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Cloistered and coalesce upshot of yogic practices and Orangetheory fitness training on speed performance among jet set swimmers

Resultado aislado y combinado de las prácticas yóguicas y el entrenamiento fitness de Orangetheory sobre el rendimiento de velocidad en nadadores jet set

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Abstract

Speed and acceleration are crucial components of most sports. There are various ways to train for these, both in and out of the weight room. Outside the weight room, resisted and assisted methods are used in training programmes to enhance performance. This study was undertaken to determine whether yogic practices, Orangetheory Fitness training, and coalesce of yogic practices and Orangetheory Fitness training could be effective methods for improving speed, specifically the 50m run. Sixty male swimmers from various swimming academies in Thiruvananthapuram, Kerala (mean ± SD: age 18 ± 4.2 years, height 153 ± 14 cm, weight 56 ± 14 kg) were randomly divided into four groups: yogic practices, Orangetheory Fitness training, coalesce of yogic practices & Orangetheory Fitness training, and a control group. All swimmers trained five days per week for eight weeks. A 50m sprint was performed before and after the training period. The speed performance of the experimental groups significantly increased ($p < 0.05$), while no significant changes were observed in the control group. The combination of yogic practice and Orangetheory Fitness training proved to be more efficient than the yogic practices and Orangetheory fitness training program.
Keywords: yogic practice, Orangetheory fitness training, coalesce group, speed, Jet set.

Resumen

La velocidad y la aceleración son componentes cruciales en la mayoría de los deportes. Existen diversas formas de entrenarlas, tanto dentro como fuera de la sala de pesas. Fuera de la sala de pesas, se emplean métodos resistidos y asistidos en los programas de entrenamiento para mejorar el rendimiento. Este estudio se llevó a cabo con el objetivo de determinar si las prácticas yóguicas, el entrenamiento de Orangetheory Fitness y la combinación de ambas podrían ser métodos eficaces para mejorar la velocidad, específicamente en la carrera de 50 metros. Sesenta nadadores varones de diferentes academias de natación en Thiruvananthapuram, Kerala (media ± DE: edad 18 ± 4.2 años, altura 153 ± 14 cm, peso 56 ± 14 kg) fueron divididos aleatoriamente en cuatro grupos: prácticas yóguicas, entrenamiento de Orangetheory Fitness, combinación de prácticas yóguicas y entrenamiento de Orangetheory Fitness, y un grupo de control. Todos los nadadores entrenaron cinco días por semana durante ocho semanas. Se realizó una carrera de 50 metros antes y después del período de entrenamiento. El rendimiento de velocidad de los grupos experimentales aumentó significativamente ($p < 0.05$), mientras que no se observaron cambios significativos en el grupo de control. La combinación de prácticas yóguicas y entrenamiento de Orangetheory Fitness resultó ser más eficaz que los programas individuales de prácticas yóguicas o de entrenamiento de Orangetheory Fitness.

Palabras clave: práctica yóguica, entrenamiento de Orangetheory fitness, grupo combinado, velocidad, Jet set.

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Introduction

In the fast-paced, ever-changing world of the 21st century, people constantly seek physical vitality, mental clarity, and a high-performance lifestyle (Hossain, 2023; Ravi & Divya, 2024). Among the globally mobile and high-achieving, often referred to as the "Jet Set," the need for effective and impactful health and fitness routines has become more apparent than ever. This group, recognised for their busy schedules, frequent travel, and high-performance demands, requires wellness strategies that support physical strength and endurance while also enhancing mental stability and emotional health (Henriksen et al., 2020; Ojeda-Aravena et al., 2021). In this context, the importance of integrative fitness methods such as Yogic practices and high-intensity interval training like Orangetheory Fitness has risen considerably, combining traditional and modern approaches to optimise human performance (Gavanda et al., 2022; Schmidt, 2018).

