Full Length Research Article

Establishing Performance Norms for Skill-Related Physical Fitness among Table Tennis Athletes

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ABSTRACT
Table tennis is a dynamic racket sport requiring exceptional skill-related physical fitness components including speed, agility, power, coordination, reaction time, and balance. This study aimed to establish performance norms for skill-related physical fitness parameters among competitive table tennis athletes and examine age and gender-related differences. A cross-sectional research design was employed with 96 table tennis athletes categorized into junior, senior, and elite groups. Physical fitness assessments included handgrip strength, vertical jump, horizontal jump, sprint tests, modified agility test, flexibility, and reaction time measurements. Results revealed significant age-related improvements in all physical parameters except flexibility, with males demonstrating superior performance in strength, power, and speed components while females showed higher flexibility scores. Performance norms were established across different age categories providing benchmark standards for talent identification and training program development. The study concludes that comprehensive physical fitness assessment protocols are essential for optimizing table tennis performance, and the established norms provide valuable reference standards for coaches and sports scientists working with Indian table tennis athletes.

Keywords: Table tennis, Physical fitness, Performance norms, Skill-related fitness, Athletic assessment

1. INTRODUCTION

Table tennis, globally recognized as the second most popular racket sport, demands a unique combination of technical mastery, tactical acumen, and exceptional physical conditioning (Pradas et al., 2013). With approximately 300 million participants worldwide and over 40 million competitive players, table tennis has evolved from a recreational activity into a highly demanding athletic discipline requiring comprehensive physical preparation (Picabea et al., 2017). The sport's transformation, particularly following rule modifications including increased ball size and material changes, has significantly intensified gameplay duration and physical demands placed upon athletes (Zagatto et al., 2010). Skill-related physical fitness encompasses specific components crucial for table tennis performance, including agility, balance, coordination, power, reaction time, and speed (Kondric et al., 2013). These attributes enable athletes to execute rapid directional changes, produce powerful strokes, maintain positional balance, and respond instantaneously to opponents' actions during intense rallies. Research demonstrates that elite table tennis

players exhibit superior levels of these fitness components compared to recreational players, highlighting their critical role in competitive success (Picabea et al., 2017; Faber et al., 2014).

Despite table tennis's global popularity and India's growing presence in international competitions, there exists a significant gap in establishing standardized performance norms for Indian table tennis athletes. Performance norms serve as essential benchmarks for talent identification, monitoring training adaptations, evaluating program effectiveness, and making informed selection decisions (Fernandez-Fernandez et al., 2014). Without population-specific normative data, coaches and sports scientists face challenges in objectively assessing athletes' physical readiness, identifying developmental priorities, and designing evidence-based training interventions tailored to individual needs. The absence of comprehensive normative data for Indian table tennis athletes presents practical limitations for systematic talent development programs. International standards may not accurately reflect the anthropometric characteristics, training backgrounds, and developmental patterns specific to

Indian athletes. Furthermore, establishing age-specific and gender-specific norms becomes particularly crucial during adolescent development when rapid physiological changes occur and training adaptations vary considerably (Fernandez-Fernandez et al., 2019). Contemporary research emphasizes the multifactorial nature of table tennis performance, where physical fitness interacts synergistically with technical skills and tactical knowledge. Studies have documented significant correlations between physical fitness parameters and competitive performance outcomes, particularly in speed, power, and agility domains (Picabea et al., 2017; Kondrič et al., 2013). Understanding these relationships through normative assessment provides scientific foundation for holistic athlete development approaches integrating physical conditioning with sport-specific training. This research addresses the critical need for establishing culturally relevant and scientifically validated performance norms for Indian table tennis athletes. The study's significance extends beyond academic contribution, offering practical applications for national sports programs, academy systems, and individual coaching practices. By providing quantitative benchmarks across multiple fitness dimensions, this research empowers stakeholders to make data-driven decisions enhancing athlete development efficiency and competitive outcomes in Indian table tennis.

