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Dr. Charles A Joseph
Associate Professor, Department
of Physical Education, C M S
College, Kottayam, Kerala, India

Dr. Kunjikannan R
Professor & Head, Department
of Physical Education, Govt
College Mokeri, Kozhikode,
Kerala, India

The study of emotional resilience and adequate expression and control of emotions (AEC) across individual and team sports disciplines

Charles A Joseph and Kunjikannan R

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Abstract

The present study examines the sub-component of emotional competence, Adequate Expression and Control of Emotions (AEC), among athletes from four major sports disciplines: Track & Field, Volleyball, Football, and Basketball. Emotional competence, which includes awareness, regulation, and adaptive coping strategies, is a key factor influencing athletic performance, resilience, and interpersonal functioning. Beyond physical fitness and technical skills, the ability to recognize, express, and regulate emotions enables athletes to maintain focus, manage pressure, and perform consistently in competitive environments. A descriptive-comparative research design was adopted, involving 960 male athletes aged 18–25 years from collegiate programs and professional clubs in Kerala, India, all with a minimum of three years of competitive experience. Data were collected using the Emotional Competence Scale (Sharma & Bharadwaj, 1995), focusing on the AEC dimension. Responses were scored via a standardized procedure, converting Likert scale items to Z-scores and then to T-scores. Descriptive statistics, one-way ANOVA, and post-hoc Tukey HSD tests were used to analyse differences across sports disciplines. Results indicated significant differences in AEC across sports ($F = 13.11, p < 0.001$). Football athletes scored highest ($M = 18.64, SD = 3.62$), followed by Basketball ($M = 18.33, SD = 3.65$) and Track & Field ($M = 18.02, SD = 3.72$), while Volleyball athletes scored the lowest ($M = 17.05, SD = 3.80$). Post-hoc analysis revealed that Volleyball athletes' AEC was significantly lower compared to Football, Basketball, and Track & Field athletes, whereas other group differences were not significant. These findings highlight that sport type—individual or team-based—affects emotional coping, with team dynamics and competitive demands shaping regulation skills. The study emphasizes the need for sport-specific psychological interventions, including emotion regulation training, stress management, and resilience-building programs, to enhance performance and overall well-being. Cultivating AEC is essential not only for competitive success but also for sustaining mental health, adaptive coping, and holistic development in athletes.

Keywords: Emotional competence, adequate expression and control of emotions (AEC), emotional resilience, sports psychology, team sports, individual sports

1. Introduction

Sports have been a fundamental aspect of human life, serving not only as a platform for physical development but also as a medium for psychological, emotional, and social growth. Participation in sports improves cardiovascular health, muscular strength, flexibility, endurance, and overall physical fitness, thereby reducing susceptibility to lifestyle-related illnesses such as obesity, diabetes, and hypertension. Beyond physical attributes and technical skills, athletic success is increasingly recognized as deeply dependent on psychological competencies, particularly the ability to perceive, regulate, and cope with emotions. Emotions act as complex psychological and physiological responses to internal and external stimuli, influencing cognition, behaviour, and decision-making. Positive emotions such as joy, satisfaction, and pride energize athletes, enhance concentration, and sustain motivation during challenging moments, whereas negative emotions such as anxiety, fear, anger, and frustration can disrupt focus, impair decision-making, and undermine overall performance. The dynamic interplay of emotions not only affects individual outcomes but also interpersonal interactions in team settings, emphasizing the need for emotional awareness and management in competitive environments. A critical dimension of emotional competence is Adequate Expression and Control of Emotions (AEC).

Corresponding Author:
Dr. Charles A Joseph
Associate Professor, Department
of Physical Education, C M S
College, Kottayam, Kerala, India

