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## Comparative analysis of psychological skills and its subscales among athletes from the University of Baghdad and the University of Delhi

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### Abstract

Psychological skills, such as motivation, focus, and anxiety control, are vital for athletic success. Athletes who develop these mental skills tend to perform better in competitive sports. Universities, including the University of Baghdad (BU) and the University of Delhi (DU), provide an ideal setting for understanding how different cultural and educational environments influence the development of these skills. This study aims to compare the psychological skills of athletes from BU and DU, focusing on key mental training techniques. It seeks to explore how cultural and educational factors affect athletes' mental preparedness and to provide recommendations for improving mental training programs. This study employed a cross-sectional survey design to assess the psychological skills of 300 athletes (150 each) from the University of Baghdad and the University of Delhi. Using purposive sampling, participants engaged in competitive sports were evaluated on six psychological skills: Achievement Motivation (AM), Goal Setting (GS), Anxiety Control (AC), Maintaining Confidence (MC), Concentration (CON), and Mental Rehearsal (MR). Data were collected using a validated psychological skills inventory, and independent t-tests were conducted to compare the groups. Athletes from University of Delhi scored significantly higher in psychological skills, including achievement motivation (AM), goal setting (GS), maintaining confidence (MC), concentration (CON), and mental rehearsal (MR) ( $p < .001$  for all), compared to those from University of Baghdad. A smaller but still significant difference was observed in anxiety control (AC) ( $p = .035$ ). These findings suggest that athletes from University of Delhi possess stronger psychological skills overall. Correlation analysis revealed strong positive relationships between AM, GS, and overall psychological skills, highlighting the interconnectedness of mental training and performance. These findings underscore the importance of mental preparedness in athletic success.

**Keywords:** Psychological skills, achievement motivation, goal setting, anxiety control, mental training, athlete performance

### 1. Introduction

The term Psychological Skills Training (PST) describes the methodical and regular use of psychological strategies to improve sports performance, pleasure, or self-satisfaction <sup>[1]</sup>. Through strategies including goal-setting, visualization, and self-talk, PST places a strong emphasis on the development of critical psychological abilities like self-confidence, attentional concentration, and anxiety regulation <sup>[2]</sup>. Due to the extensive evidence of these skills' ability to enhance athletic performance <sup>[3]</sup>, PST is a crucial component of contemporary sports psychology therapies.

In the literature, "mental techniques" and "psychological skills" are sometimes used interchangeably. But according to other studies, psychological skills are the intended results (like improved focus) while psychological procedures are the means by which those results are attained (like self-talk or imagery) <sup>[2]</sup>. Imagery creates lasting impressions by forming clear mental pictures of objects or events, with quick thinking, deliberation, and memory playing key roles in the process <sup>[4]</sup>. For instance, depending on how it is used in training, imagery may be used to increase self-confidence and focus <sup>[1]</sup>. In order to comprehend how athletes might methodically develop their mental faculties for peak performance in competitive sports, this distinction is essential.

Some writers contend that many studies do not fulfill the requirements for strong empirical proof, particularly in elite or highly specialized sports, despite the expanding amount of data

demonstrating the advantages of PST [5]. However, research like that done by Sheard and Golby (2006) [6] has demonstrated that athletes who participate in PST programs that incorporate several strategies, such relaxation, visualization, and goal-setting, significantly improve their performance.

This study is to investigate the psychological skills of athletes from two distinct cultural and educational contexts: the University of Baghdad and the University of Delhi, given the significance of psychological skills in athletic performance. This study aims to further knowledge of how mental training methods affect athletic performance in various contexts by contrasting the psychological skill sets of athletes from these colleges.

**2. Materials and Methods**

This study utilized a cross-sectional survey design to assess the psychological skills of athletes from the University of Baghdad (BU) and the University of Delhi (DU). A total of 300 participants (150 from each university) were recruited for the study, all of whom were engaged in competitive sports. Participants were selected using a purposive sampling method, ensuring representation from various sports disciplines. The psychological skills assessed in this

study included Achievement Motivation (AM), Goal Setting (GS), Anxiety Control (AC), Maintaining Confidence (MC), Concentration (CON), and Mental Rehearsal (MR). Data collection was carried out using a standardized psychological skills inventory specifically designed for athletes, which has been validated in previous research.

Descriptive statistics, including mean and standard deviation, were calculated for each psychological skill variable for both groups, as well as for the overall sample. The results were analyzed using independent t-tests to compare the differences in psychological skills between athletes from BU and DU. In addition, Pearson correlation coefficients were calculated to explore the relationships between psychological skills and mental training variables, with significance levels set at  $p < .05$ .

All data were processed using SPSS software to ensure the accuracy and reliability of statistical analysis.

