Personality and Motor Fitness: A Study of High School Boys Kho-Kho Players from Tumkur District

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***Abstract*—This study aimed to examine the relationship between personality traits and motor fitness among high school male Kho-Kho players in Tumkur District. The sample comprised 60 players aged 13 to 16 years, selected based on their participation in state and national-level tournaments. Motor fitness variables assessed included speed (50-meter Sprint Test), endurance (600-yard Run Test), and flexibility (Sit-and-Reach Test). Personality traits were evaluated using Eysenck's Personality Inventory, focusing on extroversion, introversion, and emotional stability. Statistical analyses, including Pearson's correlation and ANOVA, were employed to explore relationships between variables. The findings indicated that 95% of players were ambiverts, with no significant correlations between personality traits and motor fitness variables. However, significant variability was observed in endurance levels among players. These results suggest that while personality traits may not directly influence motor fitness, there is a notable variation in endurance among players, highlighting the importance of targeted endurance training to enhance performance.**

***Index Terms*—Kho-Kho, personality traits, motor fitness, high school Endurance, Inventory, ambiverts, Tumkur.**

I. INTERDOUCTION

Kho-Kho is a fast-paced sport emphasizing natural physical development, requiring speed, endurance, and stamina to sustain performance over four innings. Players rely on skills like sprints, dodging, diving, zigzag running, and abrupt stops, demanding advanced psycho-neuromuscular coordination, particularly in the abdominal and spinal regions.

The game also requires perceptual-motor skills, quick reflexes, strategic intelligence, and precise vision. However, repetitive movements like sudden accelerations, zigzag running, and intricate footwork can pose injury risks. To enhance performance and reduce injuries, coaches should focus on strengthening core muscles—back, abdomen, neck, and legs—and employ varied training methods tailored to the demands of the sport (Bharani & Jyoti, 2020).

Sports contribute significantly to the physical, mental, and social development of individuals. Key determinants of athletic performance include personality traits and motor fitness. Characteristics such as extroversion, introversion, and emotional stability play a vital role in shaping an athlete's behavior, decision-making abilities, and resilience in competitive environments (Eysenck & Eysenck, 1985). Motor fitness, which includes key components such as speed, flexibility, and endurance, plays a crucial role in achieving success in physically demanding sports like Kho-Kho (Shephard, 1997). Kho-Kho, a traditional Indian game, emphasizes agility, quick decision-making, and effective team coordination. Beyond improving physical fitness, the sport fosters essential psychological attributes such as teamwork, leadership, and resilience (Singh et al., 2018).

High school boys involved in Kho-Kho often develop specialized motor skills and personality traits shaped by the sport's physical and psychological demands. Understanding the interaction between personality traits and motor fitness in young Kho-Kho players is essential for designing effective training programs and enhancing performance outcomes (Patil & Desai, 2015).

This study focuses on high school Kho-Kho players from Tumkur District, investigating the relationship between their personality traits and motor fitness. By examining this connection, the research provides insights into how psychological and physical factors influence athletic performance in Kho-Kho. The findings aim to assist coaches and educators in creating tailored development programs that build both the mental resilience and physical abilities of

young athletes, promoting their overall growth (Roberts et al., 2007).

A. History and Origin of Kho-Kho

Kho-Kho is one of India's most popular traditional sports, believed to have evolved from the simple game of "Run Chase," which involves chasing and tagging. Its origins are rooted in Maharashtra, where it was traditionally played on chariots and called *Rathera*. The game has been particularly popular among Marathi-speaking communities.

Kho-Kho is a simple, inexpensive, and thrilling sport requiring physical fitness, strength, speed, and stamina. It emphasizes dodging, feinting, and controlled bursts of speed, fostering qualities like obedience, discipline, sportsmanship, and teamwork.

The formalization of Kho-Kho began with the Deccan Gymkhana club in Pune. In 1935, the Akhil Maharashtra Shareerika Shikshan Mandal published the first set of rules, with subsequent amendments to improve gameplay.

Referred to as the "Game of Chase," Kho-Kho embodies the principle of "Active Chase," a concept deeply rooted in Indian traditions. Historical references suggest its existence even before the Mahabharata, with the phrase "putting Kho to someone" symbolizing blocking and stopping progress. This highlights Kho-Kho's cultural and historical significance in India.

II. LITERARTURE REVIEW

Dr. Yallappa M (2020) investigated the impact of yoga on flexibility and agility among 40 Kabaddi and Kho-Kho players. Participants were divided into an experimental group (N = 20), which engaged in six weeks of yogic exercises, and a control group (N = 20), which followed their regular routine. Pre- and post-tests assessed flexibility (sit-and-reach test) and agility (shuttle run test). The experimental group showed significant improvements in both measures compared to the control group, highlighting the effectiveness of yoga in enhancing physical performance. The study confirms yoga as a valuable addition to training regimens for athletes.

Ghodke and Robade (2021) investigated the link between psychological well-being and physical performance in 80 male Kho-Kho players across national, state, and district levels. Performance metrics included agility, speed, reaction ability, endurance, and flexibility. The study found that positive mental health significantly influenced athletic success, while a negative correlation emerged between playing ability and key physical fitness components. This highlights the crucial role of psychological well-being in Kho-Kho performance.

