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Impact of Arousal, Aggression and Mood States on Sports Performance among Novice and Elite Athletes

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Abstract

This research discusses about features of psychological influence on the performance of novice and elite athletes: arousal, aggression, and mood states. A comparative, quantitative and a cross-sectional research design was used whereby a sample of 100 athletes representing different forms of sports was used. Psychological variables were measured using standardized instruments and analyzed using descriptive statistics, independent samples t-tests and regression. The result showed considerable differences in arousal and aggression levels between novice and elite athletes, with the latter having higher levels of both variables. None of the major differences in mood states were however observed. Regression shows that only arousal has been a significant predictor of performance with a negative relationship established as well as that the aggression and mood states were not significant predictors of performance outcomes. The outcomes support the role of psychological regulation especially arousal control in attaining optimal performance in sport. The research adds to the body of current literature in sports psychology as it presents a set of empirical data on a half-soccer setting. The findings highlight the importance of having psychological training strategies included in the athletic development programs in order to promote improved performance and emotional control in the athletes.

Keywords: Arousal, Aggression, Mood States, Athletic Performance, Sports Psychology

Introduction

Psychological aspects are critical determinants of athletic performance. Although technical training and physical skills are critical, the psychological condition of an athlete usually affects the effectiveness with which the skills will be performed in the field. According to sports psychology studies, such emotional and cognitive states as confidence, motivation, arousal, and emotional stability may influence the outcomes of performance considerably (Hosseiny & Vaezmousavi, 2022). Sportsmen and women often face the situation which includes pressure, ambiguity, and severe competition, and therefore psychological control has become a crucial factor in effective performance. Among others, arousal, aggression, and mood state are several psychological

variables that are correlated with sports performance because of a strong correlation with behavioral patterns during a sports competition (Pang et al., 2020). Proper amounts of psychological activation can improve focus and drive, but the extreme power of emotion can lead to adverse effects of decision-making and coordination (Lopes, 2024). Emotional stability enables an athlete to be able to cope with competitive stress, whereas ineffective emotional control can lead to inconsistency in performance.

Athletes within a competitive sport setting are expected to be at optimal mental health at all times with the constraints of physical fatigue, crowd pressure and competition pressure. Thus, it is significant that athletes and coaches know the psychological processes that can affect performance (Wang et al., 2025). The role of psychological preparedness as a determinant of performance success is also studied in the field of research of sports psychology with increasing emphasis. The psychological aspects of arousal, aggression, and mood states can be instructive in terms of the manner in which athletes can control their psychological state when facing competition (Ruoxi et al., 2023). The psychology of the same can go into better psychological training sessions that help an athlete keep on top of peak performance.

Arousal is a state of physiological and psychological stimulation which is felt by an individual in performance situations. Arousal in the case of sport is strongly related to alertness, awareness and being emotionally intense. The moderate amounts of arousal are typically said to have a beneficial effect (as they promote concentration, reaction time, and motivation, Kerr, 2021). Nevertheless, a high or low arousal level can also affect performance because it scatters the attention and creates anxiety. Past studies indicate that the optimum levels of arousal enable players to execute their activities more efficiently and precisely. The arousal levels can be regulated effectively, providing an athlete with a better opportunity to focus and handle pressure, as well as perform complex motor tasks (Weinberg, 2021). Athletes with extremely high arousal rates might also be affected by performance anxiety, which might detrimentally impact coordination and decision-making in the field.

Sports psychology research shows that in many cases; experienced sportspeople are more emotionally regulated than their less experienced counterparts. Elite performers have a tendency to devise a mechanism of managing their psychological stimulation and their ability to remain calm in stressful conditions (Hosseiny & Vaezemousavi, 2022). Such strategies can involve being prepared mentally, practicing breathing, as well as mental control. The association between arousal and performance is vital in the attempt to design psychological interventions capable of allowing athletes to stay in the optimal performance states. Further studies of the role played by various levels of experience in regulating arousal can help shed more light on the psychological maturity of athletes.