2. LITERATURE REVIEW

Physical fitness assessment in racket sports has gained substantial research attention over the past two decades, with table tennis emerging as a focal point for sport-specific physical profiling. Picabea et al. (2017) conducted comprehensive investigations analyzing physical fitness relationships with competition performance in Spanish table tennis players, revealing that handgrip strength, vertical jump performance, and sprint capabilities significantly correlated with competitive success. Their findings established foundational understanding regarding which physical attributes most strongly predict performance outcomes, informing subsequent research directions in table tennis fitness assessment. The physiological demands of table tennis have been extensively characterized through metabolic and biomechanical analyses. Research demonstrates that table tennis predominantly relies on anaerobic alactic and aerobic energy systems, with high-intensity rallies requiring rapid ATP-PCr resynthesis while sustained match play demands efficient aerobic capacity for recovery between points (Zagatto et al., 2010). Understanding these metabolic requirements provides theoretical justification for comprehensive fitness testing

protocols encompassing both explosive power and endurance components.

Gender differences in table tennis physical fitness have been systematically documented across multiple studies. Recent research by Pradas et al. (2022) examining elite-level players revealed males consistently demonstrated superior performance in vertical jump, handgrip strength, maximum oxygen consumption, and sprint speed, while females exhibited significantly greater flexibility. These sex-specific patterns necessitate separate normative standards for male and female athletes, ensuring assessment protocols accurately reflect biological differences in physical capacity development. Age-related progression in physical fitness among young table tennis players represents another critical research domain. Fernandez-Fernandez et al. (2019) documented systematic improvements in strength, power, and speed capabilities from childhood through late adolescence, with peak development rates occurring during puberty. However, flexibility showed minimal age-related variation, suggesting different developmental trajectories across fitness components. These findings underscore the importance of age-stratified performance norms facilitating developmentally appropriate training prescription.

The relationship between playing style and physical fitness profiles has emerged as an intriguing research area. Pradas et al. (2023) identified distinct fitness characteristics among offensive, defensive, and mixed-style players, with offensive players demonstrating superior explosive power and aerobic capacity while defensive players showed enhanced flexibility and sustained movement capability. This specialization suggests that optimal physical preparation may vary according to tactical approach, though comprehensive baseline fitness remains universally important. Methodological considerations in table tennis fitness testing have been refined through extensive validation research. Kondrič et al. (2013) established reliability and validity parameters for sport-specific test batteries, demonstrating that protocols combining generic fitness assessments with table tennis-specific movement tasks provide most comprehensive performance evaluation. Their work emphasized importance of standardized testing conditions, appropriate warm-up procedures, and trained assessors to ensure measurement accuracy and reproducibility.

Recent technological advances have expanded fitness assessment capabilities in table tennis. Studies employing force platforms, timing gates, and motion capture systems have provided precise quantification of physical parameters previously estimated through observational methods. These technological

enhancements enable detection of subtle performance changes resulting from training interventions, though practical considerations regarding equipment accessibility remain relevant for widespread implementation (Faber et al., 2014). The relationship between physical fitness and injury prevention in table tennis athletes has received increasing research attention. Studies indicate that balanced development across fitness components, particularly addressing bilateral asymmetries in handgrip strength and lower limb power, reduces injury risk associated with asymmetrical movement patterns characteristic of racket sports. Regular fitness monitoring thus serves dual purposes of performance optimization and injury prevention. Despite extensive international research, limited studies have specifically examined physical fitness norms for Indian table tennis athletes. Existing literature predominantly represents European, East Asian, and Latin American populations, potentially limiting applicability to Indian athletes who may exhibit different anthropometric characteristics, training histories, and developmental patterns. This gap highlights urgent need for population-specific normative research establishing relevant benchmarks for Indian table tennis development programs.

3. OBJECTIVES

1. To establish comprehensive performance norms for skill-related physical fitness components among Indian table tennis athletes across different age categories and competitive levels.
2. To analyze gender-based differences in skill-related physical fitness parameters and determine age-related developmental patterns in physical performance among competitive table tennis players.

4. METHODOLOGY

This investigation employed a descriptive cross-sectional research design to establish performance norms for skill-related physical fitness among table tennis athletes. The study was conducted during the competitive season between January and March 2024 at Sports Authority of India centers and registered table tennis academies across multiple Indian states including Maharashtra, Karnataka, Tamil Nadu, and West Bengal, ensuring geographical representation of the athlete population. The participant sample comprised 96 competitive table tennis athletes selected through purposive sampling technique based on specific inclusion criteria. Athletes were required to have minimum two years of structured table tennis training, active participation in state or national level competitions, age between 12-30 years, absence of musculoskeletal injuries during preceding six months, and voluntary informed consent. The sample was stratified into three age categories including junior athletes aged 12-16 years, senior athletes aged 17-21 years, and elite athletes aged 22-30 years, with gender-balanced representation within each category ensuring comprehensive normative data generation. Sample size determination followed statistical power analysis ensuring adequate representation for establishing reliable performance benchmarks across categories.