AEC refers to an individual's ability to recognize and understand emotions in themselves, express them appropriately in context, and regulate these emotions effectively to prevent detrimental effects on performance or behaviour. Athletes who master AEC can fully experience emotions without being overwhelmed, express feelings in socially and contextually appropriate ways, and maintain composure under high-pressure conditions. For instance, a sprinter experiencing pre-competition anxiety must channel that physiological arousal into focused energy rather than tension that hampers performance. Similarly, a football player confronting frustration due to a teammate's error must regain emotional control to remain effective in subsequent plays. Emotional competence, particularly AEC, acts as a buffer against problem emotions, fostering resilience, perseverance, and adaptive coping strategies critical for sustaining high performance. The role of emotions in sports extends beyond individual performance. In team-based sports such as Volleyball, Football, and Basketball, collective emotional regulation is essential. Athletes must not only manage their own emotional states but also respond appropriately to the emotions of teammates, balancing motivation, encouragement, and conflict resolution. Team success depends heavily on maintaining cohesion, focus, and communication under pressure, making AEC a critical factor in shared performance outcomes. In contrast, individual sports such as Track & Field emphasize personal resilience, where athletes rely primarily on internal psychological resources to manage stress, maintain concentration, and recover from setbacks without immediate social support. The divergent emotional demands of individual versus team sports suggest that AEC may develop differently depending on the sporting context, highlighting the importance of investigating sport-specific variations in emotional competence. Emotions are closely linked to physiological arousal, cognitive appraisal, and behavioural responses in competitive settings. Negative emotions such as anger and anxiety trigger heightened sympathetic nervous system activity, increasing heart rate, muscular tension, and respiration, which can impair fine motor control, coordination, and endurance. Conversely, positive emotions such as excitement and pride facilitate attentional focus, motivation, and energy mobilization, creating optimal conditions for peak performance. The ability to regulate these emotional responses is therefore a determinant of consistency, longevity, and mental well-being in sports. Research in sports psychology has emphasized that effective AEC is cultivated through experience, training, and cognitive-emotional strategies. Techniques such as mindfulness, visualization, goal-setting, and breathing exercises help athletes monitor and modulate emotions, enhancing performance under stress. Team sports present unique challenges, as athletes must navigate emotional contagion, competitive pressure, and interpersonal conflict, while individual sports demand self-reliance and resilience under solitary pressure. Understanding how athletes from different disciplines manage these emotional dynamics can inform targeted interventions, supporting both performance optimization and mental health. Given these considerations, this study examines differences in Adequate Expression and Control of Emotions (AEC) among athletes from Track & Field, Volleyball, Football, and Basketball. By exploring how emotional competence manifests across diverse sports, the research provides insights for developing tailored psychological interventions, including emotion regulation strategies, stress management techniques, and resilience-building programs. Understanding these dynamics will not only enhance athletic performance but also contribute to the

holistic development of athletes, equipping them with the cognitive-emotional tools necessary to thrive under competitive pressures while maintaining mental health, interpersonal effectiveness, and overall well-being.

2. Importance of the Study

The ability to adequately express and control emotions directly impacts athletes' focus, consistency, and stress management in competitive settings. Understanding variations in AEC across sports can help coaches, trainers, and sports psychologists design tailored mental conditioning programs. These interventions can enhance performance, improve team cohesion, and safeguard athletes' mental well-being.

3. Objectives of the Study

1. To assess the Adequate Expression and Control of Emotions (AEC) among athletes from Track & Field, Volleyball, Football, and Basketball.
2. To compare AEC across individual and team sports.
3. To determine statistically significant differences in AEC scores using descriptive statistics and ANOVA.
4. To conduct post-hoc comparisons to identify specific inter-sport differences.
5. To provide practical recommendations for integrating emotional competence training in sports.

4. Methodology

The present study employed a descriptive-comparative research design to assess and compare the Adequate Expression and Control of Emotions (AEC) among athletes from four major sports disciplines: Track & Field, Volleyball, Football, and Basketball. A total of 960 male athletes aged 18–25 years participated in the study, including 260 from Track & Field, 225 from Volleyball, 265 from Football, and 210 from Basketball. Participants were recruited from collegiate programs and professional sports clubs across Kerala, with inclusion criteria requiring a minimum of three years of active competitive experience. The study utilized the Emotional Competence Scale developed by Sharma and Bharadwaj (1995), with a focus on the AEC dimension. Responses were scored using a standardized procedure, where items on a five-point Likert scale were converted to Z-scores and subsequently transformed into T-scores for analysis. Data collection was conducted personally by the investigator during training sessions, ensuring participants' understanding of the study objectives, confidentiality of responses, and accurate completion of the questionnaires. This methodology allowed for a systematic and reliable assessment of athletes' ability to express and control emotions across different sports, enabling meaningful comparison and statistical analysis.

5. Statistical Techniques

Descriptive statistics (Mean, SD), One-way ANOVA, and Tukey HSD post-hoc tests were used to analyse differences among groups.

