Physical Education Theory and Methodology
Теорія та методика фізичного виховання

ISSN 1993-7989 (print)
ISSN 1993-7997 (online)
ISSN-L 1993-7989

Original Scientific Article

Clarifying Gender Differences in Psychological Skills and Aggression among University Athletes: A Cross-Cultural Comparison of Indicators between Individuals from Delhi and Baghdad

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Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

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Accepted for Publication: December 10, 2024
Published: January 30, 2025

DOI: 10.17309/tmfv.2025.1.05

Abstract

Background. Psychological skills and aggression are pivotal in athletic performance, influenced by both gender and cultural contexts. These factors are shaped by individual differences and cultural influences, they are essential to the development and use of these skills by athletes in sports.

Objectives. This study aimed to evaluate the differences in psychological skills and aggression levels across gender and university, providing insights into the psychological profiles of athletes within distinct cultural contexts.

Materials and methods. The study involved 300 athletes from the University of Delhi, India, and the University of Baghdad, Iraq, aged 18 to 30 years. Each university contributed 150 athletes, evenly divided by gender (75 males and 75 females). The participants were selected using non-probability quota and purposive sampling methods. Psychological skills were assessed using the Psychological Skills Inventory for Sports (PSIS), while aggression levels were measured with the Sports Aggression Questionnaire. Data collection occurred in a controlled environment under the supervision of trained researchers. Statistical analyses included a two-way ANOVA and Pearson correlation coefficients, utilizing SPSS software.

Results. Significant differences in psychological skills and aggression levels were observed across universities and genders. According to the results obtained, University of Delhi athletes showed higher psychological skills (PS: 154.83 ± 18.50) compared to University of Baghdad athletes (PS: 109.83 ± 26.05). Furthermore, male athletes from Delhi exhibited greater aggression (44.41 ± 10.35) than their Baghdad counterparts (37.93 ± 4.20). A two-way ANOVA revealed that player type significantly influenced psychological skills ($F = 300.47$, $p = 0.01$) and aggression ($F = 71.54$, $p = 0.01$). Gender also significantly impacted Anxiety Control ($F = 8.64$, $p = 0.01$) and Foul Play ($F = 4.94$, $p = 0.05$). A weak positive correlation ($r = 0.284$, $p = 0.01$) was identified between psychological skills and aggression, suggesting a slight tendency for increased psychological skills to correspond with higher aggression levels.

Conclusions. These findings underscore the importance of considering both gender and university context when evaluating psychological skills and aggression in athletes. The insights derived from this study can inform the development of targeted training and support strategies to enhance athlete performance and well-being.

Keywords: psychological skill, aggression, gender differences, university athletes, cross-culture.

Introduction

Sports psychologists play a crucial role in enhancing both the growth of athlete's minds and bodies (Schinke et al., 2018). They work in various capacities, including research, instruction, and consultation with players and coaches. Their expertise extends beyond traditional sports science, incorporating specialized psychological training to help athletes develop mental skills that improve performance (Birrer & Morgan, 2010). Despite the recognized importance of psychological strategies in sports, they have historically not received the attention they deserve, particularly when it comes to teaching vital life skills via athletics, especially

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to young people who are at-risk. Programs led by sport psychologists have demonstrated the value of using sports as a vehicle for both personal and athletic development, highlighting the need for specialized training to impart life skills to underprivileged youth (Danish & Nellen, 1997).

Aggression, a significant aspect of sports, is often fueled by intense competition, high-conflict situations, and the entertainment value of certain sports (Alexandra et al., 2015; Chernozub et al., 2018; Lisenchuk et al., 2019). It is a fundamental characteristic of human behavior, serving as a means for individuals to affirm their self-worth and identity. In many sports, particularly contact sports like martial arts and football, aggression becomes a necessary tool for achieving success (Korobeynikov et al., 2019; Tushchenko et al., 2019). Trainers often reinforce aggressive behavior by encouraging athletes to push through challenging situations to benefit the team (Syrmpas et al., 2018). Over time, aggression can become ingrained in an athlete's behavior, contributing to favorable competitive outcomes. However, the continuous reinforcement of aggression may also lead to increased personality conflicts, as athletes internalize these aggressive traits not only in sports but also in other aspects of their lives (Petrovska et al., 2020).

