

<https://doi.org/10.48047/AFJBS.6.15.2024.1743-1753>



African Journal of Biological Sciences

Journal homepage: <http://www.afjbs.com>



Research Paper

Open Access

Psychological Profiles of Swimmers vs Para Swimmers:

A Comparative Analysis

Ketul Kumar¹, Prof. D.K. Dureha², Dr. Manoj Sahu³, Dr. Santosh Kumar⁴, Nutan⁵,
Badal Bind⁶

¹Research Scholar, Department of Physical Education, BHU, Varanasi, Uttar Pradesh.

²Professor, Department of Physical Education, BHU, Varanasi, Uttar Pradesh.

³Assistant Professor, Lakshmibai National Institute of Physical Education, Gwalior, Madhya Pradesh.

⁴Assistant Professor, Department of Physical Education, IIMT University, Meerut, Uttar Pradesh.

⁵Research Scholar, Department of Physical Education, BHU, Varanasi, Uttar Pradesh.

⁶Research Scholar, Department of Physical Education, Rajiv Gandhi University, Itanagar, Arunachal Pradesh.

Corresponding Details: Ketul Kumar, Research Scholar, Department of Physical Education, BHU, Varanasi, ketulkumar@bhu.ac.in

Volume 6, Issue 15, Sep 2024

Received: 15 July 2024

Accepted: 25 Aug 2024

Published: 05 Sep 2024

[doi: 10.48047/AFJBS.6.15.2024.1743-1753](https://doi.org/10.48047/AFJBS.6.15.2024.1743-1753)

ABSTRACT

Background: This study looks at the psychological profiles of swimmers and para swimmers, focusing variables like anxiety, aggression, mental toughness, and will to win to succeed. By comparing these two groups, the research seeks to uncover important psychological differences that could impact their performance and ability to handle the pressures of competitive swimming.

Objective: The study aims to compare the mental and emotional traits of swimmers and para swimmers. It focuses on understanding how aggressive behaviour, the drive to win, anxiety levels, and mental toughness differ between these two groups. By exploring these aspects, the research hopes to reveal important differences that could influence how each group performs and handles the challenges of competitive swimming.

Method: In this study, we involved 104 participants, equally divided between 52 swimmers and 52 para swimmers, with 26 males and 26 females in each group. All participants were between 18 and 30 years old and were selected randomly to ensure a representative sample. The research examined four main psychological factors: Sports Competition Anxiety, Mental Toughness, Aggression, and Will to Win.

Result: The analysis found that swimmers scored an average of 9.21 in Will to Win, 81.36 in Aggression, 31.76 in Mental Toughness, and 19.80 in Anxiety, reflecting their strong competitive drive and high aggression. Para-swimmers, on the other hand, had slightly lower scores in Will to Win (8.62) and Aggression (74.12), but higher in Mental Toughness (37.00) and lower in Anxiety (16.85).

T-tests revealed that swimmers had significantly higher Will to Win and Aggression, while para-swimmers showed greater Mental Toughness. Swimmers also experienced more Competitive State Anxiety compared to para-swimmers.

Keywords: Swimming, Para Swimming, Psychology, Aggression, Will to Win, Mental Toughness.

Introduction

Psychology is the scientific study of how we think, feel, and behave. It covers many areas, from how we process information and handle emotions to how we interact with others and maintain mental health. The study of psychology dates back to ancient times, with early philosophers like Plato and Aristotle exploring the connection between the mind and body. Later, thinkers like Sigmund Freud and Carl Jung developed influential theories about the unconscious mind and personality.

Competitive psychology looks at how our thoughts and emotions affect performance in competitions. It explores how factors like motivation, anxiety, concentration, and mental toughness can influence how well someone performs under pressure (Gonjo & Olstad, 2020). The goal of competitive psychology is to develop strategies that help athletes better prepare mentally, manage stress, stay focused, and keep a positive attitude. This understanding helps athletes improve their performance and succeed in their competitive endeavours. Techniques such as imagery, self-talk, relaxation or arousal regulation, goal setting, and thought management have been widely utilized in numerous studies on sport psychology interventions (Vealey, 2007).

