



## Aggression Patterns in Female Athletes: A Comparative Study between Basketball and Volleyball Players

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### ABSTRACT

#### Background of the study

Aggression in sports can significantly impact athletic performance, with both positive and negative effects. While often viewed negatively, some sport psychologists suggest aggression can enhance performance. In team sports, aggression patterns may vary based on the nature of the game, potentially influencing player behaviour and interactions.

#### Purpose of the study

This study aimed to investigate and compare aggression patterns between female basketball and volleyball players, focusing on various dimensions of aggressive behavior.

#### Method

Thirty female athletes (15 basketball players, 15 volleyball players) aged 18-25 years, competing at least at the district level, were assessed using the Buss-Perry Aggression Questionnaire. The questionnaire measured four sub-scales: Physical Aggression, Verbal Aggression, Anger, and Hostility. Data were analyzed using descriptive statistics and independent t-tests.

#### Results

Basketball players exhibited significantly higher levels of physical aggression ( $p=0.008$ ), hostility ( $p=0.017$ ), and also overall aggression ( $p<0.05$ ) compared to volleyball players. Differences in verbal aggression and anger were not statistically significant, although basketball players showed slightly higher mean scores in these dimensions.

#### Conclusion

The study reveals distinct aggression patterns between female basketball and volleyball players, with basketball players demonstrating higher levels of physical aggression, hostility, and overall aggression. These findings highlight the importance of sport-specific factors in shaping aggressive behaviors and underscore the need for tailored psychological interventions in different sports contexts.

**Keywords:** Aggression, Female Athletes, Basketball, Volleyball, Anger, Hostility

### Introduction

In sport, aggression is a characteristic that can have many negative as well as positive effects on performance. Aggression is defined as, any type of behaviour intended toward the goal of harming or injuring another lived being who is motivated to avoid such treatment. Most people view aggression as a negative psychological characteristic; however, some sport psychologists agree that aggression can improve performance (Widmeyer & Birch, 1984). In sport, aggression has been defined into two categories: hostile aggression and instrumental aggression (Silva, 1983). Instrumental aggression is aimed

towards the achievement of a goal, whereas hostile aggression is aimed towards harming the opponent. Usually human aggression roots from the frustration that rises out of obstacles in the way of attainment of a goal (Praveen, 2015).

Aggressive behaviour can be problematic in a diverse array of settings (e.g., mental health, correctional, and school), and aggressive behaviours can result in injuries to peers, family, and staff. Mindfulness is one of the treatment that may decrease aggression because it provides cognitive skills for managing aggressive behaviour without reliance on another individual. Aggression is a concept that is used to express situations or attitudes involving different reactions (Gergen & Gergen, 1986). Players indulge in aggressive acts of behaviour because they are appreciated, awarded or rewarded which sometimes accompanies athletic success, gaining status and others forms of social rewards (Bandura, 1973).

Roland and Stornes (2010) conducted a research to analyze to determine aggression among adolescent handball players. They found out that sports helped the players developed other social abilities through interaction and sharing. So when they play during sports, their violent instinct to exhibit aggressive behaviour diminishes as they are able to channelize their energy in the game. Therefore sports players tend to be less violent as compared to those who do not play sports (Stornes & Roland, 2010). A direct link between anger, hostility, and neuroticism has been inferred, whereas there as an indirect association regarding the sub-dimensions of compatibility and accountability (Eryılmaz & Ögülmüş, 2010). The aim of the current study was to find the aggression patterns in female athletes between basketball and volleyball players.

## Materials and Methods

A total of 30 female Basketball and Volleyball Players were selected LNIPE, Gwalior as the subjects for the present study. The age of the subjects were ranging from 18-25 years. All the selected subjects represented at least district level tournaments. Among the 30 subjects, there are 15 Basketball players and 15 Volleyball players. Comparison was made between Basketball and Volleyball players.

### Tools

Buss-Perry Aggression Questionnaire of Buss, A. H., and Perry, M. (1992) (Buss & Perry, 1992) was administered. The questionnaire consists of 29 statements. These 29 statements are further divided into 4 sub-scales namely; Physical Aggression (9 items), Verbal Aggression (5 items), Anger (7 items) and Hostility (8 items) which were designed to measure factors that reflect Aggression of female sports athlete.

### Statistical Analysis

Descriptive statistics were computed for all measures. The data obtained were analyzed with the help of statistical software (SPSS 26 version). The mean, standard deviation along with independent 't' test were computed to check the differences between samples mean of Basketball and Volleyball players. The level of statistical significance was set at 0.05 levels.