In addition to aggression, psychological skills such as self-confidence, motivation, and mental resilience are critical factors influencing an athlete's success. Psychological traits can be as crucial as physical and technical abilities in determining performance outcomes (Demirci & Phytanza, 2021; Phytanza et al., 2021). Coaches often recognize a winning mindset and self-confidence as key attributes that successful athletes must develop (Van Rossum, 1996). Mental training, including techniques like mental imagery, rehearsal and visualization, has been recognized as an effective strategy to enhance athletic performance (Durand-Bush & Salmela, 2002; Rahman & Islam, 2021). Motivation is also a significant driver in training programs, as it propels athletes to engage in the actions necessary for developing critical psychological skills (Menegassi et al., 2018). Consequently, self-confidence and motivation often serve as key indicators for distinguishing between athletes who achieve success and those who do not (Purwanto et al., 2021; Sheldon et al., 2013).

Gender disparities in psychological skills and aggression are a central focus of sports psychology. Research have indicated that male athletes tend to score higher on psychological skills than female athletes, even in high-intensity sports like basketball, soccer, and swimming, even when both have comparable experience levels (Burhaein et al., 2020). Researchers Katsikas et al., (2009) suggest that gender plays a crucial role in determining psychological aptitude, with male athletes often exhibiting higher levels of aggression and assertiveness, which positively impact their performance in contact sports. On the other hand, female athletes often demonstrate greater mental resilience and adaptability, particularly in non-contact sports. Understanding these gender differences is essential for developing psychological training programs tailored to the specific needs of male and female athletes.

This study aims to explore the relationship between gender, psychological skills, and aggression among university athletes from Delhi, India, and Baghdad, Iraq. These two regions offer distinct socio-economic and cultural landscapes that shape the psychological traits and behaviors of athletes. Delhi University's emphasis on competitive athletics contrasts with the socio-political challenges faced by athletes at Baghdad University, which may influence their psychological and behavioral responses in sports. By examining factors such as mental rehearsal, anxiety management, and aggression control, For athletes across these two cities, this study looks for trends that might guide the creation of specialized training plans, coaching techniques, as well as mental health support networks.

Materials and Methods

Study participants

The study involved a sample of 300 athletes aged between 18 and 30 years, comprising 150 players from University of Baghdad and 150 players from University of Delhi. Each university's sample included 75 male players and 75 female players. Participants were selected using a non-probability quota and purposive sampling method to ensure representation from both universities. Care was taken to include only complete and clear responses, resulting in the final selection of 300 male and female players from both India and Iraq.

Study Organization

Standardization of methods was achieved by conducting data collecting in a controlled setting. Participants underwent assessments for Psychological Skills and Aggression using validated instruments. The Psychological Skills Inventory for Sports (Mahoney et al., 1987) consists of 60 items measuring six Psychological Skills: Achievement Motivation, Goal Setting, Anxiety Control, Maintaining Confidence, Concentration, and Mental Rehearsal. The Sports Aggression Questionnaire (Makarowski, 2013) includes 15 statements assessing three aggression factors: Go-Ahead, Foul Play, and Assertiveness, using a five-point Likert scale.

The researcher administered the Psychological Skills Test and Aggression Test, to the selected participants from both universities. Testing sessions were organized to ensure consistency, and all participants provided written informed consent before participation. Data collection was supervised by trained researchers to maintain accuracy throughout the process.

Statistical Analyses

Data analysis was performed using SPSS software. Descriptive statistics, including means and standard deviations, were calculated for all psychological skills and aggression measures. A two-way ANOVA was utilized to assess the effects of types of players and gender on the dependent variables, with post-hoc tests applied where necessary. Pearson's correlation coefficient was employed to examine the relationships between psychological skills and aggression, with a significance level set at 0.05 for all statistical tests to ensure the reliability of the results.