**3. Results & Discussion**

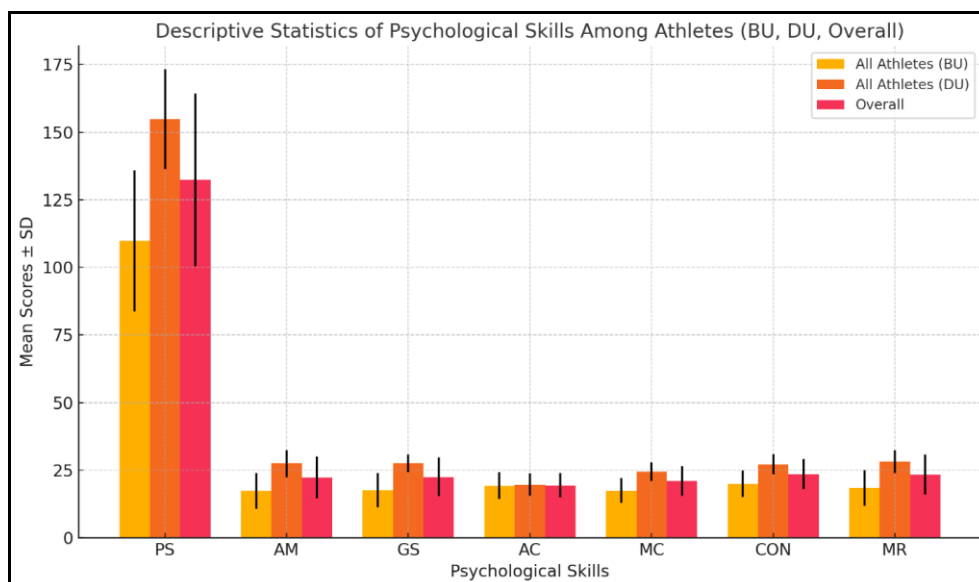
Descriptive statistics provided an overview of psychological skills across the sample, highlighting differences between athletes from the University of Baghdad and the University of Delhi. Correlation analysis further revealed significant relationships between psychological skills and its subscales.

**Table 1:** Descriptive statistics (mean ± standard deviation) of psychological skills among athletes from University of Baghdad (BU) and University of Delhi (DU)

Subjects	N	PS	AM	GS	AC	MC	CON	MR
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
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
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

Table 1 presents the descriptive statistics (mean ± standard deviation) of various psychological skills among athletes from the University of Baghdad (BU) and the University of Delhi (DU), as well as the overall sample of athletes. The psychological skills assessed include AM, GS, AC, MC, CON, and MR. Athletes from DU show consistently higher scores across most psychological skills compared to those from BU. The overall mean values for the combined sample of athletes indicate moderate to high levels of psychological skills, with noticeable differences between the two

university groups. Specifically, DU athletes scored significantly higher on AM (27.43±4.97 vs. 17.30±6.60) and GS (27.53±3.28 vs. 17.54±6.32), highlighting stronger psychological preparedness in these areas. However, both groups showed comparable levels of AC (BU: 19.22±4.95, DU: 19.58±4.05), suggesting similar abilities to manage stress in athletic contexts across the two institutions. The overall data provide insights into the psychological strengths of athletes, with DU athletes exhibiting a broader range of mental skills development.



**Fig 1:** Mean values of psychological skills among athletes from University of Baghdad (BU), University of Delhi (DU), and the overall sample

**Table 2:** Comparison of psychological skills between Baghdad University and Delhi University sports majors

Variables	Groups	Mean Diff.	df	t	Sig. (2-tailed)
PS	Baghdad University	-47.35	298	-15.47	.000
	Delhi University				
AM	Baghdad University	-7.23	298	-7.65	.000
	Delhi University				
GS	Baghdad University	-7.10	298	-8.32	.000
	Delhi University				
AC	Baghdad University	-1.27	298	-2.12	.035
	Delhi University				
MC	Baghdad University	-4.61	298	-6.91	.000
	Delhi University				
CON	Baghdad University	-6.19	298	-9.32	.000
	Delhi University				
MR	Baghdad University	-6.44	298	-7.02	.000
	Delhi University				

Note: PS = Psychological Skills, AM = Achievement Motivation, GS = Goal Setting, AC = Anxiety Control, MC = Maintaining Confidence, CON = Concentration, MR = Mental Rehearsal. \* = Significant at 0.05 level

Table 2 shows that athletes from Delhi University exhibited significantly higher scores across all measured psychological skills compared to athletes from Baghdad University. The largest mean difference was observed in overall psychological skills (PS), with a mean difference of -47.35 ( $t(298) = -15.47, p = .000$ ). Significant differences were also found in specific areas, including achievement motivation (AM) (-7.23,  $t(298) = -7.65, p = .000$ ), goal setting (GS) (-7.10,  $t(298) = -8.32, p = .000$ ), maintaining confidence (MC) (-4.61,  $t(298) = -6.91, p = .000$ ), concentration (CON) (-6.19,  $t(298) = -9.32, p = .000$ ), and mental rehearsal (MR) (-6.44,  $t(298) = -7.02, p = .000$ ). Although the difference in anxiety control (AC) was smaller, it was still statistically significant (-1.27,  $t(298) = -2.12, p = .035$ ). These results suggest that athletes from Delhi University generally possess better psychological skills and engage in more effective mental training than their counterparts from Baghdad University. Previous results confirmed that psychological skills training (PST) enhances performance through techniques like stress management, anxiety control, and coping strategies [7]. Concentration, stress management, and mental rehearsal help athletes remain calm under pressure, process information faster, and make quicker decisions [8].