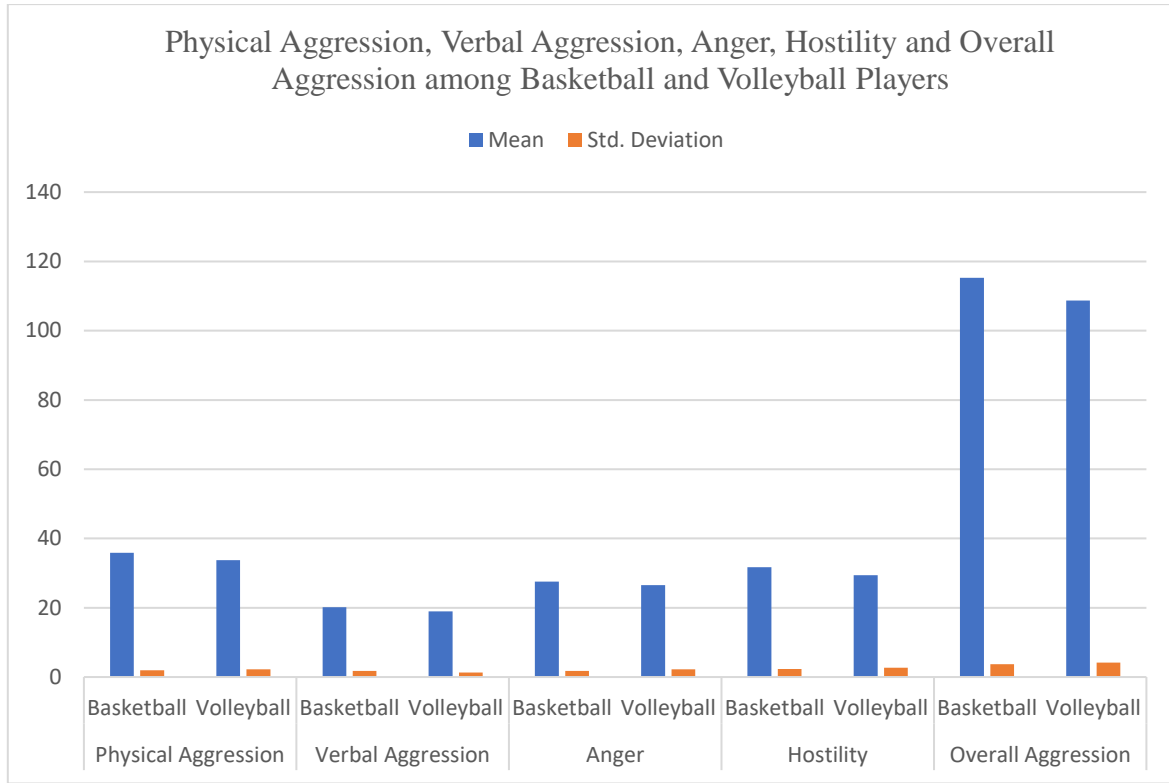
## Results

**Table 1:** Descriptive Statistics of the Responses on Physical Aggression, Verbal Aggression, Anger, Hostility and Overall Aggression of Basketball and Volleyball Players

Sub scales	N	Basketball Players			Volleyball Players			
		Mean	Std. deviation	Std. error mean	N	Mean	Std. deviation	Std. error mean
Physical Aggression	15	35.866	1.922	.496	15	33.733	2.186	.564
Verbal Aggression	15	20.133	1.767	.456	15	19.000	1.309	.338
Anger	15	27.533	1.767	.456	15	26.533	2.199	.567
Hostility	15	31.733	2.344	.605	15	29.400	2.667	.688
Overall Aggression	15	115.266	3.712	.958	15	108.666	4.203	1.085

The table 1 compares basketball and volleyball players on various aggression sub-scales, including physical aggression, verbal aggression, anger, hostility, and overall aggression. For physical aggression, basketball players (N=15) had a higher mean score (35.866) than volleyball players (33.733), with similar levels of variability as indicated by their standard deviations (1.922 and 2.186, respectively). In terms of verbal aggression, basketball players had a slightly higher mean (20.133) compared to volleyball players (19.000), though both groups showed relatively low variability in scores. Basketball players also reported higher levels of anger (27.533 vs. 26.533) and hostility (31.733 vs. 29.400) than volleyball players, with basketball players showing a somewhat more consistent distribution of scores (lower standard deviations). Finally, basketball players had a higher overall aggression score (115.266) compared to volleyball players (108.666), indicating generally higher levels of aggression. The standard errors for each group suggest that the means are fairly reliable estimates of the overall population values.