Results

The following Table 1 presents descriptive statistics (mean ± standard deviation) of psychological skills among sports majors from the University of Baghdad and the Uni-

Table 1. Descriptive statistics (mean + SD) of psychological skills among sports majors

Subjects	n	PS	AM	GS	AC	MC	CON	MR
Male Athletes (BU)	75	107.48 ± 26.87	16.94 ± 6.33	17.21 ± 6,27	18.45 ± 4.76	17.50 ± 4.48	18.90 ± 4.31	18.46 ± 7.22
Female Athletes (BU)	75	112.18 ± 25.17	17.65 ± 6.87	17.88 ± 6.39	20.00 ± 5.04	17.38 ± 4.80	20.88 ± 5.18	19.38 ± 6.06
All Athletes (BU)	150	109.83 ± 26.05	17.30 ± 6.60	17.54 ± 6.32	19.22 ± 4.95	17.44 ± 4.63	19.89 ± 4.85	18.42 ± 6.64
Male Athletes (DU)	75	151.45 ± 18.53	26.50 ± 4.94	27.08 ± 3.36	18.84 ± 4.24	24.08 ± 3.47	26.84 ± 3.70	28.06 ± 4.40
Female Athletes (DU)	75	158.21 ± 17.95	28.36 ± 4.87	27.98 ± 3.14	20.33 ± 3.73	24.89 ± 3.34	27.56 ± 3.65	28.26 ± 4.18
All Athletes (DU)	150	154.83 ± 18.50	27.43 ± 4.97	27.53 ± 3.28	19.58 ± 4.05	24.48 ± 3.42	27.20 ± 3.68	28.16 ± 4.28
All Male Athletes	150	129.46 ± 31.87	21.72 ± 7.42	22.14 ± 7.05	18.64 ± 4.50	20.79 ± 5.18	22.87 ± 5.64	23.26 ± 7.66
All Female Athletes	150	135.20 ± 31.74	23.00 ± 8.00	22.93 ± 7.13	20.16 ± 4.42	21.14 ± 5.58	24.22 ± 5.58	23.32 ± 7.17
Overall	300	132.33 ± 31.88	22.36 ± 7.73	22.54 ± 7.09	19.40 ± 4.52	20.96 ± 5.38	23.54 ± 5.64	23.29 ± 7.41

Key: PS: Psychological Skills; AM: Achievement Motivation; GS: Goal Setting; AC: Anxiety Control; MC: Maintaining Confidence; CON: Concentration; MR: Mental Rehearsal; BU: University of Baghdad; DU: University of Delhi

