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Comparison of Sports Environments on Emotional Regulation in University Athletes: Perspectives from Indoor and Outdoor Sports Environments

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I. INTRODUCTION

This study explores emotional regulation among university athletes and compares differences between athletes who participate in indoor and outdoor sports. Emotional regulation plays an important role in sport performance, as athletes must manage their emotions effectively during training and competition [1][2]. Two main emotional regulation strategies are commonly discussed: cognitive reappraisal, which involves changing how one thinks about a situation, and expressive suppression, which involves controlling emotional expression. While previous studies have examined emotional regulation in athletes based on team and individual sports [3], limited research has compared emotional regulation strategies based on sport environment, particularly indoor versus outdoor sports. Understanding these differences may provide useful insight into how environmental contexts influence athletes' psychological responses. Therefore, this study aimed to examine the level of emotional regulation among university athletes and to compare emotional regulation between indoor and outdoor sport athletes.

II. METHODS

This study employed a quantitative, cross-sectional research design. Data were collected using an online questionnaire distributed to university athletes. The instrument used was the Emotion Regulation Questionnaire (ERQ), which measures two subscales: cognitive reappraisal and expressive suppression. A total of 249 university athletes participated in this study, consisting of athletes involved in indoor and outdoor sports. Because the data were not normally distributed, median and interquartile range (IQR) were used to report descriptive statistics. The Kolmogorov-Smirnov test was conducted to assess normality. Since the data were not normally distributed, non-parametric statistical analyses were applied to compare emotional regulation between indoor and outdoor sport athletes.

III. RESULTS AND DISCUSSION

A. Result for Emotional Regulation on Indoor Sports

TABLE I
DESCRIPTIVE OF EMOTIONAL REGULATION ON INDOOR SPORT

	Sport Environment	N	Median (IQR)
Cognitive Reappraisal	Indoor Sports	91	6.50 (0.66)
Expressive Suppression	Indoor Sports	91	6.25 (1.25)

The results show that indoor sport athletes reported a median score of 6.50 (IQR = 0.66) for cognitive reappraisal. This indicates that most indoor athletes frequently used cognitive reappraisal strategies to manage their emotions during sport participation. For expressive suppression, indoor athletes recorded a median score of 6.25 (IQR = 1.25). Although this score was slightly lower than cognitive reappraisal, it still reflected relatively frequent use of suppression strategies among indoor athletes.

B. Result for Emotional Regulation on Outdoor Sports

TABLE II
DESCRIPTIVE OF EMOTIONAL REGULATION ON OUTDOOR SPORT

	Sport Environments	N	Median (IQR)
Cognitive Reappraisal	Outdoor Sports	158	6.67 (0.83)
Expressive Suppression	Outdoor Sports	158	6.50 (1.00)

The findings indicate that athletes in outdoor sports reported a median cognitive reappraisal score of 6.67 (IQR = 0.83). This suggests that outdoor athletes also frequently applied cognitive reappraisal strategies, with a slightly higher central tendency than indoor athletes. For expressive suppression, outdoor athletes recorded a median score of 6.50 (IQR = 1.00), showing that suppression was also commonly used among outdoor athletes.

C. Result for Comparison Between Indoor and Outdoor Athletes

TABLE I
COMPARISON OF EMOTIONAL REGULATION BETWEEN INDOOR
AND OUTDOOR UNIVERSITY ATHLETES

	Sport Environments	N	U	p
Cognitive	Indoor Sport	91	6674	0.341
Reappraisal	Outdoor Sport	158		
Expressive	Indoor Sport	91	6049	0.035*
Suppression	Outdoor Sport	158		

Since the data were not normally distributed, the Mann–Whitney U test was conducted to examine differences between indoor and outdoor athletes. The results indicated no significant difference in cognitive reappraisal between indoor and outdoor sport athletes ($p > .05$). However, a significant group difference was found in expressive suppression ($p < .05$), with outdoor athletes scoring higher. This suggests that athletes participating in outdoor sports were more likely to inhibit outward emotional expression compared with those in indoor sports. This pattern may be attributed to greater environmental unpredictability, higher competitive intensity, and increased social evaluation in outdoor settings, which may require greater control over emotional displays [1][2]. Furthermore, the physically demanding and dynamic nature of many outdoor sports may increase the need for expressive suppression to maintain focus and performance [3]. These findings underscore the influence of the physical sport environment on specific emotion regulation strategies and highlight that expressive suppression may be contextually adaptive in response to situational demands.

IV. CONCLUSIONS

This study examined emotional regulation among university athletes and compared differences between indoor and outdoor sports. The findings showed that athletes generally reported high use of both cognitive reappraisal and expressive suppression strategies. No significant difference was found in cognitive reappraisal between indoor and outdoor athletes. However, a significant difference was observed in expressive suppression, with outdoor athletes reporting slightly higher levels. These results suggest that the sport environment may influence how athletes manage and control their emotions. Future research should explore other psychological and environmental factors that may affect emotional regulation and consider using more balanced samples across different sport types.

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REFERENCES

- [1] Lane, A. M., Beedie, C. J., Devonport, T. J., & Stanley, D. M. (2011). Instrumental emotion regulation in sport: relationships between beliefs about emotion and emotion regulation strategies used by athletes. *Scandinavian Journal of Medicine & Science in Sports*, 21(6), e445–e451. <https://doi.org/10.1111/j.1600-0838.2011.01364.x>
- [2] Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348–362.
- [3] Yadav, R. (2023). Comparison of cognitive reappraisal and expressive suppression in team and individual sport athletes. *International Journal of Sports Science & Coaching*, 18(2), 455–462.