Rooted in ancient Indian philosophy, yoga has developed over centuries into a universal discipline that transcends cultural and geographical boundaries (Pandey, 2024). It is more than just physical exercises; it is a holistic practice that encompasses physical postures (asanas), breath control (pranayama), concentration (dharana), and meditation (dhyana), all aimed at harmonising the body, mind, and spirit. Often described as both a science of life and an art of living, yoga is systematic and purposeful, designed to elevate consciousness (Nagesh, 2023). It introduces rhythm to the body, melody to the mind, harmony to the soul, and orchestrates a symphony of life (Youvan, 2024). By cultivating inner peace, bliss, and wisdom, yoga fosters overall well-being (Rawat et al., 2024).

Unlike yoga, which emphasises mindfulness and flexibility, modern fitness programmes such as Orangetheory Fitness (OTF) adopt a data-driven, performance-based approach to health (Bosse, 2021). OTF is a high-intensity interval training (HIIT) regimen that combines cardiovascular, strength, and endurance exercises within a structured and time-efficient format (Herrod, 2020; Ravi & Kalimuthu, 2025). It features circuit-style workouts involving treadmill running, rowing, and weightlifting, often tracked via heart rate monitors to maximise performance and calorie expenditure (Osterberg & Melby, 2000). Each session, led by a certified coach, motivates participants through a 60-minute workout designed to boost post-exercise oxygen consumption (EPOC), which accelerates metabolism and fat burning even after the workout ends (Hanief et al., 2025). The group

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setting, real-time performance tracking, and diverse programming are key factors driving Orangetheory's popularity among those seeking practical, measurable results.

What distinguishes these two disciplines is not only their methods but also their philosophical bases. Yoga is introspective, meditative, and internally transformative, focusing on long-term adaptability and health sustainability (Payne, 2020). It encourages practitioners to connect with themselves, build discipline, and develop a deep sense of awareness and mindfulness (Lawlor, 2016). It boosts the parasympathetic nervous system, helping recovery, reducing stress, and enhancing overall resilience (Vanderhasselt & Ottaviani, 2022). Conversely, Orangetheory is extroverted and goal-driven, emphasising physical challenge, competitive spirit, and high-intensity effort (Schmidt, 2018). It activates the sympathetic nervous system and aims to help individuals push their limits, resulting in clear improvements in strength, speed, and endurance (Daniela et al., 2022).

The combination of yoga and Orangetheory Fitness provides an effective way to enhance overall performance, especially in speed (Kressbach, 2024). Speed, a vital aspect of motor fitness, is highly regarded in both sports and everyday life (Di Domenico & D'Isanto, 2019). It refers to the ability to perform a movement or cover a distance in the shortest possible time. In today's fast-paced world, where efficiency is synonymous with success, the pursuit of increased speed extends beyond sports and fitness, affecting both professional and personal areas. As Kaur (2019) notes, speed is more than just a physical skill; it is crucial to modern life, where people seek to complete tasks quickly, respond promptly to stimuli, and make rapid decisions under pressure.

Biometrically, speed relies on neuromuscular coordination, explosive power, and muscular strength, all of which can be improved through specific training (Ravi & Kalimuthu, 2025). Orangetheory Fitness's high-intensity drills, plyometrics, and interval sessions activate fast-twitch muscle fibres, boost anaerobic capacity, and quicken reaction times- all vital for increasing speed (Ravi & Divya, 2024). It enhances flexibility, balance, coordination, and proprioception, which are essential for agility and smooth movement. Additionally, practising pranayama (breath control) and dhyana (meditation) increases focus, reaction speed, and mental calmness, indirect yet important factors that support speed. Yoga also positively affects the autonomic nervous system, helping to maintain

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homeostasis, speed up recovery, and reduce cortisol levels, which are vital for consistent performance over time (Naragatti, 2025).