Aggression is also another very common psychological aspect in the setup of competitive sports. It is usually associated with behaviors that seek to establish dominance, provoked or responding to competitions (Kostorz & Sas-Nowosielski, 2021). There is good and bad aggression in sports depending on how an athlete expresses it and manages it. Positive impact on athletic performance can be a result of constructive aggressive which is often described as regulated or instrumental aggression. It can enhance competitiveness, determination, and persistence so that athletes can remain focused and motivated in sensitive scenarios (Bazli et al., 2021). Appropriate behavior as a tool of aggression can be utilized as a psychological asset that fosters aggressive behaviors and intensity of competition.

Aggressive behavior that is not controlled or hostile can have negative implications on performance and sportsmanship. High levels of aggressiveness can result in impulsivity, breach of rules and punishment, which can negatively affect individual and team performance. Also,

unchecked violent behavior can cause concentration and emotional imbalance in competition. It is also said that athletes vary in their capacity to suppress aggressive impulses based on their experience, training, and emotional maturity (Predoiu et al., 2022). Elite athletes would tend to be in a better position to direct aggressive energy to productive performance behaviors, but less experienced athletes may not be able to suppress aggressive response to competitions stress. So, the study of aggression in sports is relevant to the issues of how athletes cope with the level of emotion and preserve control over its behavior in a competition (Brooks, 2024).

Mood conditions are temporary emotional states, which affect the way a person thinks, acts, and how he or she psychologically operates. Mood states can influence motivation, concentration and energy, in athletic situations, thus influencing performance outcomes. Emotional stability, excitement, and confidence are usually linked to positive mood that translates into better performance on the field (Batalla-Gavalda et al., 2021). Athletes usually complain of mood variation due to training load, competitiveness stress, and performance demands. These emotional peaks and dumps can influence the mental abilities to focus, make decisions, solve competition problems. Thus, balanced moods are the key to the possibility to be a consistent participant of a competitive sport (Lakicevic et al., 2024).

Sports psychology studies show that top performers tend to evolve successful methods of controlling their emotions. Emotional control helps athletes to stay calm in stressful events and to be focused on performance objectives. Emotional conditions that undermine performance include negative moods like frustration, anxiety, or emotional exhaustion that can lessen motivation and its psychological distress (Ríos-Garit et al., 2024). The relationship between mood states and athletic behavior is also an important part of understanding how to build psychological training programs helpful in promoting emotional stability. The exploration of mood patterns among athletes of varying experience can be insightful in exploring the value of emotional regulation as a factor in a competitive performance.

Athletes also differ greatly in the way they psychologically react to the situation in which they have to compete depending on their experience and training. The beginning players tend to lack prior exposure to competitions and may not be psychologically adapted to performance pressure (Silva et al., 2022). As a result, they become more anxious, more emotionally unstable and incapable of remaining in good psychological conditions in the competitive situations. Elite athletes are stronger psychologically due to elite training as well as exposure to competition and exposure to high pressure environments. Over time, mental strategies are developed, which help experienced athletes to control emotions, stay focused, and ensure physiological reactions in checking conditions (Ross et al., 2020). These mental skills facilitate mental toughness of professional athletes to be composed and of course play despite the excessive pressure during the game.

The research suggests that there is not only a difference in physical abilities between novice and elite athletes but also in governing the psyche. More likely to show better emotional control, more firmly established self-confidence, and handling mechanisms in the case of stress are elite performers (Ervilha et al., 2020). These psychological advantages may be one of the factors which make one succeed in performance in competitive sports. This is an important set of differences in addressing psychological factors that stimulate the formation of athletes (Nobari et al., 2020). The comparison between novice and elite athletes can provide hint regarding the influence of experience on the emotional control and the formation of performance behavior in the sports setting.

Theoretical models explaining how psychological states relate to athletic performance tend to identify the effect of emotional and physiological engagement on behavior. One of the most

renowned possible models of sports psychology is the Inverted-U Hypothesis according to which performance rises with arousal, yet, at a certain point, excessive arousal may lead to a decline in performance (Zhang et al., 2023). This model identifies an intermediate zone of psychological activeness as the determinant of optimum performance. Another theory that fits into this perspective with the distinction of cognitive and somatic aspects of anxiety is the Multidimensional Anxiety Theory. The theory states that cognitive anxiety can negatively affect performance and that physiological arousal can positively or negatively affect performance depending on the intensity of worry and negative expectations (Putwain et al., 2020). These theoretical perspectives all provide a conceptual framework of how psychological factors, such as arousal, aggression, and mood, contribute to the development of athletic behavior. It is possible to learn about these models and explain why a more emotionally regulated athlete is likely to maintain the conditions of optimal performance throughout a competition.