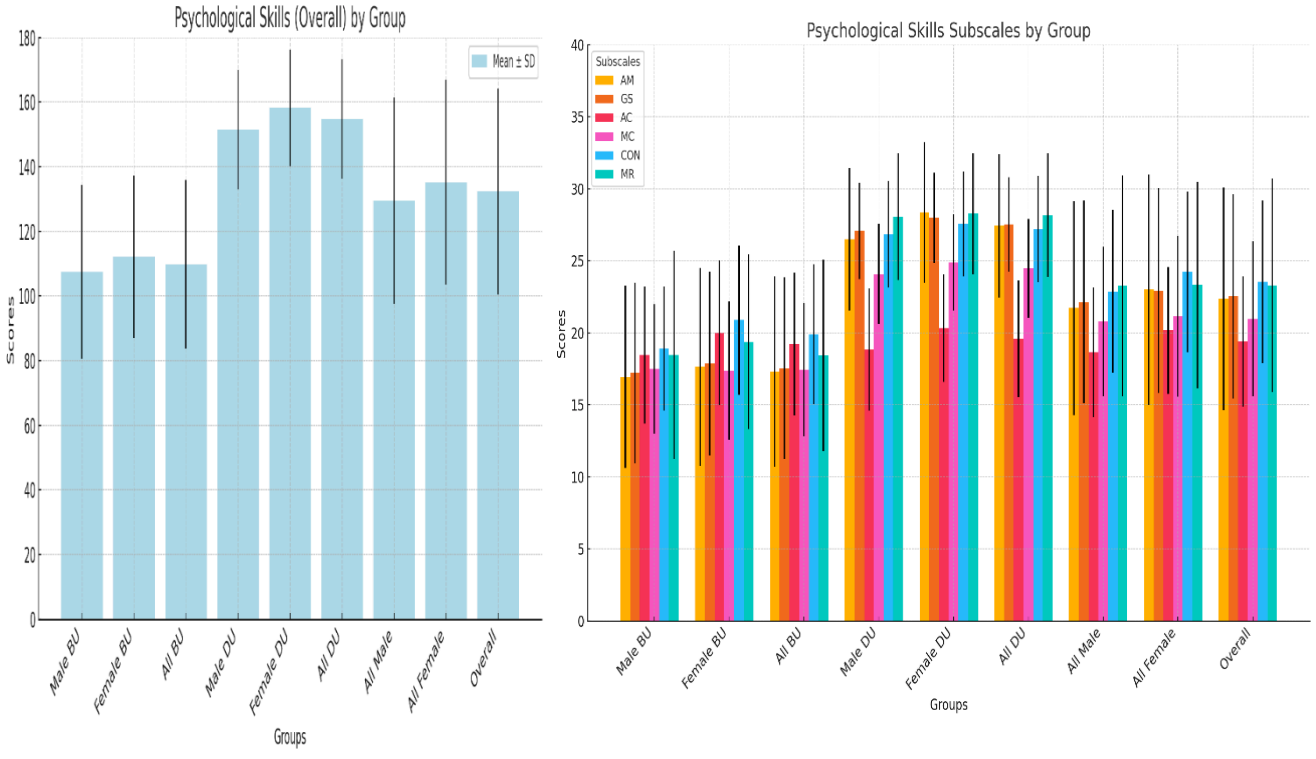

Fig. 1. Comparison of psychological skills and related traits across university and gender group

versity of Delhi, segmented by gender, while Figure 1 illustrates the corresponding mean and standard deviation scores.

The following Table 2 presents descriptive statistics (mean ± standard deviation) of aggression levels among sports majors from the University of Baghdad and the University of Delhi, segmented by gender, while Figure 2 illustrates the corresponding mean and standard deviation scores.

Table 3 presents the results indicating that Types of Players had a significant effect on PS ($F = 300.47$, $p = 0.01$), AM ($F = 227.03$, $p = 0.01$), GS ($F = 294.62$, $p = 0.01$), MC ($F = 223.57$, $p = 0.01$), CON ($F = 220.67$, $p = 0.01$), and MR ($F = 225.92$, $p = 0.01$), while Gender significantly influenced PS ($F = 4.87$, $p = 0.05$), AC ($F = 8.64$, $p = 0.01$), and CON ($F = 7.49$, $p = 0.01$). Comparing these findings with the descriptive statistics in Table 1, the higher mean scores

Table 2. Descriptive statistics of aggression among sports majors

Subjects	n	Aggression	Go-Ahead	Foul Play	Assertiveness
Male Athletes (BU)	75	37.93 ± 4.20	12.22 ± 5.40	13.86 ± 2.57	11.84 ± 4.36
Female Athletes (BU)	75	35.81 ± 4.82	11.40 ± 6.40	12.46 ± 2.27	11.94 ± 4.84
All Athletes (BU)	150	36.87 ± 4.63	11.81 ± 5.92	13.16 ± 2.52	11.89 ± 4.59
Male Athletes (DU)	75	44.41 ± 10.35	15.30 ± 4.77	13.93 ± 4.16	15.17 ± 4.83
Female Athletes (DU)	75	43.56 ± 7.99	15.20 ± 4.32	13.60 ± 4.05	14.76 ± 3.70
All Athletes (DU)	150	43.98 ± 9.22	15.25 ± 4.53	13.76 ± 4.09	14.96 ± 4.29
All Male Athletes	150	41.17 ± 8.52	13.76 ± 5.31	13.90 ± 3.44	13.50 ± 4.88
All Female Athletes	150	39.68 ± 7.64	13.30 ± 5.77	13.03 ± 3.32	13.35 ± 4.52
Overall	300	40.43 ± 8.11	13.53 ± 5.54	13.46 ± 3.41	13.43 ± 4.70