The dual strategy of integrating yoga with Orangetheory Fitness provides a comprehensive approach to achieving and maintaining peak speed (Schmidt, 2018). This method targets both muscular and cardiovascular aspects of speed, while also supporting the mental and neural processes that enable quick reactions and smooth movement. Whether preparing for a boardroom meeting or catching a flight, the ability to move, think, and act quickly and efficiently is a valuable skill (Lehmann, 2024). Furthermore, contemporary research supports the complementary nature of traditional and modern training methods (Challa et al., 2021). Studies have shown that yoga interventions can significantly improve neuromuscular coordination, reaction time, and agility among both athletes and non-athletes (Naragatti, 2025). When these two are practised together, the likelihood of full physiological and psychological adaptation increases, fostering a well-rounded individual who is not only fast but also focused, resilient, and balanced (Norton-Gardner et al., 2025).

This study, titled “Cloistered and Coalesce: The Effects of Yogic Practices and Orangetheory Fitness on Speed Performance among High-Performers,” explores how these two distinct yet potentially complementary training methods affect speed in elite individuals. "Cloistered" denotes the inward-focused aspect of yoga, focusing on solitary, mindful, and spiritual engagement. Conversely, the study also aims to explore how modern lifestyle demands affect training effectiveness, particularly among a population that is often mobile, time-pressed, and goal-oriented. It is hypothesised that combining yoga and Orangetheory Fitness could result in greater improvements in speed performance than either method alone, due to the combination of explosive movements with recovery and physical effort with mindfulness.

Methodology

Research Design

The present study used a randomised controlled trial (RCT) design to investigate the effects of yogic practices, Orangetheory Fitness training, and a combined approach involving both methods on the speed performance of male jet set swimmers. This experimental design was selected for its ability to minimise bias and enable direct

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comparison among different intervention groups and a control group. Participants were randomly allocated to one of four groups: Yogic Practices, Orangetheory Fitness Training, a combined intervention group (comprising both Yogic Practices and Orangetheory Training), and a Control group that received no specific intervention. The intervention lasted for eight weeks, with each group training five days per week. The main variable measured was speed, assessed using a standardised 50-metre sprint test administered before and after the intervention period.

Participants

Participants in this study were healthy male swimmers aged 18-22 years, selected from various swimming academies in Thiruvananthapuram, Kerala. Inclusion criteria required that each participant engage in at least 60 minutes of sports activity per week and had no prior history of cardiovascular diseases or acute musculoskeletal, neurological, or orthopaedic disorders. This ensured a homogeneous group of physically active individuals capable of safely undergoing both yoga-based and high-intensity fitness interventions. After initial screening, eligible participants were randomly assigned to four groups corresponding to the study's intervention categories. Care was taken to balance baseline characteristics such as age, fitness level, and swimming experience across all groups.

Intervention

The training program spanned 8 weeks, with each group participating in its respective intervention 5 times per week. The Yogic Practices group attended 30-minute sessions led by a certified yoga instructor. Each session began with a short prayer, followed by a structured routine of physical postures (asanas) and breathing techniques (pranayama). The asanas practised included Brahma Mudra, Viparitakarni, Sarvangasana, Matsyasana, Ardha Halasana, Halasana, Bhujangasana, Dhanurasana, Paschimottanasana, Yoga Mudra, Supta Vajrasana, and Ardha Matsyendrasana. The breathing practices focused on Anulom Vilom, Kapalbhati, and Ujjayi pranayama, all of which are known to enhance respiratory efficiency and concentration while promoting physical recovery and relaxation.

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Participants assigned to the Orangetheory Fitness Training group underwent high-intensity interval training (HIIT) modelled on the principles of the Orangetheory Fitness program. The training included a variety of cardiovascular and strength exercises, such as treadmill running, rowing, and resistance training. Each session was designed to alternate between high-intensity efforts and short recovery periods, to elevate heart rate into the target zone to stimulate post-exercise oxygen consumption (EPOC). The training schedule and intensity levels were carefully outlined and consistently followed throughout the eight-week program.

