The Research of Medical Science Review
ISSN: 3007-1208 & 3007-1216 Volume 3, Issue 12, 2025

IS CRICKET SPORT PARTICIPATION LINKED TO STRONGER TRAIT SELF-CONTROL? A PERSONALITY-BASED INVESTIGATION ON VARSITY CRICKETERS AND NON-ATHLETE STUDENTS

Muhammad Arshad[1], Asif Ali[*2], Abdul Subhan[3], Fariq Ahmed[4]

[1,3]*BS Physical Education & Sports Sciences, Government College University Lahore, Punjab, Pakistan*
[*2]*Associate Professor, Department of Physical Education & Sports Sciences, Government College University Lahore, Punjab, Pakistan*
[4]*M.Phil. scholar, Department of Physical Education & Sports Sciences, Government College University Lahore, Punjab, Pakistan.*

[1]marshad03224385@gmail.com,[*2]asif.ali@gcu.edu.pk,[3]abdulsubhan2k1@gmail.com,
[4]fariq.ahmed@gcu.edu.pk

DOI: https://doi.org/10.5281/zenodo.18129835

Keywords
Big Five, Trait Self-Control, Neuroticism, Conscientiousness, Cricket Athletes, Sports Psychology, Non-athletes,

Article History
Received: 11 October 2025
Accepted: 21 November 2025
Published: 12 December 2025

Corresponding Author: *
Asif Ali

Abstract

The study examined the association between Big Five personality traits and Trait Self-Control (trait S-C) among varsity cricket players and their non-athlete counterparts. Cross-sectional research design was employed for this study and the data was collected form 346 participants. Among them 173 (mean age 20.47 and SD = 1.783) were varsity cricket players and other 173 were non athletes (mean age 20.47 and SD = 1.783) from eight universities. To assess personality and trait S-C, the BFI-10 and Brief Self-Control Scale were used. Hierarchical multiple regression was applied to determine the predictive power of the relationships. The findings showed that neuroticism was a significant negative predictor of trait S-C in both varsity cricket players and non-athletes. This suggested that individuals with high level of stress or emotional instability may have poorer trait S-C. However, only for non-athlete participants, conscientiousness positively predicted trait S-C. This suggested that the regulatory benefits of conscientiousness may be context dependent i.e. exerting stronger influence in academic settings rather than athletic environment. Whereas, all other personality traits showed no significant association with trait S-C. The study highlights the need for planned and structured psychological support in the university settings for individuals high in neuroticism to strengthen trait S-C across university populations.

INTRODUCTION

Trait self-control (trait S-C) can be defined as the capacity to regulate impulses and maintain goal-oriented focus despite the distractions (le Roux & Parry, 2022). It might be proposed as one of the primary predictors of success in competitive environments. For university students athletes and non-athletes' trait S-C might be an inevitable psychological skill, specifically for cricketers, who face unique stress due to dual career pathways i.e. they face academic burden along with rigorous training schedules and fatigue of training and competitions (Pheil, 2022). Sufficient trait S-C allows these athletes to overcome burnout symptoms of intensive physical and academic responsibilities in

elite sports environment. Student athletes encounter significant pressure to excel in their sports. Lack of trait S-C can negatively impact on both performance and well-being of an athlete (Guo et al., 2025). It often leads to impulsive decision making, emotional instability, academic challenges and inconsistent athletic performance.

Consequently, trait S-C has been recommended as an important factor for research regarding the athletic success (Aghababa et al., 2024). However, it is worth mentioning that comparative analyses of athletes and non-athletes yielded heterogeneous results, some studies suggested that sports develop discipline and emotional resilience (Popovych et al., 2022), while other studies reported that high pressure environments associated with competitive sports may heighten the anxiety and impulsive decisions making (Sánchez-Sánchez et al., 2023). Due to these divergent findings, there was a notable need to examine how individual differences, particularly personality traits shape trait S-C, particularly in students' athletes versus non athletes.