**Figure 1:** Graphical representation of Physical Aggression, Verbal Aggression, Anger, Hostility and Overall Aggression of Basketball and Volleyball Players



**Table 2:** Independent 't' test of the Responses on Physical Aggression, Verbal Aggression, Anger, Hostility and Overall Aggression of Basketball and Volleyball Players

		Levene's test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
<b>Physical Aggression</b>	Equal variances assumed	.35	.55	2.83	28	.008	2.13	.75	.59	<b>3.67</b>
	Equal variances not Assumed			2.83	27.54	.008	2.13	.75	.59	<b>3.67</b>
<b>Verbal Aggression</b>	Equal variances assumed	.78	.38	1.99	28	.056	1.13	.56	-.03	<b>2.29</b>
	Equal variances not Assumed			1.99	25.80	.057	1.13	.567	-.03	<b>2.30</b>
<b>Anger</b>	Equal variances assumed	.68	.41	1.37	28	.181	1.00	.72	-.49	<b>2.49</b>
	Equal variances not Assumed			1.37	26.75	.181	1.00	.72	-.49	<b>2.49</b>
	Equal variances assumed	.03	.85	2.54	28	.017	2.33	.91	.45	<b>4.21</b>

<b>Hostility</b>	Equal variances not Assumed			2.54	27.54	.017	2.33	.91	.45	<b>4.21</b>
	Equal variances assumed	.10	.74	4.55	28	.000	6.60	1.44	3.63	<b>9.56</b>
<b>Overall Aggression</b>	Equal variances not Assumed			4.55	17.57	.000	6.60	1.44	3.63	<b>9.56</b>
	Equal variances assumed									

**The table 2** represents the results of Levene's test for equality of variances and independent t-tests comparing basketball and volleyball players on physical aggression, verbal aggression, anger, hostility, and overall aggression. For physical aggression, Levene's test ( $F = 0.35$ ,  $p = 0.55$ ) shows no significant difference in variances, allowing the assumption of equal variances. The t-test indicates a significant difference between the two groups ( $t = 2.83$ ,  $p = 0.008$ ), with basketball players having a higher mean physical aggression score by 2.13 points (95% CI: 0.59 to 3.67). In verbal aggression, Levene's test ( $F = 0.78$ ,  $p = 0.38$ ) also supports the assumption of equal variances. The t-test ( $t = 1.99$ ,  $p = 0.056$ ) suggests that the difference in mean verbal aggression between basketball and volleyball players approaches significance, with basketball players scoring 1.13 points higher, although the confidence interval (-0.03 to 2.29) includes zero, indicating this difference may not be meaningful. For anger, Levene's test ( $F = 0.68$ ,  $p = 0.41$ ) shows equal variances, but the t-test ( $t = 1.37$ ,  $p = 0.181$ ) reveals no significant difference in anger levels between the two groups, with a mean difference of 1.00 (95% CI: -0.49 to 2.49). In hostility, Levene's test ( $F = 0.03$ ,  $p = 0.85$ ) indicates equal variances, and the t-test ( $t = 2.54$ ,  $p = 0.017$ ) reveals a significant difference, with basketball players scoring 2.33 points higher on hostility (95% CI: 0.45 to 4.21). Lastly, for overall aggression, Levene's test ( $F = 0.10$ ,  $p = 0.74$ ) supports equal variances. The t-test shows a highly significant difference ( $t = 4.55$ ,  $p < 0.001$ ), with basketball players having a higher overall aggression score by 6.60 points (95% CI: 3.63 to 9.56). In summary, basketball players exhibit significantly higher physical aggression, hostility, and overall aggression compared to volleyball players, while differences in verbal aggression and anger are less pronounced or not statistically significant.