The third group, the combined or coalesced intervention group, received a hybrid training program consisting of 15 minutes of yoga and 15 minutes of Orangetheory Fitness training during each 30-minute session. This structure aimed to provide the physical and cardiovascular benefits of HIIT while also incorporating the flexibility, breath control, and neuromuscular coordination benefits associated with yoga. The integration of both training modalities into a single session sought to create a synergistic effect, maximising overall performance enhancement with a focus on speed. The Control group did not receive any specific intervention or training during the experimental period. Participants in this group continued with their usual swimming practices and lifestyle routines. Their performance in the 50-meter sprint test served as a baseline comparison for the experimental groups.

Data Analysis

To assess the impact of various training interventions on speed performance, a standardised 50-metre sprint (Nagel, 1976) test was conducted with all participants before and after the eight-week intervention period. The collected data were analysed using Analysis of Covariance (ANCOVA), which allowed adjustment for pretest differences and focused on posttest results. This statistical method helped determine the effectiveness of each training approach by comparing adjusted mean scores. When ANCOVA showed statistically significant differences among the groups, Scheffé's post hoc test was performed to identify which specific pairs of group means differed. A confidence level of 0.05 was set for all statistical procedures, meaning that any result with a p-value below 0.05 was deemed statistically significant.

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Potential Ethical Issues

All ethical considerations were addressed correctly throughout the study to protect the safety and rights of participants. Before starting the research, informed consent was obtained from each participant after explaining the study's aims, procedures, possible benefits, and any foreseeable risks. Participants were made aware of their right to withdraw at any time without facing negative consequences. Confidentiality was rigorously maintained, with all personal and performance data used solely for research purposes. Medical clearance was secured to confirm that all participants were fit to take part in physical training. Additionally, all interventions, especially the high-intensity fitness sessions, were carried out under expert supervision to minimise any risk of injury or health issues. The study adhered to ethical standards for human research and upheld the highest levels of participant care and well-being throughout the experimental process.

Table I: High-intensity interval training protocol (Orangetheory Fitness Training)

Weeks	Warm ups (min)	HIIT Training	Interval (min)	HIIT Training	Cool down (min)	Total training time (min)
1	10	1	4	2	5	25
2	10	1	4	3	5	30
3	10	1	4	4	5	35
4	10	1.5	4	2	5	26
5	10	1.5	4	3	5	31.5
6	10	1.5	4	4	5	37
7	10	2	5	3	5	36
8	10	2	4	4	5	43

Results

The data collected from the experimental and control groups, before and after the experiment, on selected variables were analysed statistically using analysis of covariance (ANCOVA). This method was employed to identify any differences among the adjusted post-test means on the chosen criterion variables, analysed separately. Whenever the obtained F-ratio for the simple effect was significant, Scheffe's test was used as a post hoc test to determine differences between means, if any. In all cases, a significance level of 0.05 was set. The Analysis of covariance (ANCOVA) on the Speed of the experimental groups and the control group has been analysed and presented in Table II.

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Table II: Analysis of Covariance for Experimental and Control Groups on Speed

Certain Variables	Adjusted Posttest Means				Source of Variance	Sum of Squares	df	Mean Squares	F' Ratio
	Yogic Practices Group	Orangetheory Fitness Training Group	Coalesce of Yogic Practice & OFTG	Control Group					
Pre Test	7.73±0.11	7.73 ± 0.11	7.76 ± 0.12	7.72 ± 0.25	B	0.02	3	0.01	0.21
					W	1.49	56	0.03	
Post Test	7.04±0.37	6.88 ± 0.35	6.56 ± 0.33	7.68 ± 0.18	B	9.94	3	3.31	30.40*
					W	6.10	56	0.11	
Adjusted Post Test	7.04	6.88	6.55	7.69	B	10.25	3	3.42	33.43*
					W	5.62	55	0.10	