Para swimmers often deal with unique challenges, both physically and mentally, that set them apart from able-bodied swimmers. These challenges include managing societal perceptions, overcoming extra physical obstacles, and finding ways to adapt in competition. According to Szájer et al. (2019), elite para-athletes experience additional stress beyond what their Olympic counterparts face, aside from the pressure to improve performance. Despite these hurdles, para swimmers have demonstrated remarkable resilience and achieved success across various levels of competition. However, the psychological factors contributing to their success haven't been studied as extensively as those of able-bodied swimmers.

Aim

The aim of this study was to compare the psychological profiles of swimmers and para swimmers. By looking at important factors like anxiety, aggression, mental toughness, and the will to win. This research will help us understand how these psychological aspects affect performance and resilience in swimming. The insights gained will be used to improve mental preparation and support for both swimmers and para swimmers.

Objective

1. To compare levels of aggression between swimmers and para swimmers.
2. To compare the will to win between swimmers and para swimmers.
3. To compare anxiety levels between swimmers and para swimmers.
4. To compare mental toughness between swimmers and para swimmers.

Methods

Selection of Subjects

For the purpose of this study, 52 swimmer (26 male + 26 female) and 52 para swimmer (26 male + 26 female) were selected as subjects for this study. The age of the subjects was ranged between 18-30 years. The selection of the samples was done with random sampling technique.

Criterion Measures

1. „Will to Win“ was assessed by using the standardized questionnaire of Prof. Anand Kumar
2. Mental toughness was measured by using the standardized questionnaire Sheard, Golby & Van Wersch (2009)
3. Sports Competition Anxiety was measured by using the standardized questionnaire Rainer Martens (1990) SCAT.
4. Aggression was measured by using the standardized questionnaire Buss-Perry Aggression Questionnaire (BPAQ),

Result

To characterize and explore psychological variables i.e. Mental Toughness, Aggression, competitive state anxiety and will to win, influencing factors of Sports Career among swimmers and various classes of para-swimmers, Descriptive Statistics were computed and data pertaining to this are presented through Table no. 1 to Table no. 2.

Table 1

Descriptive Statistics of swimmers in relation to their Mental Toughness, Aggression, competitive state anxiety and will to win.

Variables	N	Range	Mean	Std. Error	Std. Deviation	Variance
Will to Win	52	8.00	9.21	0.21	1.56	2.44
Aggression		57.00	81.36	1.91	13.79	190.35
Mental Toughness		21.00	31.76	0.65	4.69	22.06
Anxiety		13.00	19.80	0.39	2.87	8.27

Table 1 shows that, on average, swimmers scored 9.21 in Will to Win, 81.37 in Aggression, 31.77 in Mental Toughness, and 19.81 in Anxiety. The variability in these scores is reflected by the standard deviations: 1.56 for Will to Win, 13.80 for Aggression, 4.70 for Mental Toughness, and 2.88 for Anxiety. Additionally, the range of scores indicates the spread of the data: 8.00 for Will to Win, 57.00 for Aggression, 21.00 for Mental Toughness, and 13.00 for Anxiety.

Graph 1

Graphical representation of swimmers in relation to their Mental Toughness, Aggression, competitive state anxiety and will to win.