Singh et al. (2018) emphasized the psychological and physical benefits of participating in traditional Indian sports like Kho-Kho. The study found that involvement in Kho-Kho fosters key psychological attributes such as teamwork, leadership, and resilience, while simultaneously enhancing physical capabilities like agility and endurance. These insights are closely aligned with research examining the combined impact of personality traits and motor fitness on athletic performance, reinforcing the importance of Kho-Kho in promoting holistic athlete development.

Patil and Desai (2015) explored the relationship between personality traits and athletic performance, emphasizing attributes such as extroversion and emotional stability. The study highlighted the psychological challenges encountered by Kho-Kho players, providing valuable insights into how personality traits influence their performance on the field. The findings underscore the critical role of psychological factors in shaping athletic success, particularly in high-intensity, team-oriented sports like Kho-Kho. This research serves as a foundation for understanding the interplay between mental attributes and physical performance in traditional sports contexts.

III. PURPOSE OF THE STUDY

The purpose of this study is to examine the relationship between personality traits and motor fitness among high school boys Kho-Kho players in Tumkur District.

IV. MATERIALS AND METHODS

A. Subjects and Sampling

The study involved 60 high school male Kho-Kho players from Tumkur District, aged between 13 to 16 years. Participants were selected based on their participation in state-level and national-level school Kho-Kho tournaments, with the sample size determined by the availability of players.

SELECTION OF VARIABLES AND PROCDURE

Category	Variables	Tools/Tests Used	Measuring Criteria
Motor Fitness Variables	Speed	50-meter Sprint Test	Time taken to cover 50 meters, recorded in seconds.
	Endurance	600-yard Run Test	Time taken to complete 600 yards, recorded in seconds/min.
	Flexibility	Sit-and-Reach Test	Distance reached, measured in centimetres/inches.
Personality Traits	Extroversion	Eysenck's Personality Inventory	Score on extroversion scale.
	Introversion	Eysenck's Personality Inventory	Score on introversion scale.
	Emotional Stability	Eysenck's Personality Inventory	Score on emotional stability scale.

Data Collection: All tests were conducted in a controlled environment under standardized conditions to ensure consistency and reliability. The data collection process adhered to ethical research practices.

B. Statistical Analysis

The data were analyzed statistically, apart from the descriptive statistics, Pearson's product moment correlation technique was used to find out the relationship between dependent variable i.e., Kho-Kho performance and independent variables i.e., motor fitness and personality.

V. RESULTS

TABLE 1 Extroversion-Introversion Dimension of Kho-Kho Players

		Frequency	Percent
Valid	Ambi	57	95.0
	Extro	3	5.0
	Indro	0	0
	Total	60	100.00

Table 1 shows that among the 60 Kho-Kho players, 57 (95%) were identified as ambiverts, while only 3 (5%) were classified as introverts. No players were found to be extroverts. This highlights that the majority of players possess ambivert traits, which may contribute to their adaptability and performance in team dynamics required for Kho-Kho.

Table 2 Neuroticism of Kho-Kho Players

		Frequency	Percent
Valid	Normal	26	43.3
	Neurotic	34	56.7
	EWB	0	0
	Total	60	100.00

Table 2 shows that among the 60 Kho-Kho players, 43.3% (26 players) were categorized as normal, while 56.7% (34 players) were identified as neurotic. This indicates that a slight majority of players exhibit neurotic tendencies, which could influence their emotional responses and performance under pressure in competitive settings.

Table.3 Chi-Square Test of Kho-Kho Players

	Extro	Neuro
Chi-Square	48.600	1.067
df	1	1
Asymp. Sig.	.000	.302

Table 3 shows a significant chi-square value for extroversion ($\chi 2=48.600$, p=0.000\chi^2 = 48.600, p = 0.000$\chi 2=48.600$,p=0.000), indicating a dominant frequency of ambiverts among Kho-Kho players. In

contrast, neuroticism ($\chi 2=1.067, p=0.302$\chi^2 = 1.067, p = 0.302$\chi 2=1.067, p=0.302$) shows no significant frequency difference.

Table .4 Relationship Between Extroversion – Introversion & Motor Fitness Variables

		EXTROVERSION	NEUROTICISM
DASH_30M	Pearson Correlation	-.120	.137
	Sig. (2-tailed)	.360	.297
	N	60	60
SIT_REACH	Pearson Correlation	-.013	-.189
	Sig. (2-tailed)	.920	.148
	N	60	60
BEEP_TEST	Pearson Correlation	-.078	-.066
	Sig. (2-tailed)	.556	.617
	N	60	60

Table 4 shows the relationship between neuroticism and motor fitness variables among 60 Kho-Kho players. The obtained correlation coefficients indicate the following:

- 30m Dash: $R=0.137, p=0.297$R = 0.137, p = 0.297$R=0.137, p=0.297 (non-significant).
- Sit and Reach: $R=-0.189, p=0.148$R = -0.189, p = 0.148$R=-0.189, p=0.148 (non-significant).
- Beep Test: $R=-0.066, p=0.617$R = -0.066, p = 0.617$R=-0.066, p=0.617 (non-significant).