Examining the connection between trait S-C and personality may highlight important psychological strengths and weaknesses, since personality influences on how individuals handle pressure, stress and control behavior (Wennerhold & Friese, 2023). Personality traits, particularly the Big Five, have been identified as significant predictors of behavioral regulation and emotional stability (Zhu et al., 2023). Extraversion, conscientiousness, agreeableness, openness, and neuroticism are all personality qualities that have varying effects on the process of trait S-C. Understanding the results of trait S-C may especially be dependent on neuroticism and conscientiousness. High neuroticism has consistently been associated with elevated stress levels, emotional instability, impulsive decision making, all of these actors collectively compromise trait S-C capacity (Nilsen et al., 2024). On contrary, conscientiousness may be positively associated with trait S-C (Gao et al., 2021). Other personality traits such as extraversion and openness also contribute to trait S-C, potentially by the adaptive and motivational characteristics (Opelt & Schwinger, 2020). Identifying how BFPT differ between athletes and non-athletes' university students may provide insights on trait S-C in various performance contexts.

Differences in personality may also influence on how university athletes particularly cricket players, manage the demands of sports and academic pressure. High levels of patience, emotional stability, sustained focus, and long-term strategic decision-making are necessary for the sport of cricket (Hasaan et al., 2025). Due to these characteristics of sports, trait S-C can be suggested as important trait for cricket player to overcome the stress, frustration, anxiety and fatigue related to training and completions. Therefore, personality traits may act as either protective or risk factor for trait S-C in managing emotions, maintaining performance and behavior under pressure (Nigg, 2017). For example, student athletes with high level of conscientiousness and emotional stability may be more resilient and disciplined, whereas the individuals high in neuroticism may struggle with impulsivity and fluctuation in performance under high pressure.

Despite increased interest in psychological aspects of athletics, still there was limited knowledge of association between personality traits and trait S-C, particularly in varsity cricket players compared to non-athlete counterparts. University athletes are special because they must simultaneously deal with demands of competitive sports, social life and academic stress (Liu et al., 2024). Hence these athletes are a critical group to research personality related factors that influence trait S-C because of their unique traits. Examining how BFPTs influence trait S-C, in this population may reveal psychological strengths and risks along with areas where focused interventions could promote both academic and athletic development. Furthermore, comparing athletes to non-athletes sheds more light on whether involvement in sports mitigates the impact of personality on trait S-C.

Therefore, this research aims to empirically investigate the association between Big Five personality dimensions and trait S-C within a cohort of varsity cricket players. Furthermore, this study seeks to conduct a comparative analysis by comparing the athletic sample against a control group of non-athlete peers. By analyzing the dimensions of personality, the study seeks to understand whether participation in cricket affects the development of trait S-C and which personality trait functions as risk or protective factors in high

pressure environments. Understanding this relationship may contribute to athletic development strategies and psychological support programs, which may further enhance students' wellbeing and academic performance along with athletic performances.

Methodology

Design

The study investigated the association between BFI traits and trait S-C among varsity cricket players vs non athletes. The study implemented cross-sectional research design, which allowed the data to be collected form all individuals at a single point of time.

Population

The eligibility criteria specified that the athletes must be enrolled in a BS program and must have participated in national level cricket competitions. The exclusion criteria excluded the individuals who were not 18 to 25 years old. Data was collected form eight universities that had cricket teams and the athletes from these teams were representing their particular universities at intervarsity, national and international levels. The sample size was relatively small because only varsity athletes who had participated in national-level competitions and were part of their varsity team as well were included. This was a highly selective group, as many national-level players are not university students or team members. An equal number of non-athlete students were also selected as a control group of varsity cricket players.

Sample Size

Hence this study recruited a sample of 346 students out of which 173 were athletes with mean age 20.47 and standard deviation (SD = 1.783) and an equal number of 173 were non athletes with mean age 20.32 and standard deviation (SD = 1.961).

Data Collection Tool

The data was collected from a questionnaire that was consisted of three sections: demographics, Big Five Inventory Scale and Brief Self-Control Scale.

Section 1

Participants answered the following questions in the demographics section: the name of the university, marital status, residence, age, gender, study, days of training in a week, experience in sports and the highest level of competition.

Section 2

The BFI-10 was employed in the second section of the questionnaire. This tool was used to assess the personality traits of an individual. It was composed of 10 items and developed by Rammstedt and John (2007). The BFI-10 is a highly validated and reliable tool for assessing personality traits in a variety of population (Ahmad & Hussain, 2022; Ahmed & Hossain, 2020). Cronbach's Alpha score in this study was Extraversion =.807, agreeableness = .747, conscientiousness = .733, neuroticism = .804 and openness = .742 representing excellent validity and reliability for this study.