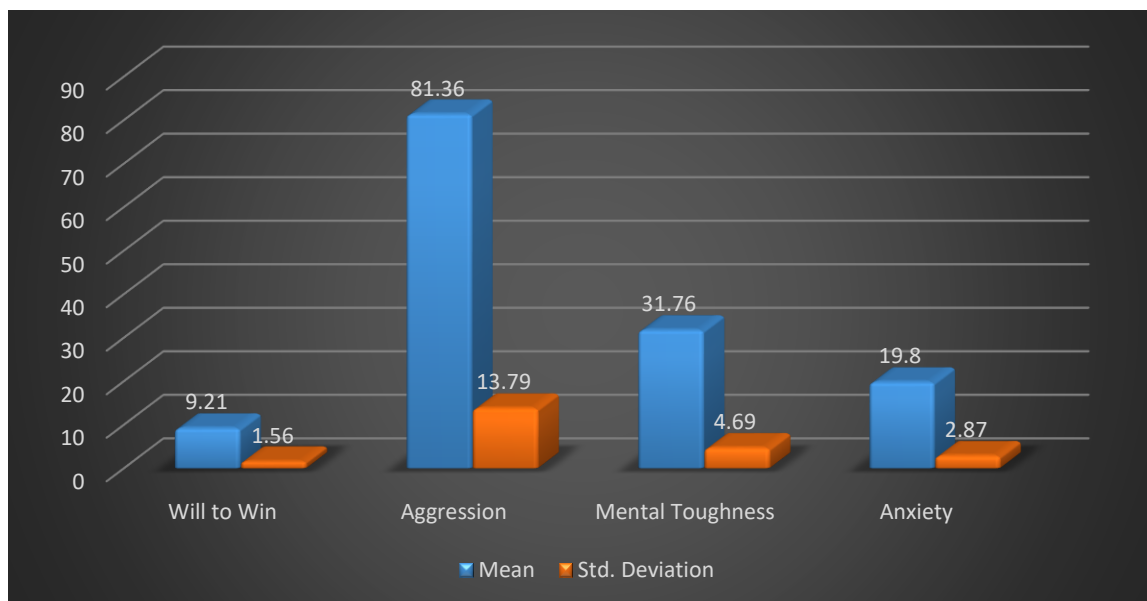


Table 2

Descriptive Statistics of para-swimmers in relation to their Mental Toughness, Aggression, competitive state anxiety and will to win.

Variables	N	Range	Mean	Std. Error	Std. Deviation	Variance
Will to Win	52	8.00	8.61	0.19	1.37	1.88
Aggression		58.00	74.11	1.91	13.82	191.20
Mental Toughness		25.00	37.00	0.71	5.17	26.82
Anxiety		10.00	16.84	0.36	2.62	6.87

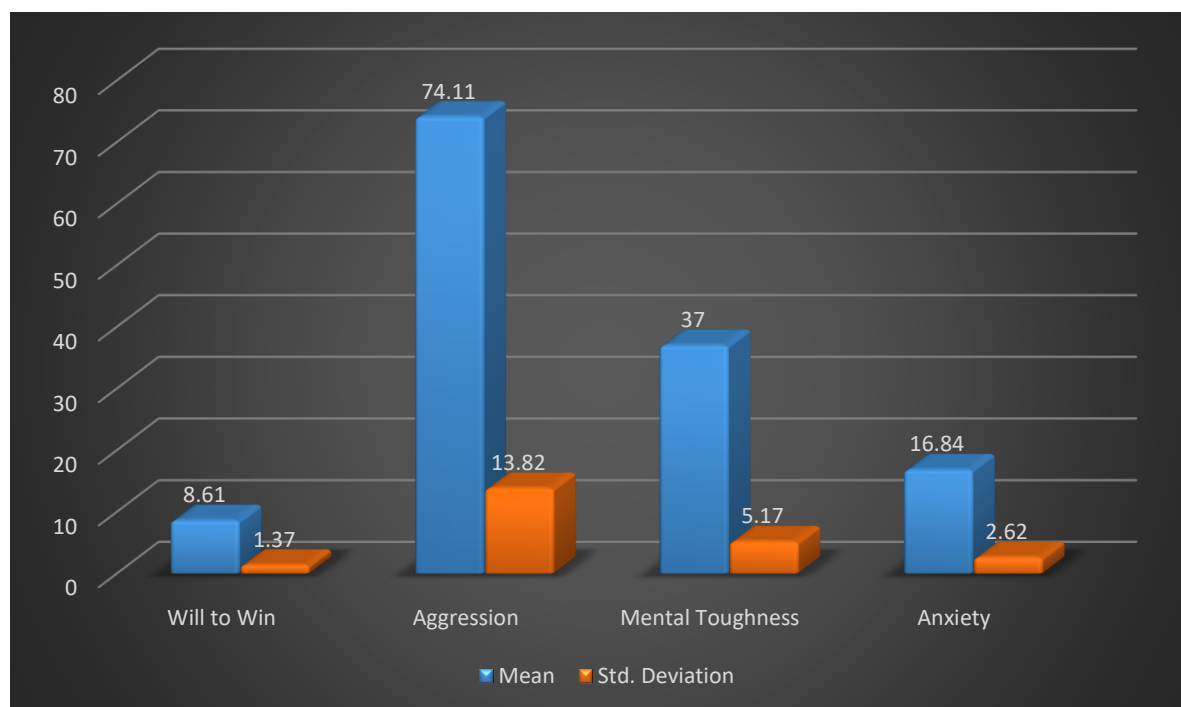
Table 2. shows that mean and standard deviation scores of psychological variables of para-swimmers have been found as follows: Will to Win (mean 8.61 & Std. Deviation 1.37), Aggression (mean 74.11 & Std. Deviation 13.82), Mental Toughness (mean 37.00 & Std. Deviation 5.17), Anxiety (mean 16.84 & Std. Deviation 2.62) respectively.