Note: Values are expressed as means standard deviations

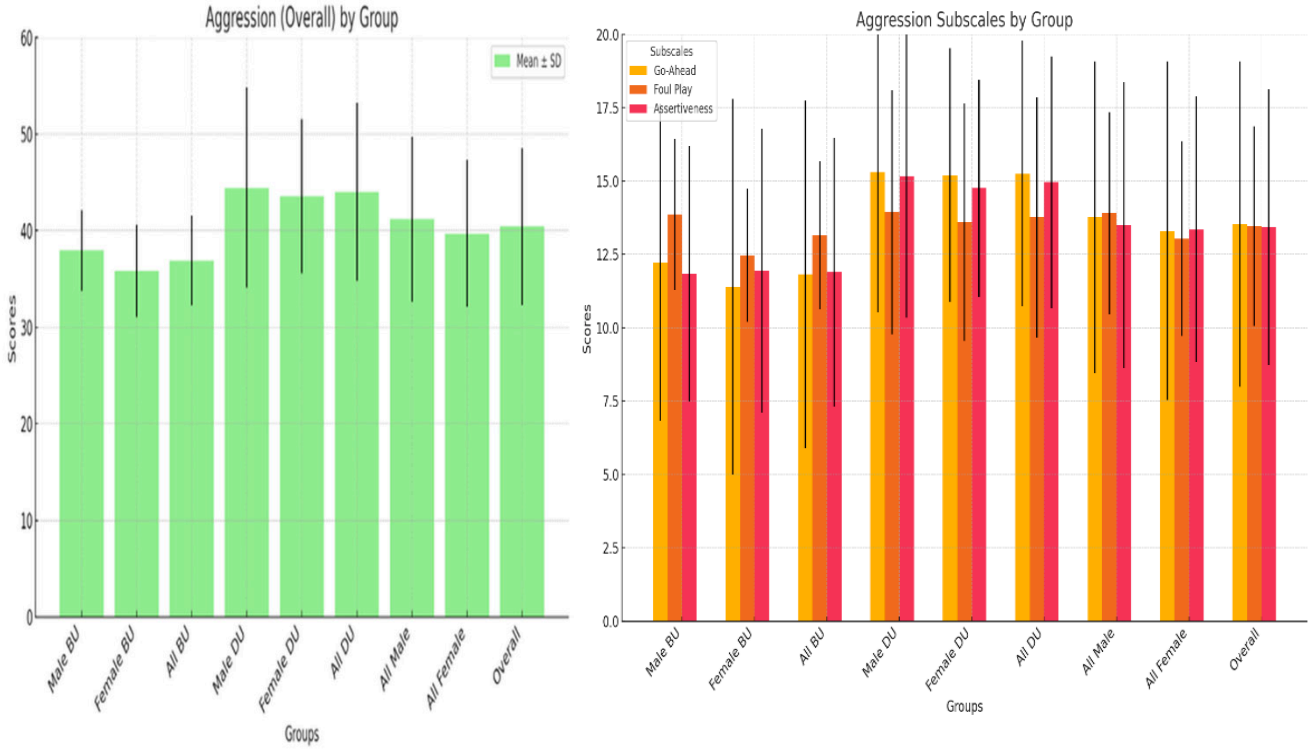

Fig. 2. Comparison of aggression and related traits across university and gender groups

for University of Delhi students across all psychological skills align with the significant effects of Types of Players, while the significant influence of Gender on AC corresponds with the higher mean scores for female students, highlighting the importance of both player type and gender in understanding psychological skills among sports majors.