* Significant at.05 level of confidence, Scores in Seconds

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

Table II shows that the pretest means and standard deviations for Speed in the yogic practices group, Orangetheory fitness training group, a combination of yogic practice and Orangetheory fitness training, and the control group are 7.73±0.11, 7.73±0.1, 7.76±0.12, and 7.72±0.25, respectively. The obtained F-ratio of 0.21 for the adjusted posttest mean is less than the table value of 2.76 for df 3 and 56, which is required for significance at the 0.05 level of confidence. The posttest means and standard deviations for Speed within the same groups are 7.04±0.37, 6.88±0.35, 6.56±0.33, and 7.68±0.18, respectively. The obtained F-ratio of 30.40 for the adjusted posttest mean exceeds the table value of 2.76 for df 3 and 56, indicating significance at the 0.05 level of confidence.

Furthermore, the table shows that the adjusted post-test mean values of Speed for the yogic practices group, Orangetheory fitness training group, the combination of yogic practice & Orangetheory fitness training, and the control group are 7.04, 6.88, 6.55, and 7.69, respectively. The obtained F-ratio of 33.43 for the adjusted post-test means exceeds the table value of 2.78 for df = 3 and 55, which is required for significance at the 0.05 level of confidence. To determine which of the paired means had a significant difference, Scheffe's test was applied as a Post hoc test, and the results are presented in Table III.

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Table III: The Scheffe's test for the differences between the adjusted posttest paired means on Speed

Certain Variables	Adjusted Post-test Means				Mean Difference	Confidence Interval
	Yogic Practices Group	Orangetheory Fitness Training Group	Coalesce of Yogic Practice & OFTG	Control Group		
speed	7.04	6.88			0.16	0.34
	7.04		6.55		0.50*	0.34
	7.04			7.69	0.65*	0.34
		6.88	6.55		0.34*	0.34
		6.88		7.69	0.81*	0.34
			6.55	7.69	1.14*	0.34

* Significant at.05 level of confidence

Table-3 shows that the adjusted posttest means differences on Speed between Yogic Practices Group and Coalesce of Yogic Practice & Orangetheory Fitness Training Group, Yogic Practices Group and Control group, Orangetheory Fitness Training Group and Coalesce of Yogic Practice & Orangetheory Fitness Training Group, Orangetheory Fitness Training Group and Control group & Coalesce of Yogic Practice & Orangetheory Fitness Training Group and Control group are 0.50, 0.65, 0.34, 0.81 and 1.14 respectively. They are greater than the confidence interval value 0.34, which shows significant differences at 0.05 level of confidence. Furthermore, the Table shows that the adjusted posttest mean difference on Speed between the Yogic Practices Group and the Orangetheory Fitness Training group is 0.16, which is less than the confidence interval value of 0.34, indicating that there is no significant difference at the 0.05 level of confidence.

The results of the study revealed significant differences in Speed between the adjusted posttest means of the Yogic Practices Group and the Coalesce of Yogic Practice & Orangetheory Fitness Training Group, the Yogic Practices Group and the Control group, the Orangetheory Fitness Training Group and the Coalesce of Yogic Practice & Orangetheory Fitness Training Group, the Orangetheory Fitness Training Group and the Control group, and the Coalesce of Yogic Practice & Orangetheory Fitness Training Group and the Control group. Additionally, the study's findings showed no significant difference in Speed between the Yogic Practices Group and the Orangetheory Fitness Training Group. However, the increase in Speed was significantly greater for the

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Coalesce of Yogic Practice & Orangetheory Fitness Training Group than for the Yogic Practices Group, the Orangetheory Fitness Training Group, and the Control group.

The pre- and post-mean values of the yogic practices group, the Orangetheory fitness training group, the coalescence of yogic practice and Orangetheory fitness training, and the control group on speed are graphically represented in Figure 1. The adjusted posttest means values of the yogic practices group, the Orangetheory fitness training group, the coalescence of yogic practice and Orangetheory fitness training, and the control group on speed are graphically represented in Figure 2.