As well as Std. Error and Variance scores of psychological variables of swimmers have been found as follows: Will to Win (Std. Error .190 and Variance 1.88), Aggression (Std. Error 1.91 and Variance 191.20), Mental Toughness (Std. Error 0.71 and Variance 26.82), Anxiety (Std. Error 0.36 and Variance 6.87) respectively.

As well as Range scores of psychological variables of swimmers have been found as follows: Will to Win (Range 8.00), Aggression (Range 58.00), Mental Toughness (Range 25.00) and Anxiety (Range 10.00) respectively.

Graph 2

Graphical representation of para-swimmers in relation to their Mental Toughness, Aggression, competitive state anxiety and will to win.



A T-test is a statistical test used to determine whether two population means are different when the variances are known and the sample size is small. In the present study, T-test was used as a statistical technique to compare swimmers and para-swimmers in relation to

psychological variables i.e. Mental Toughness, Aggression, competitive state anxiety and will to win. T-test Statistics were computed and data pertaining to this are presented through Table no. 3 to Table no. 6.

Table 3

T-test used to compare between swimmers and para-swimmers in relation to psychological variables will to win.

Variables	T-value	P-value	df	Sig. (2-tailed)
Swimmers Para-swimmers	2.06	0.04	50	0.05

Tabulated value at df 50= 2.000

* Significance level at 0.05 (2-tailed)

Table 3. reveals the Comparison of will to win between Swimmers and Para-swimmers. The value of 'T' is 2.06 which shows a significant deference between Swimmers and Para-swimmers.

The table above shows that the T value for Swimmers and Para-swimmers 2.06, whereas the table value for the same is found to be 2.00 at 0.05 level of significance and standard error "p" value .041437. The calculated value of "T" being more than the table value, comparison is significant.

Table 4

T-test used to compare between swimmers and para-swimmers in relation to psychological variables Aggression.

Variables	T-value	P-value	df	Sig. (2-tailed)
Swimmers Para-swimmers	2.67	0.00	50	0.05

Tabulated value at df 50= 2.000

* Significance level at 0.05 (2-tailed)

Table 4. reveals the Comparison of Aggression between Swimmers and Para-swimmers. The value of 'T' is 2.67 which shows a significant deference between Swimmers and Para-swimmers.

The table above shows that the T value for Swimmers and Para-swimmers 2.67, whereas the table value for the same is found to be 2.00 at 0.05 level of significance and standard error "p" value 0.00. The calculated value of "T" being more than the table value, comparison is significant.

Table 5

T-test used to compare between swimmers and para-swimmers in relation to psychological variables Mental Toughness.

Variables	T-value	P-value	df	Sig. (2-tailed)
Swimmers Para-swimmers	5.39	0.00	50	0.05

Tabulated value at df 50= 2.000

*** Significance level at 0.05 (2-tailed)**

Table 5. revealed the Comparison of Mental Toughness between Swimmers and Para-swimmers. The value of 'T' is 5.39 which shows significant difference between Swimmers and Para-swimmers.

The table above shows that the T value for Swimmers and Para-swimmers 5.39, whereas the table value for the same is found to be 2.00 at 0.05 level of significance and standard error "p" value < .00.

Table 6

T test was used to compare between swimmers and para-swimmers in relation to psychological variables Sports Competition Anxiety (SCAT).

Variables	T-value	P-value	df	Sig. (2-tailed)
Swimmers Para-swimmers	5.48	0.00	50	0.05

Tabulated value at df 50= 2.000

*** Significance level at 0.05 (2-tailed)**

Table 6. revealed the Comparison of Sports Competition Anxiety (SCAT) between Swimmers and Para-swimmers. The value of 'T' is 5.48 which shows a significant deference between Swimmers and Para-swimmers.