Table 4 presents a summary of a two-way ANOVA conducted to assess the effects of Types of Players (A) and Gender (B) on various dimensions of aggression among sports majors, including Aggression, Go-Ahead, Foul Play, and Assertiveness. The results indicate that Types of Players had a significant effect on Aggression ($F = 71.54$, $p = 0.01$), Go-Ahead ($F = 31.77$, $p = 0.01$), and Assertiveness ($F = 35.57$, $p = 0.01$), while Gender significantly influenced Foul Play ($F = 4.94$, $p = 0.05$). The interaction between Types of Players and Gender was not significant for any of the aggression

Table 3. Summary of two-way ANOVA of psychological skills among sports majors

Variables	Source of Variation	Sum of Squares	df	Mean Square	F-value	p-value
PS	Types of Players (A)	151875.00	1	151875.00	300.47	0.01
	Gender (B)	2465.33	1	2465.33	4.87	0.05
	(A x B)	79.05	1	79.05	0.15	NS
AM	Types of Players (A)	7701.33	1	7701.33	227.03	0.01
	Gender (B)	122.88	1	122.88	3.62	NS
	(A x B)	24.65	1	24.65	0.72	NS
GS	Types of Players (A)	7480.01	1	7480.01	294.62	0.01
	Gender (B)	46.41	1	46.41	1.82	NS
	(A x B)	1.08	1	1.08	0.04	NS
AC	Types of Players (A)	9.72	1	9.72	0.48	NS
	Gender (B)	173.28	1	173.28	8.64	0.01
	(A x B)	0.05	1	0.05	0.03	NS
MC	Types of Players (A)	3717.12	1	3717.12	223.57	0.01
	Gender (B)	9.01	1	9.01	0.54	NS
	(A x B)	16.33	1	16.33	0.98	NS
CON	Types of Players (A)	4004.05	1	4004.05	220.67	0.01
	Gender (B)	136.01	1	136.01	7.49	0.01
	(A x B)	29.45	1	29.45	1.62	NS
MR	Types of Players (A)	7115.07	1	7115.07	225.92	0.01
	Gender (B)	0.27	1	0.27	0.00	NS
	(A x B)	1.47	1	1.47	0.04	NS

Key: PS: Psychological Skills; AM: Achievement Motivation; GS: Goal Setting; AC: Anxiety Control; MC: Maintaining Confidence; CON: Concentration; MR: Mental Rehearsal

Table 4. Summary of two-way ANOVA of aggression among sports majors

Variables	Source of Variation	Sum of Squares	df	Mean Square	F-value	p-value
Aggression	Types of Players (A)	3794.96	1	3794.96	71.54	0.01
	Gender (B)	165.76	1	165.76	3.12	NS
	(A x B)	30.08	1	30.08	0.56	NS
Go-Ahead	Types of Players (A)	887.52	1	887.52	31.77	0.01
	Gender (B)	16.33	1	16.33	0.58	NS
	(A x B)	9.72	1	9.72	0.34	NS
Foul Play	Types of Players (A)	27.00	1	27.00	2.36	NS
	Gender (B)	56.33	1	56.33	4.94	0.05
	(A x B)	21.33	1	21.33	1.87	NS
Assertiveness	Types of Players (A)	708.40	1	708.40	35.57	0.01
	Gender (B)	1.76	1	1.76	0.08	NS
	(A x B)	5.07	1	5.07	0.25	NS

dimensions. Comparing these findings with the descriptive statistics in Table 1, the higher mean scores for University of Delhi students across all aggression dimensions align with the significant effects of Types of Players, while the significant influence of Gender on Foul Play corresponds with the higher mean scores for male students, suggesting that player type and gender play a role in shaping aggressive behaviors among sports majors. The non-significant interaction effects

indicate that the influence of Types of Players and Gender on aggression dimensions is independent of each other.

Table 5. Pearson Correlation Matrix of Psychological Skills and Aggression among Sports Majors

Variables	Psychological Skills	Aggression
Psychological Skills	1	.284**
Aggression	.284**	1

Note: **Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed).