Section 3

The third section of the questionnaire consisted of Brief Self-control Scale, developed by Tangney et al. (2018). The shorter version consisting on 10 items was utilized to minimize administration time and increase response efficiency. The scale accesses general level of trait S-C on an individual including impulse control and maintaining discipline. The instrument demonstrated high validity in prior research. The scale also yielded robust reliability in the present study with Cronbach's alpha =0.82, which confirm its suitability for use with university cricket players (Brevers et al., 2017; Fung et al., 2020).

Procedure

In-person data collection method was employed. In adherence to the ethical standards, informed consent was obtained. All participants were briefed on the questionnaire protocols and were assured of the voluntary participation. The participants had right to withdraw at any time. Along with this data confidentiality was maintained for all respondents.

Data Analysis

Statistical analyses were conducted using IBM SPSS version 27. To assess the predictive validity,

Descriptive statistics and Hierarchical Multiple Linear Regression (HMLR) were executed. At $p < 0.05$, statistical significance was determined. Every regression assumption including normality, linearity, homoscedasticity, and residual independence was satisfied.

Results

Table 4.1: ANOVA Summary of hierarchical regression analysis for varsity cricketer athletes

Model		SS	df	MS	f	p
1	**Regression**	3.831	1	3.831	6.878	.010b
	Residual	95.246	171	0.557		
	Total	99.077	172			
2	**Regression**	50.161	6	8.360	28.371	.000c
	Residual	48.916	166	0.295		
	Total	99.077	172			

Note Abbreviations: SS (sum of squares), df (degrees of freedom), MS (mean square), F (F-value), p (p-value).

The ANOVA results indicated that both Model 1 and 2 were statistically significant for predicting the dependent variable. Model 1 was F = 6.878, p = .010 showed that the statistically significant portion of the variance in trait S-C among athletes.

The model 2 which included all BFI traits and age as predictors was also significant F = 28.371 and p = .000 that showed complete model, included BFI traits statistically significantly predicted trait S-C and explained even a larger amount of variance than model 1.

Table 4.2: ANOVA Summary of hierarchical regression analysis of varsity non-athlete students

Model		SS	df	MS	*f*	*p*
1	**Regression**	1.736	1	1.736	1.983	.161b
	Residual	149.669	171	0.875		
	Total	151.405	172			
2	**Regression**	74.714	6	12.452	26.953	.000d
	Residual	76.691	166	0.462		
	Total	151.405	172			

The ANOVA results indicated that the Model 1 did not statistically significantly predict the dependent variable, F= 1.983, p = .161.

The Model 2 which included all BFI traits as a predictor yielded a significant F = 26.953 and p = .000, that showed the complete model which included the BFI traits statistically significantly predicted the variance in trait S-C scores and explained even a larger amount of variance than model 1.

Table 4.3: Hierarchical Regression analysis for BFPTs and trait S-C in varsity cricketer athlete's student

Model		B	S.E.	β	t	p-value (Sig.)
1	**Age**	0.084	0.032	0.197	2.623	0.010
2	**Age**	0.039	0.024	0.091	1.588	0.114
	Extraversion	-0.048	0.037	-0.073	-1.292	0.198
	Agreeableness	-0.071	0.047	-0.085	-1.524	0.130
	Conscientiousness	-0.011	0.045	-0.014	-0.242	0.809
	Neuroticism	-0.505	0.041	-0.680	-12.196	0.000
	Openness	0.040	0.037	0.061	1.091	0.277

The results in table 4.4 yielded that in model 1, demographic character age (B = 0.084, *p* = .010) was statistically significant predictor of trait S-C.
In Model 2, age was not statistically significant (B = 0.039, *p* = .114) predictor however, among BFPTs only neuroticism was negatively significant (B = - 0.505, *p* = .000) predictor of trait S-C. This indicated that cricketer athletes having higher score in neuroticism tended to have lower score of trait S-C. On the other hand, remaining all the traits of personality, extraversion (*p* = .198), agreeableness (*p* = .130), conscientiousness (*p* = .809) and openness (*p* = .277), were not significant predictors of the trait S-C among varsity cricketer athletes.