Physical fitness assessment utilized validated standardized testing protocols previously employed in international racket sports research. The comprehensive test battery included handgrip strength measurement using calibrated digital dynamometer with athletes maintaining standardized standing position and elbow flexed at ninety degrees, vertical countermovement jump with arm swing assessed via contact mat system measuring maximum jump height, horizontal countermovement jump measuring maximum forward distance achieved from standing position, five-meter and ten-meter sprint tests employing electronic timing gates positioned at waist height, modified agility test requiring rapid directional changes through standardized cone configuration, sit-and-reach flexibility test following standardized protocol with three trials recorded, and reactive agility assessment measuring response time to visual stimulus using specialized equipment. All testing equipment underwent calibration verification before data collection commenced. Data collection followed rigorous standardized procedures ensuring measurement reliability and validity. Testing sessions were conducted during morning hours between 9:00-11:00 AM controlling for circadian rhythm effects on physical performance. Athletes completed identical standardized warm-up protocol consisting of light aerobic activity, dynamic stretching, and sport-specific movements lasting approximately fifteen minutes. Each test was demonstrated by trained assessors before athlete performance, with clear verbal instructions provided in athletes' preferred language. Multiple trials were conducted for each test with adequate recovery periods between attempts, and best performance scores were recorded for statistical analysis. Testing was completed across two non-consecutive days minimizing fatigue effects on performance outcomes.

Statistical analysis employed descriptive statistics calculating means, standard deviations, ranges, and percentile distributions for all physical fitness variables across age and gender categories. Independent samples t-tests examined gender differences in physical performance parameters with significance level set at p less than 0.05. One-way

analysis of variance with post-hoc Bonferroni correction assessed age-related differences across athlete categories. Effect sizes were calculated using Cohen's d to quantify magnitude of differences between groups. Percentile norms were established using 10th, 25th, 50th, 75th, and 90th percentile values providing comprehensive performance benchmarks. Pearson correlation coefficients analyzed relationships among different fitness components. All statistical procedures were conducted using SPSS version 26.0 ensuring accurate data analysis and interpretation.

5. RESULTS

The comprehensive physical fitness assessment of 96 table tennis athletes revealed substantial insights into performance capabilities across different age categories and genders. The following tables present detailed normative data for skill-related physical fitness components.

Table 1: Anthropometric Characteristics of Table Tennis Athletes by Age Category

Age Category	N	Age (years)	Height (cm)	Weight (kg)	BMI (kg/m²)
Junior (12-16)	32	14.2 ± 1.4	159.8 ± 8.3	48.6 ± 9.2	18.9 ± 2.1
Senior (17-21)	36	19.1 ± 1.3	169.4 ± 7.6	62.4 ± 10.8	21.7 ± 2.4
Elite (22-30)	28	25.3 ± 2.8	171.2 ± 8.1	67.8 ± 11.4	23.1 ± 2.7

Table 1 demonstrates progressive increases in anthropometric parameters across age categories among competitive table tennis athletes. Junior athletes displayed significantly lower height, weight, and body mass index compared to senior and elite categories, reflecting expected developmental patterns during adolescence and early adulthood. Statistical analysis revealed significant differences between junior and senior groups for all anthropometric variables with moderate to large effect sizes. Senior athletes exhibited intermediate values between junior and elite categories, while elite athletes demonstrated highest mean values across all anthropometric measurements. These findings align with normative growth patterns documented in athletic populations and provide baseline anthropometric reference standards for Indian table tennis athletes across competitive levels.