The table above shows that the "T" value for Swimmers and Para-swimmers 5.48602, whereas the table value for the same is found to be 2.000 at 0.05 level of significance and standard error "p" value < 0.00. The calculated value of "T" being more than the table value, comparison is significant.

Discussion

The study aimed to explore and compare the psychological variables of Mental Toughness, Aggression, Competitive State Anxiety, and Will to Win among swimmers and para-swimmers. Descriptive statistics and T-tests were employed to analyse the data, revealing significant differences between the two groups in most variables.

The analysis of swimmers indicated a mean score of 9.21 in Will to Win, 81.36 in Aggression, 31.76 in Mental Toughness, and 19.80 in Anxiety, suggesting that these athletes generally possess strong competitive spirits, high aggression levels, moderate mental toughness, and relatively low anxiety levels. In comparison, para-swimmers exhibited slightly lower mean scores in Will to Win (8.6154) and Aggression (74.1154), but higher mean scores in Mental Toughness (37.00) and lower Anxiety (16.8462). These results imply that para-swimmers, despite facing more significant challenges, might have developed greater mental resilience.

Despite earlier research suggesting that Paralympians' psychological profiles are largely similar to those of able-bodied Olympic athletes (Dieffenbach & Statler, 2012), this study found that disabled swimmers reported lower self-confidence and higher pre-competition somatic anxiety compared to their able-bodied counterparts. These findings align with previous studies by Ferreira et al. (2007). The significant correlations observed between the psychological measures in this study suggest that the differences in self-confidence and somatic anxiety, as measured by the CSAI-2, are also reflected in scores on the self-confidence/achievement motivation and freedom from worry subscales of the ACSI-28 (Khodayari, Saiiari, & Dehghani, 2011).

These findings suggest that while swimmers generally have a stronger Will to Win and higher Aggression, para-swimmers demonstrate superior Mental Toughness, likely due to the unique challenges they face in both their personal lives and sporting careers. The higher anxiety levels

in swimmers could be attributed to the intense pressure and expectations associated with high-level competitions. The study's results align with existing literature, which indicates that physically challenged athletes often develop greater psychological resilience. The significant differences observed in Mental Toughness and Anxiety underscore the importance of tailored psychological support for both groups to optimize their performance.

Conclusion

This study offers a detailed look at the psychological profiles of swimmers and para-swimmers, focusing on Mental Toughness, Aggression, Competitive State Anxiety, and Will to Win. Swimmers showed a higher Will to Win and greater Aggression, while para-swimmers demonstrated notably higher Mental Toughness. Additionally, swimmers experienced higher levels of Competitive State Anxiety compared to para-swimmers, highlighting the distinct pressures each group faces in competition. These findings underscore the need for tailored coaching and psychological support to address the unique challenges of each group. The study enhances our understanding of psychological resilience in sports and calls for further research into how these variables evolve, which could lead to more effective training and support strategies.

Reference

1. Balite, P. H. M., Balite, P. H. M., Manalo, M. J. A., & Pagaduan, J. (2022). Psychophysiological responses to competition among university swimmers. *Journal of Human Sport and Exercise*, 17(4), 796–801. <https://doi.org/10.14198/jhse.2022.174.07>
2. Bardella Soares, B., & Winckler, C. (2023). How do para swimmers respond physiologically and cognitively when watching their performance at the Paralympic Games? A case study. *Cuadernos de Psicología del Deporte*, 23(1), 129–140. <https://doi.org/10.6018/cpd.499361>
3. Burton, D. (1988). Do anxious swimmers swim slower? Reexamining the elusive anxiety-performance relationship. *Journal of Sport & Exercise Psychology*, 10(1), 45–61. <https://doi.org/10.1123/jsep.10.1.45>
4. di Fronso, S., & Budnik-Przybylska, D. (2023). Special issue: Sport psychology interventions for athletes' performance and well-being. *International Journal of Environmental Research and Public Health*, 20(4), 3712. <https://doi.org/10.3390/ijerph20043712>