There is a positive correlation ($r = .284$, $p = 0.01$) between psychological skills and aggression among University of Baghdad and University of Delhi sports majors ($n = 300$), which is significant at the 0.01 level (2-tailed). This indicates a weak positive relationship between the two variables, suggesting that as psychological skills improve, there is a slight tendency for aggression levels to increase as well. In other words, higher psychological skills are associated with a modest increase in aggression among sports majors.

Discussion

The current study explores the gender differences in psychological skills and aggression among university athletes from Delhi and Baghdad, offering a cross-cultural perspective on these constructs. The results from Tables 1 and 2 present clear evidence of significant variations in psychological skills and aggression across gender and university, with University of Delhi students scoring notably higher across all psychological skills and aggression dimensions. The disparity in psychological skills between Delhi and Baghdad athletes can be attributed to differing training environments, cultural influences, and sports development programs, which may explain why male and female athletes from University of Delhi consistently outperform their counterparts from University of Baghdad. These findings align with previous research that highlights the importance of cultural context in the development of psychological skills in athletes (Si et al., 2011; Champ et al., 2020).

The findings of this study reveal that female athletes in both Delhi and Baghdad universities scored higher in psychological skills, particularly in anxiety control and concentration. This contradicts much of the existing literature that typically reports superior psychological skills in male athletes (Shrivastava, 2013; Parnabas, 2015; Karamousalidis et al., 2006). One explanation for this discrepancy may lie in cultural and societal factors specific to these regions, where female athletes face additional barriers and pressures in sports, potentially fostering stronger psychological resilience (Forsyth et al., 2019). Additionally, socialization patterns may encourage emotional regulation in women, leading to more effective coping strategies in managing anxiety and maintaining focus (Monteiro et al., 2014). These results suggest that gender differences in psychological skills may be influenced by context, highlighting the need for further research to explore how cultural and environmental factors shape these skills across different populations (Matsumoto & Juang, 1996; Bouchard Jr & McGue, 2003)

On the other hand, male athletes demonstrated higher aggression levels, with Delhi University males exhibiting particularly elevated scores in assertiveness and Go-Ahead behaviors. These gender differences in aggression, particularly in the Go-Ahead dimension, support the notion that male athletes are more inclined toward overt competitive behaviors, which are often encouraged in male-dominated sports environments (Rahimizadeh et al., 2011; Ullah & Iftikhar, 2021; Nixon, 1997).

Furthermore, the significant effect of "Types of Players" on psychological skills and aggression, as indicated by the ANOVA results, reinforces the idea that different levels of competition and sports specialization have a profound impact on both mental and behavioral outcomes. The higher scores in psychological skills among Delhi athletes could be linked to the university's emphasis on competitive sports and psychological conditioning, which are crucial for high-level athletic performance (Fletcher & Wagstaff, 2009). This is further supported by the positive but weak correlation ($r = 0.284$, $p < 0.01$) between psychological skills and aggression, suggesting that athletes who possess higher psychological skills tend to display slightly higher levels of aggression, possibly due to their heightened competitiveness and mental focus.

The non-significant interaction between Types of Players and Gender for aggression dimensions implies that these factors operate independently in influencing aggressive behavior. This finding suggests that while both player type and gender affect aggression, they do not interact in a way that amplifies or diminishes each other's impact. This independence may reflect broader societal patterns, where gender and sports participation are influenced by different cultural expectations and experiences (Lau et al., 2007; Coakley & White, 1992). The weaker influence of gender on some aggression sub-scores, such as Foul Play, highlights the complexity of these behaviors, which may not be as strongly tied to gender norms as assertiveness or goal-directed aggression.

Conclusions

In summary, this study highlights significant cross-cultural and gender differences in psychological skills and aggression among university athletes. The findings underscore the need for tailored psychological training programs that consider both cultural and gender-specific factors to enhance athlete mental resilience and behavior management in competitive sports. Future research could benefit from examining these variables in other cultural contexts to generalize the findings further, and to investigate how cultural shifts in gender roles may influence the psychological development of athletes.