## Discussion

The present study aimed to investigate aggression patterns among female athletes, specifically comparing basketball and volleyball players. The findings revealed that basketball players exhibit significantly higher levels of physical aggression, hostility, and overall aggression when compared to their volleyball counterparts. This observation indicates that the aggressive tendencies in basketball, as a contact-intensive sport, are more pronounced than those in volleyball, which is generally considered to be less aggressive in nature. One of the most striking findings of this study is the significantly higher level of physical aggression observed in basketball players compared to volleyball players. This difference may be attributed to the inherent characteristics of each sport. In contrast, volleyball is a non-contact sport where players are separated by a net, potentially reducing opportunities for physical aggression (Mroczkowska, 2004). The higher levels of physical aggression in basketball players align with the findings of Keeler, who reported that contact sport athletes tend to display more aggressive behaviors than those in non-contact sports (Keeler, 2000). While the differences in verbal aggression and anger between basketball and volleyball players were not statistically significant, the trend towards higher scores among basketball players is noteworthy. This pattern may reflect the more confrontational nature of basketball, where verbal exchanges and emotional expressions are more common and often used as tactical elements (Lazarus, 2000). The slightly elevated anger levels in basketball players could be a result of the more frequent physical contact and competitive interactions inherent in the sport (Sofia & Cruz, 2017). The significant difference in hostility levels between basketball and volleyball players is particularly interesting. Higher hostility scores among basketball players might be related to the more aggressive nature of the sport, which could foster a more combative mind set (Bushman & Wells, 1998). Additionally, the constant physical proximity to opponents in basketball may contribute to heightened feelings of antagonism and suspicion, core components of hostility (Buss & Perry, 1992). The markedly higher overall aggression scores in basketball players compared to volleyball players underscore the cumulative effect of the sport-specific factors discussed above. This finding is consistent with the meta-analysis by S nderlund et al. (2014), which found that athletes in contact sports generally exhibit higher levels of aggression both on and off the field compared to those in non-contact sports (S nderlund et al., 2014). These results have important implications for coaches, sports psychologists, and athletes. Understanding the sport-specific aggression patterns can inform tailored interventions and training programs aimed at managing aggressive behaviors effectively. Future research could explore the causal relationships between sport type and aggression levels, perhaps through longitudinal studies tracking athletes as they transition between sports. Additionally, investigating the role of cultural factors, team dynamics, and individual personality traits in shaping aggression patterns could provide a more comprehensive understanding of this phenomenon.

## Conclusions

This study highlights the significant differences in aggression levels between female basketball and volleyball players. Basketball players, due to the nature of their sport, exhibit higher physical aggression, hostility, and overall aggression, while differences in verbal aggression and anger are less pronounced. These findings underscore the importance of considering the unique demands of different sports when addressing athlete behaviour and developing sport-specific psychological interventions.

## References

Bandura, A. (1973). *Aggression: A social learning analysis* (pp. ix, 390). Prentice-Hall.

- Bushman, B., & Wells, G. (1998). Trait Aggressiveness and Hockey Penalties: Predicting Hot Tempers on the Ice. *Journal of Applied Psychology*, 83, 969–974. <https://doi.org/10.1037/0021-9010.83.6.969>
- Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology*, 63(3), 452–459. <https://doi.org/10.1037//0022-3514.63.3.452>
- Eryılmaz, A., & Öğülmüş, S. (2010). Subjective Well-Being and Big Five Personality Model at Adolescence. *Journal of Kirsehir Education Faculty*, 11.
- Gergen, K., & Gergen, M. (1986). Narrative Form and the Construction of Psychological Science.
- Keeler, L. (2000). The differences in sport aggression, life aggression, and life assertion among adult male and female collision, contact, and non-contact sport athletes. *Journal of Sport Behavior*. <https://www.semanticscholar.org/paper/The-differences-in-sport-aggression%2C-life-and-life-Keeler/667b65c5607200b443f7cf669736b7eb5620a5fd>
- Lazarus, R. (2000). How Emotions Influence Performance in Competitive Sports. *The Sport Psychologist*, 14, 229–252. <https://doi.org/10.1123/tsp.14.3.229>
- Mroczkowska, H. (2004). Male vs. Female motivation for sport practice and success expectance. *Biology of Sport*, 21, 273–284.
- Praveen. (2015). An Impact of Aggression on Sports Performance. *International Journal of Applied Research*. <https://www.semanticscholar.org/paper/An-Impact-of-Aggression-on-Sports-Performance-Praveen/3a886e90c04ca2474d848ca595a99cc1d233fd5b>
- Silva, J. M. (1983). The perceived legitimacy of rule violating behavior in sport. *Journal of Sport Psychology*, 5(4), 438–448.
- Sofia, R., & Cruz, J. F. A. (2017). Unveiling anger and aggression in sports: The effects of type of sport, competitive category and success level. *Revista de Psicología Del Deporte*, 26(2), 21–28.
- Sønderlund, A. L., O'Brien, K., Kremer, P., Rowland, B., De Groot, F., Staiger, P., Zinkiewicz, L., & Miller, P. G. (2014). The association between sports participation, alcohol use and aggression and violence: A systematic review. *Journal of Science and Medicine in Sport*, 17(1), 2–7. <https://doi.org/10.1016/j.jsams.2013.03.011>
- Stornes, T., & Roland, E. (2010). Handball and Aggression: An investigation of adolescent handball players' perceptions of aggressive behavior. *European Journal of Sport Science*, March 2004, 1–13. <https://doi.org/10.1080/17461390400074101>
- Widmeyer, W. N., & Birch, J. S. (1984). Aggression in professional ice hockey: A strategy for success or a reaction to failure? *The Journal of Psychology: Interdisciplinary and Applied*, 117(1), 77–84. <https://doi.org/10.1080/00223980.1984.9923661>