Table 4.4: Hierarchical Regression analysis for BFPTs and trait S-C in varsity non-athletes' student

Model		B	S.E.	β	t	p-value
1	**Age**	0.051	0.036	0.107	1.408	0.161
2	**Age**	0.022	0.027	0.046	0.831	0.407
	Extraversion	-0.042	0.044	-0.056	-0.962	0.338
	Agreeableness	-0.011	0.046	-0.013	-0.240	0.810
	Conscientiousness	0.123	0.046	0.156	2.668	0.008
	Neuroticism	-0.515	0.047	-0.643	-10.871	0.000
	Openness	0.045	0.048	0.054	0.941	0.348

The results of table 4.5 showed that in the model 1, the demographic characteristic age (*p* = .161) was not statistically significant predictor of trait S-C among varsity non-athlete students. In Model 2, the demographic characteristic age (*p* = .407) was still not significant predictor. Among BFPTs only two traits of personality likewise, conscientiousness and neuroticism were significant predictors of trait S-C. Conscientiousness (B = 0.123, *p* = .008) was positively associated with trait S-C. This indicated that non-athlete varsity students having high score of conscientiousness tended to have higher score to trait S-C. Whereas, neuroticism (B = - 0.515, *p* = .000), was negatively associated with trait S-C. This indicated that non-athletes having higher score in neuroticism tended to have lower score of trait S-C. Remaining all other traits of personality likewise, extraversion (*p* = .338), agreeableness (*p* = .810) and openness (*p* = .348), were not significant predictors of trait S-C among non-athlete varsity students.

Discussion

The main goal of this study was to examine the association between BFPT and trait S-C comparing the university level cricket players with their non athlete peer students. No previous research has directly examined association of personality with trait S-C specially for the cricket athletes and non-athletes within the same academic settings. Hence the study

has the valuable contribution to sports psychology and personality research field. The results of this study represented that neuroticism was negative significant predictor of trait S-C among varsity cricketer athletes and non-athlete students. This indicated that those cricketer athletes and non-athletes having higher score in neuroticism tended to have lower scores of trait S-C. Among varsity students who were not athletes, conscientiousness was positively correlated with trait S-C. This indicated that non-athlete varsity students having high score of conscientiousness tended to have higher score of trait S-C.

This study found that neuroticism was negatively associated with trait S-C among varsity cricketers and non-athlete students. These results indicated that the cricket players and non-athlete varsity students who tend to be emotionally unstable, anxious or prone to stress have lower level of trait S-C. The trait S-C possessed by the cricketer's athletes and non-athlete's varsity students was influenced by neuroticism. Earlier studies also supported these findings likewise, Nilsen et al. (2024) found higher neuroticism linked to lower trait S-C while conducting a study on general population. In another study, Hertz (2022) reported that neuroticism negatively predicted trait S-C and that it further leaded to maladaptive behavior. This study supports our interpretation that neuroticism undermines trait S-C in athletes and non-athletes.

Similarly, Yan et al. (2024) in his study on more than 700 Chinese students found neuroticism reduces trait S-C and create problematic behaviors, which also aligns with our findings. On a large college sample Rada et al. (2025) argued that neuroticism undermines self-efficacy and social approach. This also aligns with our observation of lower trait S-C for high neuroticism participants. However not all literature was uniform for example a study by Forestier et al. (2022) on the Ego Depletion theory, trait S-C was a limited resource that varies according to load and exhaustion rather than being exclusively influenced by personality attributes. This emphasized that even with lower neuroticism non athletes or varsity cricketers could exhibit low trait S-C if they are cognitively exhausted.

Our other key finding that the conscientiousness was positively associated with trait S-C for non-athletes was also supported by previous literature. In the similar work of Kiendl et al. (2025), the authors established that conscientiousness was the strongest personality predictor of trait S-C. They further argued that organizational and disciplined nature of these individuals often overlaps the regulatory mechanism required for high trait S-C. This finding mirrors the results severed in the non-athlete's group in the current study. Similarly, Solomons and Mthembu (2023) in a samples of 480 military student reported conscientiousness correlated positively with all dimensions of trait S-C which shows conscientiousness was positively associated with trait S-C across multiple disciplines.