The fact that there has been a lot of research done on psychological factors in sports, little research has been conducted to determine how a combination of arousal, aggression, and mood state influence athletes in sports that are still developing. Most of the literature available concentrates on western based athletes where sports psychology resources and training programs are more accessible. As a result, empirical data on the impact of psychological factors on participants in emerging sports settings are still lacking. The research on sports psychology is rare in Pakistan especially when it comes to comparative study of athletes having various levels of experience. The knowledge of how the state of mind can affect novice and elite athletes in the local sports environment can be informative towards enhancing training habits. Thus, the current research aims to fill this gap by comparing the impact of arousal, aggression, and mood states in athletes with different amounts of competitive experience.

The following objectives are:

- To analyze the effects of arousal on the performance of novice and elite players.
- To investigate the role of aggression in influencing the performance of novice and elite players.
- To assess how mood changes affect motivation and focus among novice and elite players.
- To compare the combined psychological impacts of arousal, aggression, and mood changes across novice and elite players.

Method

The current research used a quantitative, comparative, and cross-sectional research design in investigating the psychological determinants of performance of athletes. Quantitative approaches have been deemed suitable as they can measure psychological variables systematically and thus compare them statistically across various groups of respondents (Hassain et al., 2024). The comparative feature of the design allowed studying differences between novice and elite athletes regarding their arousal, aggression, and mood states levels (Yang et al., 2024). It was cross-sectional because data were not gathered over a long period of time but at one point. The design established an effective approach to examine psychological traits in athletes having a different competitive experience (Asghar et al., 2020).

The study participants were sportsmen recruited in sports academies, university and local sports clubs. The study was conducted on a total of 100 athletes. Two groups were selected as discussed in terms of their competitive experience level, novice athletes and elite athletes. The groups were 50 strong each. Novices were taken to refer to athletes who were relatively a people that had little competitive experience and had competed mostly at school or amateur levels (Al Ahmed and

Hassan, 2023). Elite athletes were athletes who had participated in high competitions, such as national contests or professional leagues, and who had a considerable experience in training (Tadesse et al., 2020). Age of the subjects was between 18 and 30 years; this is the age group most engaged in competitive sporting activities. The sample consisted of both males and females to allow wider representation and the diversity of participants in the activities of competitive sports (Thompson et al., 2022). The participation in the study was voluntary, and each of them complied with the inclusion criteria associated with the level of sporting experience.

Standardized psychological questionnaires were used to collect data on the study to measure the key variables of interest. Items based on a modified version of Competitive State Anxiety Inventory-2 (CSAI-2) as a reliable tool in the field of sports psychology were used to measure arousal levels, which assess both cognitive and somatic levels of psychological activation in competition (Singh, 2025). The measure of aggression was a Buss-Perry Aggression Questionnaire (BPAQ), which measures behavioral inclination towards aggression in the form of physical violence, verbal violence, anger, and hostility (Christopher et al., 2024). Mood items were assessed based on items modified after Profile of Mood States (POMS), which is an established psychological instrument to assess emotional states of tension, fatigue, vigor, and emotional stability (Pereira et al., 2023). The instruments have been popular tools in the study of psychology and have proven to have reasonable reliability and validity levels with various populations. The reliability analysis done in relation to the current study revealed satisfactory levels of internal consistency of the scales with the Cronbach alpha coefficients validating above what is deemed as acceptable and agreeable measurement tools of gauging the psychological constructs studied in the experiment.

Data collection has been done thoroughly and systematically to guarantee accuracy and consistency of responses. The first permission was to seek participation in the study with a team of relevant sports institutions and training centers by asking athletes (Dahal, 2024). The administration of the questionnaires was accompanied with the knowledge of the purpose and objectives of the research by the participants. The researcher had to go to athletes during their trainings and competition activities and ask them to take part on a voluntary basis. All participants were provided with a short description of what the study entailed and what kind of information was to be gathered. All the participants gave informed consent before filling out the questionnaire (Fernandez Lynch, 2020). The participants were guaranteed that their responses would be kept confidential and would be utilized only in the academic research business. They also received information that they could take part in the research on a voluntary basis and could drop out of the research at any point without repercussions (Kao et al., 2023). The questionnaires were filled in separately, and the interviewees were advised to be truthful according to their experiences related to sport events.