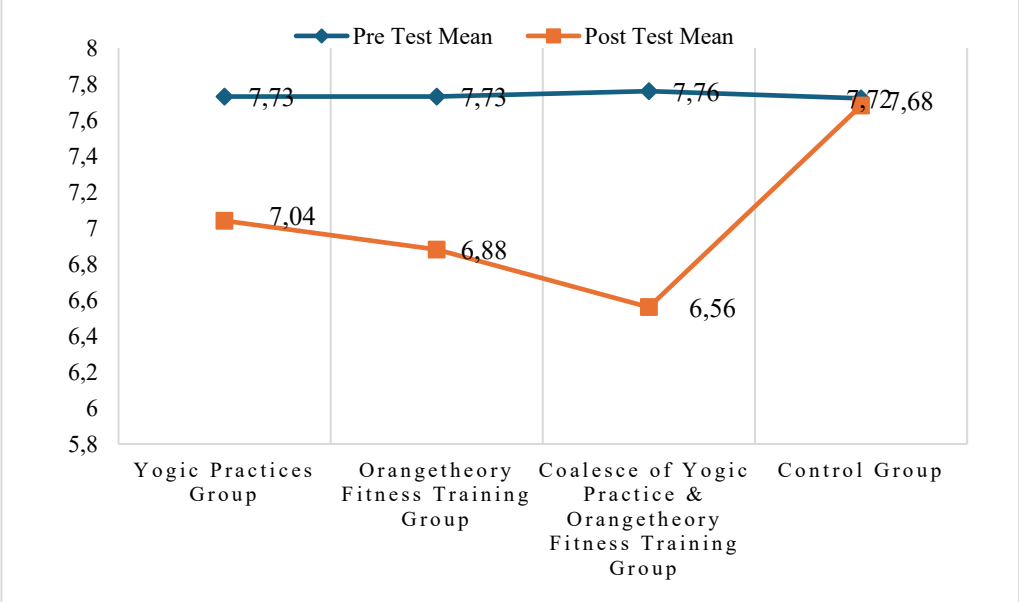

Figure 1: Pre and post-values of the Yogic practices group, Orangetheory fitness training group, Coalesce of Yogic practice & Orangetheory fitness training and the control group on Speed

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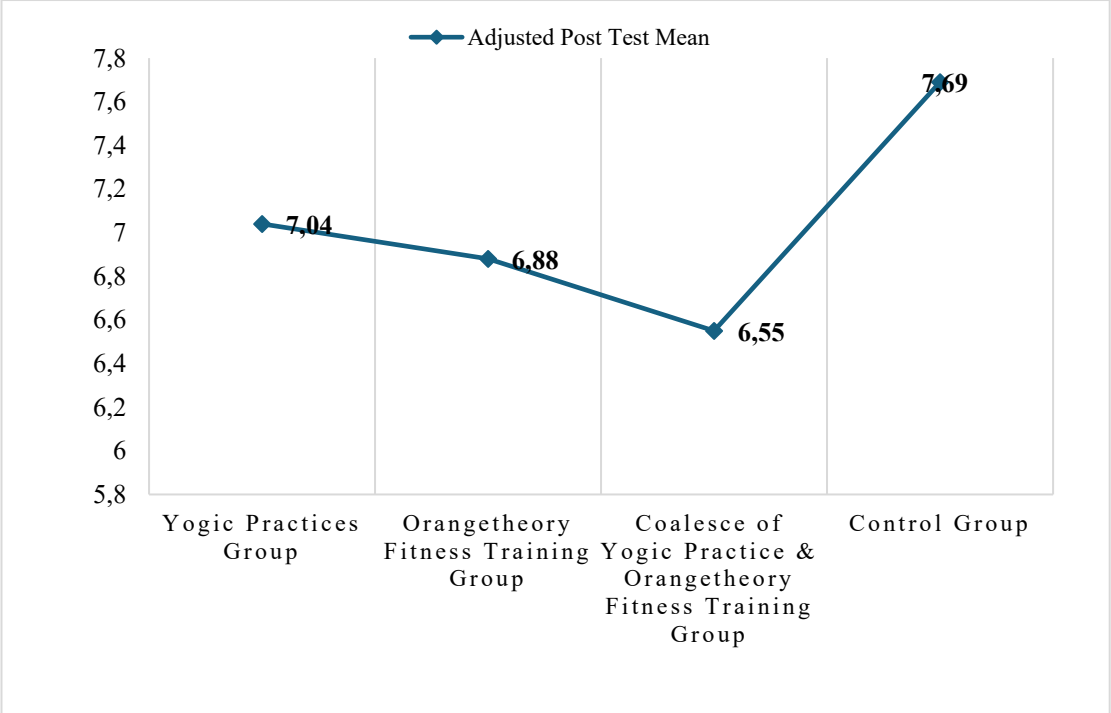