Table 2: Handgrip Strength and Power Performance by Age and Gender

Category	Gender	Handgrip (kg)	Vertical Jump (cm)	Horizontal Jump (cm)
Junior	Male	28.4 ± 4.2	38.6 ± 5.3	182.4 ± 15.2
Junior	Female	22.6 ± 3.8	32.8 ± 4.7	165.7 ± 13.8
Senior	Male	42.5 ± 5.6	46.2 ± 6.1	215.8 ± 18.4
Senior	Female	32.8 ± 4.4	38.4 ± 5.2	187.6 ± 16.2
Elite	Male	48.7 ± 6.2	51.3 ± 6.8	238.5 ± 21.6
Elite	Female	37.2 ± 5.1	42.7 ± 5.9	204.3 ± 18.7

Table 2 illustrates substantial gender and age differences in strength and explosive power capabilities among table tennis athletes. Male athletes consistently demonstrated superior handgrip strength, vertical jump height, and horizontal jump distance compared to female counterparts across all age categories, with differences reaching statistical significance. Age progression revealed systematic improvements in all power parameters, with elite athletes achieving highest performance levels. The magnitude of gender differences increased with advancing age, particularly evident in handgrip strength where elite males exceeded elite females by approximately thirty percent. These normative values provide essential benchmarks for evaluating strength and power development in table tennis training programs and identifying athletes requiring targeted physical conditioning interventions.

Table 3: Speed and Agility Performance Across Categories

Category	Gender	5m Sprint (sec)	10m Sprint (sec)	Modified Agility Test (sec)
Junior	Male	1.18 ± 0.08	1.94 ± 0.12	9.86 ± 0.74
Junior	Female	1.24 ± 0.09	2.02 ± 0.14	10.42 ± 0.82
Senior	Male	1.08 ± 0.06	1.78 ± 0.09	8.74 ± 0.63
Senior	Female	1.14 ± 0.07	1.86 ± 0.11	9.28 ± 0.71
Elite	Male	1.02 ± 0.05	1.69 ± 0.08	8.12 ± 0.58

Elite	Female	1.09 ± 0.06	1.78 ± 0.09	8.76 ± 0.66

Table 3 reveals critical speed and agility performance standards for table tennis athletes demonstrating clear developmental progression and gender-based distinctions. Sprint performance showed systematic improvement with advancing age and competitive level, with elite male athletes achieving fastest times in both five-meter and ten-meter distances. The modified agility test measuring multi-directional movement capability similarly demonstrated age-related enhancement, reflecting improved neuromuscular coordination and movement efficiency with training maturation. Gender comparisons indicated males performed significantly faster across all speed and agility measures, though performance gaps narrowed in elite categories suggesting training effects may partially mitigate biological differences. These findings emphasize importance of dedicated speed and agility training throughout athlete development continuum.

Table 4: Flexibility and Reaction Time Performance

Category	Gender	Sit-Reach (cm)	Reaction Time DS (ms)	Reaction Time NDS (ms)
Junior	Male	24.8 ± 4.6	268 ± 32	294 ± 38
Junior	Female	28.4 ± 5.2	256 ± 28	282 ± 34
Senior	Male	25.6 ± 4.8	242 ± 26	265 ± 31
Senior	Female	29.8 ± 5.6	234 ± 24	258 ± 29
Elite	Male	26.2 ± 5.1	228 ± 22	248 ± 27
Elite	Female	31.4 ± 6.1	218 ± 20	238 ± 25

Table 4 presents flexibility and reaction time performance revealing interesting patterns diverging from other physical fitness components. Unlike strength and speed parameters, flexibility showed minimal age-related progression but consistent gender differences with females demonstrating superior sit-and-reach performance across all categories. This finding suggests flexibility development follows different trajectories compared to strength-dependent attributes. Reaction time measurements for both dominant side and non-dominant side demonstrated systematic improvement with advancing age and competitive level, reflecting enhanced neural processing speed and perceptual-motor development through training exposure. Notably, females exhibited slightly faster reaction times compared to males in corresponding age categories, particularly evident in elite athletes where differences reached statistical significance. These normative data highlight importance of including flexibility and reaction time assessments in comprehensive physical fitness evaluation protocols.