These results show that neuroticism is not significantly related to any of the motor fitness variables, indicating that emotional stability does not directly influence motor performance in this sample.

Table 5 ANOVA Results for the Comparison of Personality Traits Among Kho-Kho Players

Personality Trait	Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Extroversion	Between Groups	11.641	2	5.821	1.106	0.338
	Within Groups	300.009	57	5.263		
	Total	311.650	59			
Neuroticism	Between Groups	35.016	2	17.508	1.295	0.282
	Within Groups	770.634	57	13.520		
	Total	805.650	59			

Table 5 presents the ANOVA results comparing personality traits among Kho-Kho players. For extroversion, the between-groups difference was not significant ($F=1.106, p=0.338$F = 1.106, p = 0.338$F=1.106, p=0.338), indicating no meaningful variation in extroversion levels among the groups. Similarly, for neuroticism, the between-groups difference was also not significant ($F=1.295, p=0.282$F = 1.295, p = 0.282$F=1.295, p=0.282). These results suggest that the personality traits of

extroversion and neuroticism do not significantly differ among the Kho-Kho players in this study.

Table 6 ANOVA Results for The Comparison of Motor Fitness to the Kho-Kho Players

Motor Fitness Variable	Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)
30m Dash	Between Groups	0.915	2	0.457	2.497	0.091
	Within Groups	10.442	57	0.183		
	Total	11.356	59			
Sit and Reach	Between Groups	16.283	2	8.142	0.792	0.458
	Within Groups	586.300	57	10.286		
	Total	602.583	59			
Beep Test	Between Groups	7.693	2	3.847	8.540	0.001
	Within Groups	25.675	57	0.450		
	Total	33.369	59			

Table 6 shows the ANOVA results for motor fitness variables among Kho-Kho players. The results indicate no significant differences in 30m Dash (F=2.497,p=0.091F = 2.497, p = 0.091F=2.497,p=0.091) and Sit and Reach (F=0.792,p=0.458F = 0.792, p = 0.458F=0.792,p=0.458). However, a significant difference was observed in the Beep Test (F=8.540,p=0.001F = 8.540, p = 0.001F=8.540,p=0.001), suggesting variation in endurance performance among the groups, while speed and flexibility remained consistent.

VI. DISCUSSION

The study investigated the relationship between personality traits and motor fitness variables among high school Kho-Kho players in Tumkur District. The findings revealed that the majority of players (95%) exhibited ambivert traits, with no players identified as extroverts and a small proportion (5%) categorized as introverts. This dominance of ambiverts suggests adaptability and balanced psychological traits that are well-suited for team sports like Kho-Kho.

Neuroticism was present in 56.7% of the players, indicating a tendency toward emotional variability, which may influence performance under pressure. However, the Chi-square test showed no significant frequency differences in neuroticism categories, suggesting that emotional stability does not significantly vary within the group.

In terms of motor fitness, the ANOVA results showed no significant differences in speed (30m Dash) and flexibility (Sit and Reach) among the groups. However, a significant difference was observed in endurance (Beep Test) (F=8.540,p=0.001F = 8.540, p = 0.001F=8.540,p=0.001), highlighting the variability in stamina levels among players. The relationship between personality traits and motor fitness variables was found to be non-significant, as indicated by the Pearson correlations.

VII. CANCLUSION

Based on the study results, it can be concluded that the majority of high school male Kho-Kho players in Tumkur District exhibit ambivert personality traits, reflecting a balance between extroversion and introversion. However, no significant correlations were found between personality traits (extroversion and neuroticism) and motor fitness variables such as speed, endurance, and flexibility. Among motor fitness measures, endurance showed significant variability among players, as indicated by the Beep Test, suggesting differences in cardiovascular fitness. In contrast, speed and flexibility displayed relative uniformity across the participants. These findings highlight the need for coaches and trainers to prioritize endurance training to address variability and enhance overall performance. Additionally, while personality traits may not directly influence motor fitness, understanding individual characteristics can help tailor training programs to suit each player's unique needs.

VIII. RECOMMENDATIONS

1. Conduct similar studies on players from different age groups, genders, and regions to validate the findings across diverse populations.
2. Include additional psychological variables such as motivation, stress management, and teamwork to understand their impact on motor fitness and performance.
3. Perform longitudinal studies to assess the long-term effects of personality traits and motor fitness on athletic success.
4. Use advanced assessment tools for both psychological traits and motor fitness variables to improve data accuracy and precision.
5. Expand the scope of motor fitness variables to include power, balance, and coordination for a more comprehensive analysis.
6. Carry out experimental studies to evaluate the effectiveness of customized psychological and physical training interventions.
7. Explore the influence of team dynamics and interpersonal relationships on performance in team sports like Kho-Kho.
8. Compare findings with other sports to identify common and unique trends in personality traits and motor fitness.

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