In another study Barros et al. (2022) also reported that conscientiousness positively predicted broader self-regulation in university students. Moreover, Story et al. (2025) reported the goal-oriented nature of conscientiousness in which individuals increase the trait S-C as a mechanism for disciplined and committed actions. On contrary, Werner et al. (2019) critiqued that trait S-C measures may overlap with conscientiousness thus the positive associations may be actually reflecting the conscientiousness rather than a distinct trait S-C capacity. Similarly, Kiendl et al. (2025) reported no effect of conscientiousness on the goal dimension in some models hence pointing that positive association with trait S-C may be depended on goal-oriented behavior instead of actual trait S-C.

Practical Implications

The present findings offer several practical implications for university athletic programs and student support services. Firstly, the findings regarding the neuroticism trait and its negative association with trait S-C in both varsity cricketers and non-athletes underscores the need for psychological skills training programs. For example, conduction of stress-management workshops, emotional regulation coaching, and mindfulness programs might support students who experience higher emotional instability. Secondly, as conscientiousness was a stronger positive predictor of trait self-control among non-athlete students only. Therefore, it can be proposed that student development offices must design tailored interventions that may employ conscientiousness-

related behaviors to improve structured self-regulatory routines.

Directions for Future Research

Future research should focus on larger and more diverse participants for finding the relationship between personality traits and trait S-C. Longitudinal or experimental research plan could also be adopted for better understanding the factors which impact on trait S-C of athletic populations. Future research should also consider adopting cognitive load techniques to understand how cognitive burnout like fatigue, stress and training intensity influence on trait S-C. Such expanded research would provide deeper insights into how personality and athletic participation might jointly shape self-regulation in youth and university populations.

Conclusion

This study was one of the first to compare the relationship between Big Five Personality traits and trait S-C among varsity cricket players and their non athlete counterparts. The findings revealed that neuroticism was significantly negatively associated with trait S-C for both groups. Whereas, conscientiousness positively predicted trait S-C in non-athletes only. These results highlight the importance of personality in shaping trait S-C across different populations. The results also demonstrate that participation in athletics don't overcome the negative effects of neuroticism.

REFERENCES

Aghababa, A., Rahmanian, Z., Abdollahzadeh, H., & Mousavi, S. A. (2024). Comparison of self-control and early maladaptive schemas in athletes according to sports and demographic characteristics: Comparison of self-control and early maladaptive schemas in athletes. *International Journal of Applied Behavioral Sciences*, *11*(4), 45-57.

Ahmad, S., & Hussain, S. (2022). Big five inventory-version 10: A two-minute personality measurement tool in Urdu. *J Pak Med Assoc*, *72*(9), 1726-1730.

Ahmed, O., & Hossain, M. A. (2020). Psychometric Properties of the Bangla Version of the Big Five Personality Inventory-10. *Chittagong University Journal of Biological Sciences*, 71-80.

Barros, A., Simão, A. M. V., & Frisson, L. (2022). Self-regulation of learning and conscientiousness in Portuguese and Brazilian samples. *Current Psychology*, *41*(11), 7835-7842.

Brevers, D., Foucart, J., Verbanck, P., & Turel, O. (2017). Examination of the validity and reliability of the French version of the Brief Self-Control Scale. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, *49*(4), 243.

Forestier, C., de Chanaleilles, M., Boisgontier, M. P., & Chalabaev, A. (2022). From ego depletion to self-control fatigue: A review of criticisms along with new perspectives for the investigation and replication of a multicomponent phenomenon. *Motivation Science*, *8*(1), 19.

Fung, S.-f., Kong, C. Y. W., & Huang, Q. (2020). Evaluating the dimensionality and psychometric properties of the brief self-control scale amongst chinese university students. *Frontiers in Psychology*, *10*, 2903.

Gao, K., Zhang, R., Xu, T., Zhou, F., & Feng, T. (2021). The effect of conscientiousness on procrastination: The interaction between the self-control and motivation neural pathways. *Human Brain Mapping*, *42*(6), 1829-1844.

Guo, F., lei Guo, K., & Wu, T. (2025). The effect of physical exercise on learning burnout in college students: the chain mediating role of self-control and coping styles.