Figure 2: Adjusted post-test mean values of the yogic practices group, Orangetheory fitness training group, Coalesce of yogic practice & Orangetheory fitness training, and the control group on speed.

Discussion

The results of this study demonstrate that both yogic practices and Orangetheory fitness training, when used alone or in combination, significantly enhance speed performance in healthy male swimmers, with the combined approach proving to be the most effective. Physiological principles and research within exercise science and human performance support these findings (Plowman & Smith, 2013). Yoga has long been associated with improvements in neuromuscular coordination, proprioception, flexibility, and balance factors that indirectly contribute to enhanced movement efficiency and speed (Donahoe-Fillmore & Grant, 2019). The asanas practised, such as Bhujangasana, Dhanurasana, and Ardha Matsyendrasana, improve spinal flexibility, core stability, and muscle control. Pranayama practices like Anulom Vilom and Ujjayi enhance respiratory efficiency and oxygen uptake, optimising the delivery of oxygen to working muscles (Thakare, 2021). Improved oxygenation can lead to enhanced muscular endurance and

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reduced fatigue, ultimately contributing to improved sprint performance (Lapointe et al., 2020).

Additionally, yoga's focus on mindfulness and mental concentration can improve reaction time and reduce unnecessary muscular tension, resulting in more efficient movement patterns during high-speed activities (Lim et al., 2024). Although yoga is not typically classified as a high-intensity activity, regular practice enhances body awareness and muscular efficiency, which positively influences short bursts of movement, such as sprints (McGonigle & Huy, 2022). Orangetheory Fitness (OTF), a structured HIIT protocol, directly targets anaerobic energy systems and improves the recruitment of fast-twitch muscle fibres, which is essential for explosive power and sprinting speed (Gedara & Othalawa, 2023). The inclusion of treadmill intervals, rowing, and resistance training provides both cardiovascular and neuromuscular stimuli that foster speed development (Hung et al., 2025). The post-exercise oxygen consumption (EPOC) effect associated with HIIT elevates metabolic activity for hours after exercise, supporting better recovery and adaptation (MacInnis & Gibala, 2017)

Research also supports the notion that HIIT significantly increases VO_2 max, muscular strength, and lactate threshold, which are critical for improving time-based performance in both swimming and dry-land sprints (Mekonnen et al., 2020). Orangetheory's group setting, coach-led motivation, and data-driven monitoring may also contribute to the psychological drive and adherence, encouraging participants to perform at or above threshold levels consistently. The most significant speed improvements were observed in the group that received a combined intervention of yoga and Orangetheory training. This outcome aligns with current trends in integrative training, where the combination of high-intensity conditioning and recovery-focused modalities, such as yoga, produces superior results. The HIIT component likely induced neuromuscular adaptation and improved anaerobic energy system efficiency, while the yoga sessions enhanced recovery, flexibility, and mental composure (Verma et al., 2024).

