships between all forms of stress and performance were found via analysis. Subsequent investigation revealed that social stress and psychological stress gradually increased the explained variance when added to the model, with physical stress alone accounting for a sizable amount of the performance variance. Future studies ought to examine the fundamental processes via which stress affects performance and look into these connections in a wider range of sample sizes.*

Key Words: Athletic Performance, Physical Stress, Fatigue, Illness, Social Stress, Psychological Stress

Introduction

Students who participate in college athletics have access to a special setting where they can pursue academic and athletic greatness. While there are many advantages to playing sports, there is also a complicated network of stressors that can negatively affect an athlete's performance (Sarkar, M., & Fletcher, D., 2014). The goal of this research, "Stress and Performance in College Sports: A Comprehensive

Examination of the Physical, Social, and Psychological Factors," is to clarify this complex relationship. Athletes are exposed to a variety of stressors due to the rigorous nature of collegiate athletics. Extensive training regimens, potential injuries, and the ongoing need to enhance physical capabilities are the main causes of physical stress (Gabbett, T. J. 2016). The balance of sporting responsibilities with social lives, team relationships, and competitive expectations can all lead to social stress (DeFreese, J. D., & Smith,

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A. L. [2014](#)). Psychological stress can also appear as performance anxiety, fear of failing, and concerns about preserving academic standing while participating in athletics (Chang, C. J., Putukian, et al, [2020](#)). It is essential to comprehend how these stressors interact with athletic performance. The purpose of this study is to ascertain how college athletes' performance is impacted by physical, social, and psychological stress. We hypothesize that:

1. There is a significant relationship between the main variables of stress (physical stress, social stress, and psychological stress) and sports performance at the college level (Hypothesis 1).
2. There is a significant effect of the main variables of stress (physical stress, social stress, and psychological stress) on the sports performance of students at the college level (Hypothesis 2).

By looking at these variables, we want to discover important things about the overall health of collegiate athletes and find methods to improve both their mental and physical well-being.

Objectives

1. To determine the relationship between the main variables of stress (Physical stress, social stress and psychological stress) and sports performance at the college level.
2. To determine the effect of the main variables of stress (Physical stress, social stress and psychological stress) on the sports performance of the students at the college level.

Literature Review

A competitive atmosphere that encourages athletes to achieve both academic and physical excellence is provided by collegiate athletics. While there are many advantages to playing sports, there is also a complicated network of stressors that can negatively affect an athlete's performance (Nicholls, A. R., Polman, et

al.,[2012](#)). In exploring the complex relationship between stress and athletic performance, this literature review focuses on the unique roles that physical, social, and psychological stress plays in the lives of collegiate players.

Performance and Physical Stress

Athletes are exposed to a variety of physical stressors due to the rigorous nature of collegiate athletics. Physical stress is exacerbated by rigorous training regimens, the never-ending pursuit of excellence, and the possibility of injury (Bittner et al., [2011](#)). According to research, experiencing too much physical stress can result in exhaustion, a decline in performance, and an increased risk of injury (Soligard et al.,[2016](#)).

Nonetheless, certain research suggests a nonlinear association between physical stress and performance, wherein mild stress might genuinely improve performance by inducing hormonal reactions that intensify attentiveness and concentration (Nickels,[2019](#)). Comprehending the intricate relationship between physical strain and performance is essential for enhancing training regimens and recuperation tactics for collegiate athletes.

Performance and Social Stress

In addition, team dynamics, competitive expectations, and juggling social obligations with athletic commitments present social stressors for collegiate athletes (Hatteberg,[2015](#)). According to (Johan Hauge, L., Skogstad, A., & Einarsen, [2007](#)), unfavourable team environments that are marked by a lack of support, conflict, or poor communication can cause social stress and impair productivity. Performance can also be adversely affected by social evaluation concerns and competitive demands from coaches, teammates, or fans (Havard,[2014](#)).

On the other hand, social support from teammates, coaches, and family can reduce stress and help athletes perform better (DeFreese & Smith, [2013](#)). In order to create a supportive workplace that lowers social stress

and improves athlete well-being and performance, it is imperative to foster positive team dynamics and strong social ties.

Performance and Psychological Stress

College athletes experience psychological stress in a variety of ways, such as performance anxiety, fear of failing, and struggles to maintain their academic standing while pursuing athletic goals (Mistretta et al., 2017). According to (Farina & Cei, 2019), psychological stressors have the potential to impair focus, cause negative self-talk, and ultimately impair athletic performance.

On the other hand, psychological stress may benefit athletes' performance if it helps them concentrate and use their worries as fuel for increased effort (Moran, 2012). It is essential to comprehend the distinct forms of psychological stress encountered by collegiate athletes in order to create coping mechanisms and mental health therapies that will maximize performance.

Methodology

In Districts Bhakkar and Mianwali, Pakistan, this study examined the connection between stress and athletic performance in collegiate athletes. The study set out to accomplish two objectives:

1. To determine the relationship between the main variables of stress (Physical stress, social stress and psychological stress) and sports performance at the college level.
2. To determine the effect of the main variables of stress (Physical stress, social stress and psychological stress) on the sports performance of the students at the college level.