Table 5: Percentile Norms for Vertical Jump Performance (cm)

Age Category	10th	25th	50th	75th	90th
Junior Male	32.4	36.2	38.8	42.1	45.6
Junior Female	27.8	30.5	32.9	36.2	38.4
Senior Male	38.6	42.3	46.4	50.8	54.2
Senior Female	32.1	35.8	38.6	42.3	45.8
Elite Male	42.8	47.5	51.5	56.2	60.4
Elite Female	35.4	39.2	42.9	47.1	51.2

Table 5 provides detailed percentile distributions for vertical jump performance enabling precise interpretation of individual athlete capabilities relative to normative standards. The percentile framework allows coaches and sports scientists to categorize athletes' performance levels ranging from below-average to exceptional within their respective age and gender categories. For instance, junior male athletes achieving vertical jumps exceeding forty-five centimeters rank within ninetieth percentile representing exceptional explosive power for their developmental stage. Conversely, athletes performing below tenth percentile values may require targeted plyometric training interventions to improve power output. These percentile norms facilitate individualized training program design and objective progress monitoring throughout athlete development pathways.

Table 6: Correlation Matrix Among Physical Fitness Components

Variables	Handgrip	V-Jump	H-Jump	5m Sprint	Agility	Flexibility
Handgrip	1.00	0.74**	0.68**	-0.61**	-0.58**	0.12

V-Jump	0.74**	1.00	0.82**	-0.76**	-0.71**	0.18
H-Jump	0.68**	0.82**	1.00	-0.72**	-0.68**	0.15
5m Sprint	-0.61**	-0.76**	-0.72**	1.00	0.84**	-0.08
Agility	-0.58**	-0.71**	-0.68**	0.84**	1.00	-0.11
Flexibility	0.12	0.18	0.15	-0.08	-0.11	1.00

**Note: ** = $p < 0.01$; DS = Dominant Side; NDS = Non-Dominant Side

Table 6 demonstrates interrelationships among physical fitness components revealing important patterns for holistic athletic development. Strong positive correlations emerged between handgrip strength, vertical jump, and horizontal jump performances, indicating these power-related attributes develop synergistically through common training stimuli. Similarly, sprint speed and agility showed high correlation coefficients suggesting shared underlying neuromuscular determinants. Notably, flexibility demonstrated minimal correlations with other fitness components, indicating its independence from strength and power characteristics and necessitating dedicated flexibility training rather than expecting transfer effects from other conditioning modalities. These correlation patterns provide scientific rationale for integrated training approaches targeting multiple interrelated fitness components while maintaining specific emphasis on flexibility development through appropriate stretching protocols.

7. DISCUSSION

The establishment of comprehensive performance norms for skill-related physical fitness among Indian table tennis athletes represents a significant advancement in sport-specific assessment methodology and evidence-based training program development. The current investigation successfully addressed critical gaps in existing literature by providing population-specific normative data across multiple age categories and genders, thereby fulfilling the study's primary objectives of establishing benchmark standards and analyzing developmental patterns in physical performance. The anthropometric characteristics documented in this study align with international patterns observed in competitive table tennis populations, though Indian athletes demonstrated slightly lower mean values compared to European and East Asian counterparts (Pradas et al., 2022). This finding suggests potential genetic and nutritional factors influencing physical development trajectories, emphasizing the necessity of establishing culturally relevant normative standards rather than relying exclusively on international benchmarks. The progressive increase in body mass index from junior through elite categories reflects expected maturation patterns, though maintaining optimal body composition remains crucial for table tennis performance where excessive weight may compromise agility and movement efficiency.

Handgrip strength emerged as a discriminating physical attribute across age categories and genders, with elite male athletes demonstrating values comparable to international standards reported in recent literature. The substantial gender differences observed, particularly in senior and elite categories, reflect well-documented sexual dimorphism in upper body strength development influenced by testosterone-mediated muscle mass accretion during and following puberty (Fernandez-Fernandez et al., 2019). These findings support implementing gender-specific training prescriptions with males potentially benefiting from higher-intensity resistance training protocols while females may require modified approaches accounting for physiological differences in strength development capacity. Vertical and horizontal jump performance demonstrated consistent age-related improvements supporting the first objective regarding developmental pattern identification. The observed progression from junior through elite categories reflects enhanced neuromuscular coordination, motor unit recruitment efficiency, and structural adaptations resulting from years of systematic training exposure (Faber et al., 2014). Interestingly, the rate of improvement appeared greatest during the transition from junior to senior categories, coinciding with peak adolescent growth and development periods. Coaches should capitalize on this sensitive period by implementing appropriate plyometric training programs facilitating optimal power development while monitoring growth-related injury risks.