The responses were computed and tabulated in the Statistical Package of Social Sciences (SPSS) after the data collecting exercise was finished. Initially, descriptive statistical methods were used to describe the demographic features of the participants and to analyze the distribution of the study variables (Habes et al., 2021). Statistics including means and standard deviations were also computed to show the general differences in arousal, aggression, and mood states of the participants. Independent sample t-tests were used in order to compare novice and elite athletes. Such statistical test enabled the researcher to find out the existence of significant differences between the two groups regarding the psychological variables being studied (Singh, 2022). Along with a comparison-of-groups analysis, the regression analysis was conducted to test the predictive correlations of arousal, aggression, mood states, and athletic performance. Regression analysis was used to determine the degree to which these psychological factors played a role in influencing

changes in the performance levels of the athletes. The given statistical analyses gave empirical confirmation of the relations between the variables of the study and made it possible to test the research hypotheses thoroughly and objectively.

Results

Demographic Characteristics

Table 1: Demographic Profile of Study Participants

Variable	Category	n	%
Gender	Male	77	77
	Female	23	23
Age	15–18	6	6
	19–21	3	3
	22–25	45	45
	>25	46	46
Sport	Football	24	24
	...	...	...
Experience	Elite	50	50
	Novice	50	50

Table 1 shows the demographic information of the study participants. Gender disparities, as it is usually the case with participation in sports, show a disproportion of higher representation of male athletes (77%), and lower representation of female athletes (23%). The largest group of participants was between 2225 years (45) and over 25 years (46), indicating representation of the optimality age groups. The most represented sport was football. Also, there was equal representation of elite or novice athletes in the sample, which allowed a balanced group comparison in follow-up analysis.

Descriptive Statistics

Table 2: Descriptive Statistics of Study Variables

Variable	Mean	SD
Arousal	2.98	1.20
Aggression	2.60	0.90
Mood States	2.50	0.80
Performance	4.10	0.70

Table 2 gives the descriptive statistics of the study variables. The results showed moderate arousal,

aggression, and mood conditions of athletes, which implies that these are balanced psychological mechanisms in competition. The performance scores were quite high indicating a high level of self-reported effectiveness. The findings indicate that athletes ensure good performance even with moderate psychological changes.

Group Differences Between Novice and Elite Athletes

Table 3: Group Differences in Key Variables

Variable	t	df	p	Mean Difference	95% CI
Arousal	-7.80	98	< .001	-0.87	[-1.09, -0.65]
Aggression	3.86	98	< .001	0.36	[0.17, 0.55]
Mood	-1.20	98	.231	-0.10	[-0.27, 0.06]

Table 3 is a comparison of the psychological variables between novice and elite athletes. The findings show that the arousal level is statistically significantly different, t (98) = -7.80, p <.001 with elite athletes reporting a higher arousal level as compared to novices. The level of aggressions also significantly dissimilar, t (98) = 3.86, p < .001 indicating that elite athletes are more competitive aggressions. There was no significant difference in both mood states in the two population groups, t (98) = -1.20, p = .231, because the confidence interval includes 0. These results indicate the level of experience makes some difference in arousal and aggression, but the responses related to moods are relatively similar between a novice and an elite athlete.

Regression Analysis

Table 4: Regression Analysis Predicting Athletic Performance

Predictor	B	β	t	p
Arousal	-0.268	-0.339	-2.78	.007
Aggression	-0.185	-0.167	-1.19	.236
Mood	-0.114	-0.088	-0.76	.448

Table 4 shows the outcomes of regression analysis of the predictive value of psychological variables on the athletic performance. The general model was statistically significant meaning that the predictors together have a contribution to the performance outcomes. Arousal was one of the variables found to be a substantial negative predictor (= -0.339, p =0.007), implying that the maximum level of arousal is related to lower levels of performance. Significant predictors were not aggression (p =.236) and mood (p =.448). These results indicate that psychological factors collectively make a difference in performance, but arousal is the most important single factor.