Physiologically, this combined training approach maximised adaptation across multiple systems: The nervous system was challenged by HIIT for reaction and force production, and soothed by yoga to optimise recovery and mental clarity (Naragatti, 2025). The musculoskeletal system was strengthened and mobilised through a

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combination of load-bearing exercises and stretching postures. The cardiovascular and respiratory systems were conditioned through both sustained intervals (HIIT) and controlled breathing (pranayama), enhancing oxygen utilisation and CO_2 clearance (Retty, 2022).

This holistic approach supports the findings of studies by Cowen and Adams (2005) and Larson-Meyer (2016), which state that yoga complements sports training by reducing cortisol levels and injury risk, while enhancing post-exercise recovery and mood state. By integrating recovery and performance elements into a training regimen, athletes can train harder, more frequently, and with a reduced incidence of injury (Hausswirth & Mujika, 2013). In contrast, the control group showed no significant change in speed performance, underscoring the need for targeted interventions to achieve meaningful physiological improvements. This group followed their regular routines without additional training, and athe minor changes observed can be attributed to day-to-day variation rather than systematic adaptation.

Conclusion

Based on a comprehensive analysis of the collected data, several important conclusions can be drawn regarding the impact of Yogic Practices, Orangetheory Fitness Training, and their combined application on speed performance among jet-set male swimmers. The statistical results revealed significant differences in speed of development among the four groups: the Yogic Practices group, the Orangetheory Fitness Training group, the Coalesce (combined) group, and the Control group. This indicates that the type of intervention applied had a meaningful influence on the improvement of the selected criterion variable, speed.

More specifically, all three experimental groups demonstrated statistically significant improvements in speed performance when compared to the control group, which did not undergo any structured intervention. The Yogic Practices group exhibited notable gains, likely due to enhancements in neuromuscular coordination, flexibility, and respiratory efficiency developed through asanas and pranayama. Similarly, the Orangetheory Fitness Training group showed marked improvement in speed, primarily attributed to the high-intensity nature of the training protocol, which stimulated fast-

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twitch muscle fibres, improved anaerobic conditioning, and increased cardiovascular efficiency.

Among all the experimental groups, the Coalesce group, which combined both Yogic Practices and Orangetheory Fitness Training, showed the most substantial and statistically significant improvement in speed performance. This suggests that integrating traditional yogic elements such as breath control, posture alignment, and flexibility training with the dynamic and intensive HIIT model of Orangetheory provided a synergistic effect that maximised performance benefits. The combination not only enhanced muscular strength and power but also improved recovery, mental focus, and movement efficiency—critical components for achieving optimal speed.

Therefore, the findings of this study highlight that while both Yogic Practices and Orangetheory Fitness Training are independently effective in improving speed, their combined use yields superior results. This integrated approach is especially beneficial for high-performing individuals, such as athletes or busy professionals, who seek comprehensive physical development alongside mental clarity and recovery. These outcomes offer valuable insights for coaches, trainers, and fitness enthusiasts aiming to optimise training programmes focused on speed enhancement through a balanced and evidence-based approach.

Limitations

Although the study produced significant results regarding the effectiveness of Yogic Practices and Orangetheory Fitness Training, certain limitations must be recognised. The sample was exclusively composed of male swimmers aged 18–22 years from a single region (Thiruvananthapuram, Kerala), which restricts the wider applicability of the findings to broader populations, including female athletes, older age groups, and individuals from different geographical backgrounds. Furthermore, the intervention period was relatively brief, lasting only eight weeks, and may not have been long enough to fully capture the physiological and psychological adaptations from these training programmes. The lack of long-term follow-up also hampers understanding of whether the improvements in speed performance observed were maintained over time. Future research should therefore involve larger, more diverse samples, longer

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intervention periods, and follow-up assessments to evaluate the durability of the training effects and to enhance the external validity of the findings.

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