Speed and agility capabilities showed remarkable development across competitive levels, with elite athletes achieving performance times substantially superior to junior counterparts. The modified agility test results particularly emphasized the sport-specific movement demands of table tennis requiring rapid multi-directional changes, lateral shuffling, and explosive acceleration patterns characteristic of competitive play (Picabea et al., 2017). The narrowing gender gap in agility performance at elite levels suggests that targeted training interventions can partially overcome biological predispositions, highlighting the importance of dedicated agility

development throughout athlete careers. The flexibility findings presented intriguing contrasts to other physical fitness components, showing minimal age-related progression but consistent gender superiority favoring females. This pattern diverges from strength and power parameters suggesting flexibility development follows independent biological and training-influenced pathways. The relatively stable flexibility levels across age categories may reflect insufficient emphasis on flexibility training within current table tennis programs, representing a potential area for intervention optimization (Kondrič et al., 2013). Enhanced flexibility contributes to injury prevention, improved range of motion for stroke execution, and movement efficiency, warranting greater integration into systematic training protocols.

Reaction time improvements across age categories reflect crucial perceptual-motor skill development essential for table tennis excellence. The marginally faster reaction times observed in female athletes, particularly at elite levels, contrasts with common assumptions regarding male superiority in reactive capabilities. This finding may relate to sport-specific adaptations where females develop compensatory perceptual skills offsetting potential power disadvantages, or reflect sample-specific characteristics requiring further investigation across larger populations. The correlation analyses revealed important insights regarding fitness component interrelationships informing integrated training program design. The strong correlations among strength, power, and speed attributes support implementing combined training approaches targeting these synergistic capabilities simultaneously. Conversely, flexibility's independence from other components emphasizes its unique developmental requirements necessitating dedicated training attention rather than expecting collateral improvements from general conditioning programs.

The established percentile norms provide practical tools for coaches and sports scientists enabling objective athlete evaluation, talent identification, and individualized training prescription. Athletes performing below twenty-fifth percentile for their category may require intensive physical conditioning emphasis, while those exceeding seventy-fifth percentile demonstrate adequate physical preparation potentially allowing greater training volume allocation toward technical and tactical development. These benchmarks facilitate systematic monitoring of training adaptations and objective assessment of intervention effectiveness over longitudinal development periods. Limitations of the current investigation include the cross-sectional design

precluding longitudinal tracking of individual development trajectories, the purposive sampling approach potentially introducing selection bias, and the geographical concentration of participants primarily from urban training centers possibly limiting generalizability to rural athlete populations. Future research should address these limitations through prospective longitudinal designs, probability sampling methods, and inclusive recruitment across diverse geographical and socioeconomic contexts. Additionally, incorporating physiological assessments such as aerobic capacity testing and sport-specific performance measures would provide more comprehensive athlete profiling capabilities.

The practical implications of this research extend to multiple stakeholders within Indian table tennis development systems. National sports organizations can utilize these norms for talent identification and selection processes, academy programs can implement standardized assessment protocols monitoring athlete development, and individual coaches can make informed decisions regarding training emphasis and competitive readiness. The establishment of evidence-based performance standards represents crucial infrastructure supporting systematic athlete development approaches essential for enhancing India's competitive standing in international table tennis.

7. CONCLUSION

This investigation successfully established comprehensive performance norms for skill-related physical fitness among Indian table tennis athletes, addressing critical gaps in population-specific normative data and providing valuable reference standards for talent identification, athlete monitoring, and training program development. The study documented substantial age-related improvements and gender-based differences across multiple physical fitness components including strength, power, speed, agility, flexibility, and reaction time. Elite athletes demonstrated superior performance across all parameters except flexibility, validating the progressive development of physical capabilities through systematic training exposure. The established percentile distributions enable objective categorization of individual athlete capabilities relative to normative benchmarks, facilitating individualized training prescription and performance monitoring. The findings emphasize the necessity of comprehensive physical fitness assessment protocols incorporating diverse components reflecting the multifaceted demands of competitive table tennis. These normative standards provide essential infrastructure supporting evidence-based approaches

to athlete development and contribute valuable scientific knowledge to the growing body of literature examining physical fitness requirements in racket sports. Future research should extend these findings through longitudinal designs tracking developmental trajectories, expanded sample sizes improving statistical power, and integration of physiological and biomechanical assessments providing more complete athlete profiling capabilities for optimizing competitive performance outcomes in Indian table tennis.

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