We hypothesized that:

1. There is a significant relationship between the main variables of stress (physical stress, social stress, and psychological stress) and sports performance at the college level (Hypothesis 1).

2. There is a significant effect of the main variables of stress (physical stress, social stress, and psychological stress) on the sports performance of students at the college level (Hypothesis 2).

Participants

All male students at government colleges in Districts Bhakkar and Mianwali who participated in different sports were the study's target group. Time restrictions led to the selection of a demographic sample. A stratified random sampling technique was used, in accordance with Gay (2003).

- Stratum 1: District Bhakkar's government degree colleges (n = 7)
- Stratum 2: District Mianwali Government Degree Colleges (n = 6)

A 50% sample of athletes was chosen from each stratum using proportionate random sampling. A representative sample from both districts was ensured as a result.

Inclusion Criteria

Male students taking part in a college-level athletics program;

Enrolled in a government degree college in Districts Bhakkar or Mianwali.

Exclusion Criteria

Female pupils, as a result of the emphasis on male athletes.

Athletes with illnesses or injuries could have a major effect on their performance.

Athletes made up half of the target sample size, or 434, out of an anticipated 867 total. But in order to account for the possibility of data loss, the researchers tried to gather information from a somewhat bigger sample (about 450).

Data Collection

The study utilized a quantitative methodology, utilizing a self-administered survey tool. To ensure clarity and comprehensibility, the survey was piloted with a small sample of athletes after

it was constructed based on a review of the literature already in existence.

The survey was divided into multiple sections:

1. Demographic Data: In this section, the participant's age, college affiliation, level of athletic activity, and family income were all gathered.
2. Stress Measures: Likert-type ratings ranging from "strongly disagree" to "strongly agree" were used in this part to assess bodily stress (fatigue and illness), social stress (family, teachers, and behaviour), and psychological stress (sleep and emotions).
3. Athletic Performance: To gauge athletes' perceived levels of performance in their various sports, this portion used a validated scale.

Each participant received a physical copy of the survey at their campus. To address inquiries and guarantee that the survey was completed correctly, researchers were on hand.

Data Analysis

For statistical analysis, the questionnaire data were coded and imported into SPSS (Version 24). The data were summarized using descriptive statistics (variance, mean, standard deviation, and range).

Pearson's correlation coefficients were computed in order to investigate the links between stress factors and athletic performance (Hypothesis 1). Multiple regression analysis was done to ascertain the significant impact of stress variables on athletic performance (Hypothesis 2).

Ethical Considerations

This study followed the guidelines for ethical research. Prior to data collection, informed consent was acquired from every participant. The responses of the participants were kept private and anonymous. Prior to the start of data collection, the Gomal University Institutional Review Board (IRB) authorized the research procedure. Questionnaires that were not useable or incomplete were not included in the final analysis.

Data Analysis

H1: There is a significant relationship between the main variables of stress (Physical stress, social stress and psychological stress) and sports performance

Pearson's correlation coefficients show the relationship between the main variables of stress and Sports performance.

Table 1

Testing Variables		Physical Stress	Social Stress	Psychological Stress	Sports Performance
Physical Stress	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	362			
Social Stress	Pearson Correlation	.274**	1		
	Sig. (2-tailed)	.000			
	N	362	362		
Psychological Stress	Pearson Correlation	.057	.230**	1	
	Sig. (2-tailed)	.279	.000		
	N	362	362	362	
Sports Performance	Pearson Correlation	.777**	.659**	.561**	1

Testing Variables	Physical Stress	Social Stress	Psychological Stress	Sports Performance
Sig. (2-tailed)	.000	.000	.000	
N	362	362	362	362

** . Correlation is significant at the 0.01 level (2-tailed).

The above table shows the relationship between the sports performance of students at the college level and the Physical stress, social stress and psychological stress of the students. The data indicates that there is a significant relationship between physical stress and sports performance of the students at the college level the relationship appeared as $r^2 = .777$ which was significant at alpha level .01. The data of the Table indicates that there is a significant relationship between social stress and sports performance of the students at college level the relationship appeared as $r^2 = .659$ which was significant at alpha level .01. The data indicates that there is significant relationship between psychological stress and sports performance of

the students at college level the relationship appeared as $r^2 = .561$ which was significant at alpha level .01. Hence the hypothesis H2: There is significant relationship between main-variables of stress (Physical stress, social stress and psychological stress) and sports performance.

H2. There is a significant effect of the main variables of stress (Physical stress, social stress and psychological stress) on the sports performance of the students at the college level.

Multiple regression showing the effect of main-variables models of stress and Sports performance.

Table 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777 ^a	.604	.603	.33272
2	.905 ^b	.820	.819	.22482
3	1.000 ^c	1.000	1.000	.00000

a. Predictors: (Constant), Physical Stress

b. Predictors: (Constant), Physical Stress, Social Stress

c. Predictors: (Constant), Physical Stress, Social Stress, Psychological Stress

The above table shows that model 1 (physical stress) has a greater effect on the sports performance of the students at the college level which appears as $r^2 = .604$ (60%). Model 2 (physical stress and social stress) had an 82%

effect on the sports performance of the students at the college level. Model 3 (physical stress, social stress and psychological stress) has a 100% effect on the sports performance of the students at the college level.