**Table 3:** Correlation matrix between psychological skills and mental training variables

Correlations	PS	AM	GS	AC	MC	CON	MR
PS	1						
AM	.876**	1					
GS	.882**	.817**	1				
AC	.729**	.367**	.347**	1			
MC	.703**	.689**	.609**	.434**	1		
CON	.777**	.767**	.670**	.479**	.761**	1	
MR	.794**	.789**	.787**	.286**	.623**	.673**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed),

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 3 presents the Pearson correlation coefficients between the various psychological skills and mental training variables: PS, AM, GS, AC, MC, CON, and MR. All correlations are significant at the 0.01 level ( $p < .01$ ), indicating strong relationships between the variables. PS shows a particularly high positive correlation with AM ( $r = .876$ ) and GS ( $r = .882$ ), suggesting that higher

psychological skills are strongly associated with these aspects of mental training. Additionally, GS and AM are also highly correlated ( $r = .817$ ), reflecting their interconnectedness. AC exhibits moderate correlations with other variables, with its highest correlation being with MC ( $r = .434$ ). These findings demonstrate the intricate relationships between various psychological and mental training components, with strong links observed particularly between PS, AM, and GS.

The findings of this study provide a comprehensive understanding of the psychological skills of athletes from the University of Baghdad (BU) and the University of Delhi (DU), highlighting significant differences and correlations between various mental training variables. Athletes from DU consistently scored higher on several key psychological skills compared to their BU counterparts, particularly in AM and GS. This is evident from the large disparity in scores between DU ( $27.43 \pm 4.97$  for AM;  $27.53 \pm 3.28$  for GS) and BU ( $17.30 \pm 6.60$  for AM;  $17.54 \pm 6.32$  for GS), suggesting that DU athletes have a stronger orientation toward achieving set goals and maintaining focus on their objectives. Such findings are consistent with previous research, which emphasizes the importance of GS and AM in enhancing athletic performance, with motivated athletes showing greater resilience and persistence in sports contexts [9].

Interestingly, the two groups showed comparable levels of AC, with BU athletes scoring  $19.22 \pm 4.95$  and DU athletes  $19.58 \pm 4.05$ . This suggests that despite the differences in other psychological areas, both groups manage stress and anxiety in competitive environments similarly, aligning with research by Smith *et al.* (2020) [10], which found that athletes with well-developed AC are more likely to remain calm and focused during high-pressure situations.

The Pearson correlation matrix further revealed strong relationships between several psychological skills. AM showed a particularly high positive correlation with PS overall ( $r = .876$ ) and GS ( $r = .817$ ), indicating that athletes who are motivated to achieve are also likely to excel in setting and achieving performance goals. This supports the self-determination theory, which posits that intrinsic motivation and clear GS strategies are key to enhancing overall performance [11]. Additionally, the correlation between CON and GS ( $r = .670$ ) reinforces the idea that athletes who set clear, specific goals are better able to focus on tasks and maintain attention during competition [12].

MC was also highly correlated with AM ( $r = .689$ ) and CON ( $r = .761$ ), reflecting the importance of confidence in sustaining motivation and focus, as noted by Bandura (1997) [13]. This finding suggests that athletes who are confident in their abilities are more likely to stay motivated and maintain their focus on performance goals, further enhancing their psychological readiness. MR also demonstrated a strong relationship with overall PS ( $r = .794$ ) and GS ( $r = .787$ ), indicating that athletes who engage in MR are better equipped to visualize and achieve their goals [14, 15].

The correlation between AC and other psychological skills, though moderate, highlights its role in maintaining performance under pressure. AC was most strongly correlated with MC ( $r = .434$ ), suggesting that athletes who can manage their anxiety are more likely to feel confident in their abilities, which in turn supports their overall performance [16]. This reinforces the need for effective stress management techniques in athletic training programs.

Overall, these findings align with existing literature on the role of psychological skills in sports performance. The significantly higher psychological preparedness of DU athletes, particularly in AM and GS, may be attributed to differences in training programs, coaching approaches, or cultural factors that emphasize mental training. This supports previous research suggesting that psychological skills training (PST) can lead to enhanced performance by improving focus, confidence, and motivation. The strong correlations between psychological skills suggest an interconnectedness of these mental attributes, where improvement in one area (e.g., GS) may positively influence other areas (e.g., CON and MC).

#### 4. Conclusion

This study provides valuable insights into the psychological profiles of athletes from the University of Baghdad and the University of Delhi, highlighting the importance of achievement motivation, goal setting, and mental rehearsal in fostering psychological readiness. Athletes from the University of Delhi scored significantly higher in psychological skills, including achievement motivation, goal setting, maintaining confidence, concentration, anxiety control, and mental rehearsal, compared to those from the University of Baghdad. These findings suggest that athletes from the University of Delhi possess stronger overall psychological skills. The results underscore the need for targeted mental training interventions to address specific psychological weaknesses in athletes, particularly those from the University of Baghdad, where scores were generally lower. Future research should explore the factors contributing to these differences, such as variations in coaching strategies or access to psychological resources.

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