Hasaan, A., Zoroya, N., & Nida Aslam, K. (2025). Cricket, culture and loyalty: the passion for Karachi Kings despite poor performance. *Sport, Business and Management: An International Journal*, *15*(2), 225-244.

Hertz, A. (2022). The Association Between Neuroticism, Self-esteem, and Peer Interactions and Disordered Eating and Body Checking Behavior in Female College Athletes.

Kiendl, K., Wenzel, M., Kleinke, K., & Hennecke, M. (2025). Conscientiousness, trait self-control, and neuroticism predict individual differences in the variability of goal dimensions. *European Journal of Personality*, *39*(2), 211-232.

le Roux, D. B., & Parry, D. A. (2022). The role of self-regulation in experiences of digital distraction in college classrooms. In *Digital distractions in the college classroom* (pp. 92-119). IGI Global Scientific Publishing.

Liu, M., Shi, B., & Gao, X. (2024). The way to relieve college students' academic stress: The influence mechanism of sports interest and sports atmosphere. *BMC psychology*, *12*(1), 327.

Nigg, J. T. (2017). Annual Research Review: On the relations among self-regulation, self-control, executive functioning, effortful control, cognitive control, impulsivity, risk-taking, and inhibition for developmental psychopathology. *Journal of child psychology and psychiatry*, *58*(4), 361-383.

Nilsen, F. A., Bang, H., & Røysamb, E. (2024). Personality traits and self-control: The moderating role of neuroticism. *Plos one*, *19*(8), e0307871.

Opelt, F., & Schwinger, M. (2020). Relationships between narrow personality traits and self-regulated learning strategies: Exploring the role of mindfulness, contingent self-esteem, and self-control. *AERA Open*, *6*(3), 2332858420949499.

Pheil, G. (2022). The academic work-life balance of entry-level athletic training students and its implications.

Popovych, I., Radul, I., Hoian, I., Ohnystyi, A., Doichyk, M., & Burlakova, I. (2022). Athletes' resilience typology: a comparative analysis of individual and team sports. *Journal of Physical Education and Sport*, *22*(9), 2036-2046.

Rada, C., Dina, M.-M., & Lunga, R.-A. (2025). The impact of personality traits and the mediating role of self-efficacy and self-control on criminogenic behavior among Romanian inmates: a psychological perspective. *Scientific Reports*, *15*(1), 18885.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of research in Personality*, *41*(1), 203-212.

Sánchez-Sánchez, L. C., Franco, C., Amutio, A., García-Silva, J., & González-Hernández, J. (2023). Influence of mindfulness on levels of impulsiveness, moods and pre-competition anxiety in athletes of different sports. Healthcare,

Solomons, T. I. D., & Mthembu, O. S. (2023). The effect of Conscientiousness Openness to Experience and Neuroticism on Military Identity in a South African military university: The moderating role of Selflessness.

Story, P. A., Bailey, Z., & Foo, N. G. (2025). The role of conscientiousness in meeting psychological needs: A whole trait theory perspective. *Personality and Individual Differences*, *240*, 113138.

Tangney, J. P., Boone, A. L., & Baumeister, R. F. (2018). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. In *Self-regulation and self-control* (pp. 173-212). Routledge.

Wennerhold, L., & Friese, M. (2023). Challenges in the conceptualization of trait self-control as a psychological construct. *Social and Personality Psychology Compass*, *17*(3), e12726.

Werner, K. M., Milyavskaya, M., Klimo, R., & Levine, S. L. (2019). Examining the unique and combined effects of grit, trait self-control, and conscientiousness in predicting motivation for academic goals: A commonality analysis. *Journal of research in Personality*, *81*, 168-175.

Yan, Y., Chai, X., Zheng, W., Wang, M., Feng, X., Heng, C., Du, J., & Zhang, Q. (2024). The effect of neuroticism on mobile phone addiction among undergraduate nursing students: a moderated mediation model. *BMC psychiatry*, *24*(1), 810.

Zhu, Z., Qin, S., Dodd, A., & Conti, M. (2023). Understanding the relationships between emotion regulation strategies and Big Five personality traits for supporting effective emotion regulation tools/interventions design. *Advanced Design Research*, *1*(1), 38-49.