Table 2

Coefficients'

Model					t	Sig.
		B	SE B	β		
1	(Constant)	2.144	.060		35.983	.000
	Physical Stress	.400	.017	.777	23.438	.000
2	(Constant)	.896	.072		12.377	.000

Model		B	SE B	β	t	Sig.
	Physical Stress	.332	.012	.645	27.690	.000
	Social Stress	.422	.020	.483	20.723	.000
	(Constant)	5.186E-015	.000		.000	1.000
3	Physical Stress	.333	.000	.648	443865183.213	.000
	Social Stress	.333	.000	.382	254913983.908	.000
	Psychological Stress	.333	.000	.436	302411018.867	.000

a. Dependent Variable: Sports Performance

The above table indicates that one unit increase in model 1 (Physical stress) will cause of .400 unit increase in sports performance of the students at the college level. The data also indicates that if one unit increases in model 2 (Physical stress and social stress) will cause of .754 unit increase in the sports performance of the students. Table 4.7.2 also indicates that if one unit increases in model 3 (Physical stress, social stress and psychological stress) will cause of .999 unit increase in the sports performance of the students at the college level. Hence hypothesis H4: There is a significant effect of main variables of stress (Physical stress, social stress and psychological stress) on the sports performance of the students at the college level is hereby accepted.

Findings

This study looked into the connections between collegiate athletes' athletic performance and psychological, social, and physical stress. Both of the research hypotheses are supported by the findings.

Stress and Athletic Performance: A Correlation (H1).

There is a strong positive association ($r = .777$, $p < .01$) between physical stress and athletic performance. This suggests that increased physical stress levels are linked to improved sports performance.

There is a strong positive association ($r = .659$, $p < .01$) between social stress and athletic performance. This suggests that improved sports

performance is correlated with increased levels of social stress.

There is a strong positive association ($r = .561$, $p < .01$) between psychological stress and physical performance. This suggests that increased psychological stress levels are linked to improved physical performance.

Impact of Stress on Athletic Performance (H2)

Physical stress accounted for 60.4% of the variance in athletic performance, according to multiple regression analysis (Model 1).

82.0% of the variance in athletic performance was explained when social stress was included in the model (Model 2).

Lastly, the model (Model 3) fully described the variance in athletic performance when psychological stress was included.

These results imply that stress—physical, social, and psychological—has a major favorable impact on college athletes' athletic performance. It is crucial to remember that Model 3's large explained variance could just be the product of chance, and more investigation is required to corroborate these findings.

Conclusion

This study looked at the connections between male college players in Pakistan's Districts of Bhakkar and Mianwali and their physical, social, and psychological stress levels as well as their athletic performance. The results show a

substantial correlation between athletic performance and all three forms of stress.

The findings showed that psychological, social, and physical stress all positively correlated with athletic performance. Additionally, a significant amount of the variance in athletic performance was explained by these stress variables, according to multiple regression analysis.

It's crucial to recognize the study's limitations, though. The results might not apply to other groups because they focus solely on male athletes in a particular area of Pakistan. Additionally, there is a chance of bias when self-reported data is used.

Considering these drawbacks, the research advances our knowledge of the complex connection between stress and sports performance. Future studies should examine the fundamental processes via which stress affects athletic performance and look into these connections using a wider range of sample sizes. Coaches and athletes can create stress management and performance-enhancing methods by learning more about these variables.

Recommendations

This study looked into the connections between male Pakistani college athletes' athletic performance and stress. Even though the results offer some preliminary understanding, more investigation is required to fully understand these interactions. Here are some suggestions for potential lines of inquiry for future studies:

Examine the underlying mechanisms: Upcoming research may examine the psychological and biological processes that stress uses to affect sports performance.

Examining the function of stress hormones, thought processes, and coping techniques may be part of this.

Replication with varied samples: The present investigation was restricted to male athletes in a particular area of Pakistan. Future studies should confirm these results with a wider range of samples—such as female athletes and athletes from various nations and cultures.

Longitudinal studies: The cross-sectional approach used in this study makes it more difficult to determine causal linkages. Studies that follow athletes over time could look at how variations in stress levels affect their ability to perform.

In addition, given the study's limitations, the following are some things athletes and coaches should think about:

Stress management tactics: Although the results of this study can not conclusively state that stress management tactics will enhance performance, evidence points to their potential to enhance general well-being. Athletes and coaches should investigate strategies including social support network creation, time management, and relaxation training.

Individualized approach: Athletes may have different relationships between stress and performance. Together, coaches and athletes should create individualized plans for stress reduction and performance enhancement. This could entail keeping an eye on stress levels, figuring out what stresses you out, and putting customized coping mechanisms into practice.

Further research may clarify the causal connection between stress and sports performance and pinpoint the best ways for athletes to cope with stress. However, coaches and athletes can start creating plans to maximize performance and well-being by realizing the possible advantages of stress management and adopting a customized approach.

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