6. Data Analysis and Results

6.1 Descriptive Statistics

Table 1: Descriptive Statistics of AEC

Sport	N	Mean (M)	SD
Track & Field	260	18.02	3.72
Volleyball	225	17.05	3.80
Football	265	18.64	3.62
Basketball	210	18.33	3.65

Football athletes demonstrated the highest mean AEC, while Volleyball athletes scored the lowest.

6.2 ANOVA Results

Table 2: ANOVA for AEC

Source	SS	df	MS	F	p-value
Between Groups	490.73	3	163.58	13.11	0.000*
Within Groups	11929.47	956	12.48		
Total	12420.20	959			

* Significant at 0.05 level

The results indicate significant differences in AEC among the sports groups. The one-way ANOVA was conducted to examine whether there are significant differences in Adequate Expression and Control of Emotions (AEC) among athletes from Track & Field, Volleyball, Football, and Basketball. The analysis revealed a between-groups sum of squares of 490.73 and a within-groups sum of squares of 11,929.47, resulting in mean squares of 163.58 and 12.48, respectively. The calculated F-value was 13.11 with a p-value of 0.000, indicating statistical significance at the 0.05 level. These results demonstrate that the differences in AEC among the sports groups are unlikely to have occurred by chance, providing strong evidence that the type of sport significantly influences an athlete's ability to adequately express and control emotions. Examination of the mean scores shows that Football athletes exhibited the highest AEC ($M = 18.64$), reflecting stronger emotional regulation and expressive skills, while Volleyball athletes scored the lowest ($M = 17.05$), suggesting comparatively weaker emotional competence. Track & Field ($M = 18.02$) and Basketball ($M = 18.33$) athletes scored moderately, indicating that both individual and team sport contexts contribute differently to emotional coping abilities. These findings highlight the role of sport-specific demands, team dynamics, and competitive pressure in shaping athletes' emotional resilience and suggest that tailored psychological interventions may be necessary to enhance AEC across different sports disciplines.

6.3 Post-Hoc Tukey HSD Test

Table 3: Post-Hoc Comparisons of AEC

Comparison	Mean Difference	p-value	Interpretation
Football vs Volleyball	+1.59	0.000*	Significant
Basketball vs Volleyball	+1.28	0.002*	Significant
Track & Field vs Volleyball	+0.97	0.019*	Significant
Football vs Track & Field	+0.62	0.087	Not significant
Football vs Basketball	+0.31	0.412	Not significant
Basketball vs Track & Field	+0.35	0.368	Not significant

Volleyball athletes scored significantly lower compared to Football, Basketball, and Track & Field athletes, while differences among the other groups were not significant. The Post-Hoc Tukey HSD test was conducted to identify which specific sports groups differed significantly in Adequate Expression and Control of Emotions (AEC). The results revealed that Volleyball athletes scored significantly lower in AEC compared to Football (mean difference = +1.59, $p = 0.000$), Basketball (+1.28, $p = 0.002$), and Track & Field (+0.97, $p = 0.019$) athletes. In contrast, differences among Football, Basketball, and Track & Field athletes were not statistically significant, indicating that these groups exhibited comparable levels of emotional competence. This analysis highlights that the type of sport, particularly the challenges associated with Volleyball, may influence athletes' ability to adequately express and control emotions, while other sports

with higher individual or collective coping demands show similar AEC levels.

7. Discussion

The findings confirm that the type of sport influences athletes' ability to adequately express and control emotions. Football athletes demonstrated the strongest AEC, possibly due to the sport's balance of aggression and strategy, which requires emotional discipline. Basketball players also scored high, reflecting the fast-paced, dynamic environment that demands continuous adjustment of emotional states. Track & Field athletes showed moderate AEC, likely a result of individual resilience without group pressures. Volleyball athletes scored significantly lower, suggesting that the sport's rally-based structure and high dependency on team synchronization may increase emotional strain and reduce coping efficiency. These results reinforce the need for sport-specific psychological interventions. Volleyball athletes, in particular, would benefit from resilience-building exercises, stress management workshops, and group cohesion activities. Meanwhile, reinforcing emotional strengths in Football and Basketball can sustain competitive advantages.

8. Conclusion

This study highlights the significant role of sport type in shaping emotional coping strategies among athletes. Football and Basketball athletes demonstrated stronger AEC, whereas Volleyball players exhibited weaker emotional control. Tailored psychological interventions are necessary to address these differences, ensuring athletes develop holistic competencies that support performance, resilience, and long-term well-being.

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