Acknowledgment

To every participant who helped with the study, the authors extend their sincere appreciation.

Conflicts of Interest

We declare that there are no conflicts of interest.

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З'ясування гендерних відмінностей щодо психологічних навичок та агресії серед університетських спортсменів: Крос-культурне порівняння показників між представниками Делі та Багдада

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Авторський вклад: A – дизайн дослідження; B – збір даних; C – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 9 с., 5 табл., 2 рис., 37 джерел.

Історія питання. Психологічні навички та агресія є визначальними чинниками спортивної результативності, на які впливають як гендерний, так і культурний контексти. На формування цих факторів позначаються індивідуальні відмінності та культурні впливи, і вони мають ключове значення для розвитку та використання вказаних навичок спортсменами у спорті.

Мета дослідження. Метою цього дослідження було визначити відмінності у психологічних навичках та рівнях агресії залежно від статі та ВНЗ, надаючи розуміння психологічних профілів спортсменів у межах різних культурних контекстів.

Матеріали та методи. У дослідженні взяли участь 300 спортсменів віком від 18 до 30 років, що навчалися у Делійському (Індія) та Багдадському університетах (Ірак). Кожен університет представив 150 спортсменів, порівну розподілених за статевою приналежністю (75 чоловіків і 75 жінок). Учасників було відібрано за допомогою методів неімовірнісної квотної та цілеспрямованої вибірок. Для оцінки психологічних навичок було застосовано опитувальник психологічних навичок у спорті ("Psychological Skills Inventory for Sports", PSIS), а рівень агресії визначали за допомогою опитувальника спортивної агресії ("Sports Aggression Questionnaire"). Збір даних проводився в контрольованому середовищі під наглядом підготовлених науковців. Методи статистичного аналізу включали двофакторний дисперсійний аналіз (ANOVA) та коефіцієнти кореляції Пірсона із використанням програмного забезпечення SPSS.

Результати. Спостерігалися значні відмінності у психологічних навичках та рівнях агресії між досліджуваними університетами та гендерними групами. Згідно з отриманими даними, спортсмени Делійського університету продемонстрували більш розвинені психологічні навички (PS: 154,83 ± 18,50) порівняно зі спортсменами Багдадського університету (PS: 109,83 ± 26,05). Крім того, спортсмени чоловічої статі з Делі мали вищий показник агресії (44,41 ± 10,35), ніж їхні

багдадські колеги (37,93 ± 4,20). За результатами двофакторного дисперсійного аналізу встановлено, що тип гравця суттєво впливає на психологічні навички (F = 300,47, p = 0,01) та рівень агресії (F = 71,54, p = 0,01). Статева приналежність також суттєво вплинула на контроль тривожності (F = 8,64, p = 0,01) та нечесну гру (F = 4,94, p = 0,05). Визначено слабку позитивну кореляцію (r = 0,284, p = 0,01) між психологічними навичками та рівнем агресії, що свідчить про незначну тенденцію до посилення психологічних навичок, що відповідає вищим рівням агресії.

Висновки. Представлені результати підкреслюють важливість врахування гендерного та університетського контекстів щодо оцінки психологічних навичок та рівня агресії у спортсменів. Отримані під час дослідження висновки можуть слугувати основою для розробки цільових програм підготовки та стратегій підтримки, спрямованих на покращення результативності та благополуччя спортсменів.

Ключові слова: психологічний навик, агресія, гендерні відмінності, університетські спортсмени, крос-культура.

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Cite this article as: Abiyra, A. J., Tiwari, S., Tiwari, S., & Haq, M. A. U. (2025). Clarifying Gender Differences in Psychological Skills and Aggression among University Athletes: A Cross-Cultural Comparison of Indicators between Individuals from Delhi and Baghdad. *Physical Education Theory and Methodology, 25*(1), 44-52. https://doi.org/10.17309/tmfv.2025.1.05

Received: 14.09.2024. Accepted: 10.12.2024. Published: 30.01.2025