5. Dieffenbach, K. D., & Statler, T. A. (2012). More similar than different: The psychological environment of Paralympic sport. *Journal of Sport Psychology in Action*, 3(2), 109–118. <https://doi.org/10.1080/21520704.2012.683322>
6. Gonjo, T., & Olstad, B. H. (2020). Race analysis in competitive swimming: A narrative review. *International Journal of Environmental Research and Public Health*, 18(1), 69. <https://doi.org/10.3390/ijerph18010069>
7. Hagan, J. E., Jr, Pollmann, D., & Schack, T. (2017). Elite athletes' in-event competitive anxiety responses and psychological skills usage under differing conditions. *Frontiers in Psychology*, 8, 2280. <https://doi.org/10.3389/fpsyg.2017.02280>
8. Hagan, J. E., Jr, Pollmann, D., & Schack, T. (2017). Interaction between gender and skill on competitive state anxiety using the time-to-event paradigm: What roles do intensity, direction, and frequency dimensions play? *Frontiers in Psychology*, 8, 692. <https://doi.org/10.3389/fpsyg.2017.00692>
9. Khodayari, B., Saiiari, A., & Dehghani, Y. (2011). Comparison relation between mental skills with sport anxiety in sprint and endurance runners. *Procedia-Social and Behavioral Sciences*, 30, 2280–2284. <https://doi.org/10.1016/j.sbspro.2011.10.445>
10. Lim, T. H., Jang, C. Y., O'Sullivan, D., & Oh, H. (2018). Applications of psychological skills training for Paralympic table tennis athletes. *Journal of Exercise Rehabilitation*, 14(3), 367–374. <https://doi.org/10.12965/jer.1836198.099>
11. Lundqvist, C., Kenttä, G., & Raglin, J. S. (2011). Directional anxiety responses in elite and sub-elite young athletes: Intensity of anxiety symptoms matters. *Scandinavian Journal of Medicine & Science in Sports*, 21(6), 853–862. <https://doi.org/10.1111/j.1600-0838.2010.01102.x>
12. Öner, Ç. (2023). The psychology of Paralympic athletes: A bibliometric analysis. *International Journal of Disabilities Sports and Health Sciences*, 6(Special Issue 1- Healthy Life, Sports for Disabled People), 360-379. <https://doi.org/10.33438/ijdsbs.1358425>
13. Silva, A., Queiroz, S. S., Winckler, C., Vital, R., Sousa, R. A., Fagundes, V., Tufik, S., & de Mello, M. T. (2012). Sleep quality evaluation, chronotype, sleepiness, and anxiety of Paralympic Brazilian athletes: Beijing 2008 Paralympic Games. *British Journal of Sports Medicine*, 46(2), 150–154. <https://doi.org/10.1136/bjsm.2010.077016>
14. Smith, R. E., Schutz, R. W., Smoll, F. L., & Ptacek, J. T. (1995). Development and validation of a multidimensional measure of sport-specific psychological skills: The

- Athletic Coping Skills Inventory-28. *Journal of Sport & Exercise Psychology*, 17(4), 379–398.
15. Szájer, P., Toth, L., Szemes, Á., Nagy, N., Zala, B., Köteles, F., & Szabo, A. (2019). A comparative analysis of national Olympic swimming team members' and para-swimming team members' psychological profiles. *Cognition, Brain, Behavior. An Interdisciplinary Journal*, 23(4), 299-311. <https://doi.org/10.24193/cbb.2019.23.17>
 16. Tenenbaum, G., & Bar-Eli, M. (2007). Personality and intellectual capabilities in sport psychology. In D. Smith & M. Bar-Eli (Eds.), *Essential readings in sport and exercise psychology* (pp. 102–120). Human Kinetics.
 17. Trpkovici, M., Pálvölgyi, Á., Makai, A., Prémusz, V., & Ács, P. (2023). Athlete anxiety questionnaire: The development and validation of a new questionnaire for assessing the anxiety, concentration and self-confidence of athletes. *Frontiers in Psychology*, 14, 1306188. <https://doi.org/10.3389/fpsyg.2023.1306188>
 18. Vealey, R. S. (2007). Mental skills training in sport. In T. Gershon & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 285–309). Hoboken, NJ: John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118270011.ch13>