Discussion

The study in question was to investigate the role of arousal, aggression, and mood states in performance of athletes and the comparison of such psychological variables in novice and elite athletes. The results offer valuable information about the operation of psychological variables in competitive sports settings and partially confirm the set goals. The findings showed that arousal affects athletic performance significantly. As Table 4 demonstrated, arousal became one of the significant negative predictors of performance, which can indicate that greater arousal can lower the performance effectiveness. The obtained result is consistent with the Inverted-U Hypothesis, which holds that overarousal may lead to worse performance (Zhang et al., 2023; Gu et al., 2022). The research has cited in the past that an increase in physiological activation can cause anxiety and impaired focus, which adversely impacts coordination when it comes to motor ability and decision-making (Weinberg, 2021). Thus, the initial goal, which is investigating the impact of arousal on performance is justified, yet the nature of the impact is subversive instead of positive (Sasmitha, 2025).

Second, the research examined the psychological aspect of aggression. The findings (Table 3) indicated the elite athletes had a much higher degree of aggression than novice athletes. But according to the regression analysis (Table 4), aggression did not actually predict performance significantly (Lu et al., 2022). This indicates that aggression may vary with level of experience, but it does not solely predict performance. This observation aligns with the past studies that demonstrate that controlled aggression can lead to competitiveness but not necessarily performance success (Kostorz & Sas-Nowosielski, 2021). Thus, the second goal is partly verified, as aggression is experience-dependent but does not have a substantial impact on performance. Thirdly, mood states have been studied to determine how they impact on athletic performance. Results showed that there was no difference between the mood states of novice and elite athletes (Table 3), mood was not a significant predictor of performance (Table 4). These findings oppose the literature that argues that fluctuations in mood can have a powerful impact on motivation and attention (Batalla-Gavalda et al., 2021; Broodryk et al., 2021). But there is also the possibility that in this case athletes had developed simple mechanisms of emotional coping, resulting in comparatively steady mood reactions groupwide. As such, the third objective cannot be supported, since there was no significant difference in mood between groups, nor was it relevant to performance.

Psychological variables together were measured in their combined effect. The regression model revealed that the arousal, aggression and mood did not affect performance to a large degree as explained variance was low (R 2 =.088). It means that psychological factors are also pertinent, but other aspects of performance, including physical fitness, level of skills, and training, also serve as influential elements (Lochbaum et al., 2021). In this way, the fourth goal is justified, since the joint model was statistically significant. The findings demonstrate similarities as compared to what is already available in the literature and differences. Hosseiny and Vaezmousavi (2022), the study supports the value of psychological regulation in sport performance. But in comparison to some of the earlier research (Lakicevic et al., 2024), mood was not found to be an important variable, and it could be indicative of the context or culture of the athletes. The research indicates that psychology aspects, especially arousal are vital when it comes to performance in sports. It also highlights the significance of psychological training interventions towards enhancing emotional control in athletes, mainly in emerging sports scenarios.

Practical Implications

The research results can have influential implications to coaches, trainers, and sports

psychologists. As arousal was found to be a major predictor of performance, coaches should include psychological strategies that focus on managing the level of arousal in athletes. The use of relaxation training, mental rehearsal, and breathing exercises can also allow athletes to stay at an optimal psychological activation during competition. Also, designed psychological training sessions are necessary in routine training to improve emotional regulation and attention. Even though aggression and mood were not important predictors, the differences in the levels of experience indicate that behavioral regulation and emotional awareness training are likely to benefit athletes. Learning such skills may assist athletes with better coping with the pressure of competitions and stable performance.

Limitations

There are various limitations to this study that must be put into consideration when understanding the findings. First, it was a rather small sample of 100 people, which can influence the extrapolation of results. Second, self-report questionnaires could result in response bias due to the unreliability of the participants towards giving pure accurate and objective responses. Third, it participates in the research of athletes in a local environment, thus the findings may not be relevant to bigger populations. Greater and more heterogeneous samples should be investigated in further studies.

Conclusion

This research discussed the effects of arousal, aggression, and mood states on both novice and elite athletic performance. The results showed that arousal is a key predictor of performance whereas the effect of aggression and mood is not independent. Arousal and aggression were found to differ between novice and elite athletes, and this illustrates how experience would contribute to the psychological control of such outcomes. The contribution of the study to the literature on sports psychology is that it does give empirical evidence in the developing sports environment especially in Pakistan. The results highlight the significance of psychological training and emotional control in promoting the athletic performance and helping athletes to perform at a competitive level.

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