

Competition-day priming practices of South-East Asian track-and-field coaches: Results from a cross sectional survey

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Abstract

This survey study investigated the priming strategies used by track-and-field coaches in South-East Asia. The anonymous online survey fielded questions across themes of: 1) demographic information, 2) prevalence and nature of priming strategies prescribed, 3) priming strategies used, and 4) challenges faced when implementing priming strategies. Forty participants (mean age: 37.6 ± 9.86 years; coaching experience: 10.1 ± 8.43 years) completed the survey, including head coaches ($n = 15$), assistant coaches ($n = 11$), trainers ($n = 9$), and other coaching staff ($n = 5$). Participants specialised primarily in track events—sprints and hurdles (70%), middle distance (35%), long distance (15%)—and field events—jumps (12.5%) and throws (5%). Plyometrics (87.5%) was the most frequently used priming strategy, followed by high-intensity strength training (67.5%), flexibility and mobility (65%), and weightlifting derivatives (42.5%). Plyometrics, high-intensity strength training, and weightlifting derivatives were generally implemented 1–2 days before competition, while flexibility and mobility were implemented 1–2 h pre-competition. Considerations for successful implementation of the priming strategies included equipment and venue limitations, time restraints, biological and training age, and the athlete's willingness and mentality. For practical application, coaches could incorporate plyometric routines, consisting of 3–4 sets with 1–5 reps, into their athletes' training schedules 1–2 days before competition. Priming strategies used should consider athletes' developmental stages and logistical factors (i.e., equipment availability and event time constraints) to support optimal competition performance.

Keywords

Flexibility, high-intensity strength training, plyometrics, post-activation performance enhancement, weightlifting derivatives

Introduction

In track-and-field, the success of a coach is often determined by their athletes achieving a podium place and a medal; therefore, methods that provide a performance advantage are consistently sought. A commonly used strategy to optimize performance during competition is 'priming' which involves performing a specific exercise or activity (1–48 h) before the competition to elicit enhanced neuromuscular performance during competition.^{1–3} The acute enhancement of neuromuscular performance by priming is hypothesised to be mediated by the potentiation of the neuromuscular system, the elevation of anabolic hormonal responses (e.g., testosterone) on competition day, and the induction of positive psychological effects such as increased self-efficacy, heightened motivation and arousal, improved focus, and reduced competitive anxiety.^{4–7}

In the literature, several overlapping terminologies are employed. For conceptual clarity in this study, the following

distinctions are made: (i) Priming refers to pre-competition activities performed within 1–48 h of competition, aimed at acutely enhancing subsequent athletic performance through neuromuscular, hormonal, or psychological mechanisms.⁸

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Table 1. Conceptual framework for pre-competition priming strategies.

Type	Typical Timing	Main Mechanism	Example Activities
Acute Neuromuscular (PAPE)	<6 h pre-event	Neuromuscular performance enhancement	Heavy squats, loaded jumps
Taper-Type Priming	24–48 h pre-event	CNS readiness, fatigue reduction	Plyometric or strength session
Hormonal/Motivational	<2 h pre-event	Hormonal/psychological arousal	Motivational talks, music, visualization

(ii) Post-Activation Performance Enhancement (PAPE) denotes a specific form of priming in which a brief, high-intensity conditioning activity (often resistance-based) transiently increases muscle force or power output, typically within minutes to six hours after execution.⁸ (iii) Hormonal or Motivational Priming comprises strategies such as motivational talks or music delivered less than two hours prior to competition, designed to acutely elevate anabolic hormones (e.g., testosterone) or psychological arousal.⁹ These approaches can be organized according to timing and mechanism, as summarized in Table 1.

Research has demonstrated the effectiveness of various priming strategies in track-and-field contexts. Kotula et al. (2023) investigated the effects of secondary sprint training methods (i.e., resisted sprints, assisted sprints, or both) on 50 m sprint performance and physiological markers in track-and-field sprinters. The results showed that resisted sprinting did not significantly improve 50 m sprint time, whereas assisted sprinting and the combination of resisted and assisted sprinting enhanced performance by -0.01 s immediately post and by -0.05 s after 48 h.^{10,11} Likewise, the combination of resisted and assisted sprinting improved their 50 m sprint time by -0.02 s immediately post and by -0.06 s after 48 h.¹⁰

Although the differences are minuscule, podium positions in track-and-field competitions are often determined by hundredths of a second. Research demonstrates that morning priming activities can substantially enhance afternoon physical performance, with resistance-based sessions producing particularly notable improvements.¹² Cook et al. (2014) found that morning resistance training enhanced afternoon strength performance by approximately 7 kg in 3RM back squat and 5 kg in 3RM bench press, while simultaneously improving 40 m sprint times by 0.07 s and CMJ jump power by 116 W. These performance gains that could prove decisive in competitive athletics. Even lighter morning sprint protocols yielded meaningful 0.04 s improvements in afternoon sprint performance,¹² highlighting the practical window for implementing priming strategies before competition.

The aforementioned strategies have supported an enhanced performance in sprinting,¹⁰ jumping,¹² and throwing,¹³ which are bio-motor abilities observed in track-and-field events.¹¹ Studies examining resistance priming strategies had primarily focused on specific loading

patterns, demonstrating that heavy resistance exercises ($\geq 85\%$ 1RM)¹² and moderately loaded ballistic exercises (30–40% 1RM),¹⁴ can improved strength-power performance within 6 to 32 h of completion.² Priming exercises used in these prior studies included the power clean,¹³ bench press,¹² back squat, and loaded jumps.¹ This method, where resistance training, and or plyometric and ballistic training, are presented as the acute stimulus, is commonly termed ‘resistance priming’.¹

In addition to plyometric and high-intensity strength methods, coaches increasingly prescribe flexibility and mobility exercises (dynamic stretching and joint mobility drills) as part of pre-competition priming routines. Dynamic stretching has been shown to acutely increase range of motion and may enhance neuromuscular activation, which can contribute to improved movement mechanics and readiness for high-intensity activity.^{15,16} However, while some studies report performance benefits from dynamic stretching and mobility drills (particularly for power or sprint-based tasks), other findings are more equivocal,¹⁷ and the acute effects on competitive performance in athletics are less consistently established.¹⁵

Various factors such as limited research findings, training age, logistics, risk returns, buy-in, funding availability, athlete’s access to and knowledge of priming, and exercise prescription impact sports practitioners’ implementation of priming strategies.³ Research points out how these factors contribute to the uncertainty and doubt about the effectiveness of prescribing warm-up interventions to enhance competition performance in sports.³ Consequently, research has been undertaken to explore approaches to improving athletes’ physical performance on competition day.¹⁸ One such strategy is using a designed warm-up routine, incorporating a conditioning activity to induce a post-activation performance enhancement (PAPE), particularly relevant in track-and-field.⁸ Usually, PAPE manifests as a result of performing a high-intensity exercise (conditioning activity) to stimulate the nervous system and increase muscle fibre recruitment, leading to improved performance in subsequent exercises, though the exact mechanisms remain unknown.⁸ Hormonal priming is another approach that has gained attention in the literature.⁸ This approach involves manipulating the body’s hormonal responses, particularly testosterone, to enhance physical performance.¹⁰ Coaches often use pre-match talks to outline tactical

practices and motivate athletes, which can influence testosterone levels.¹² These talks usually occur less than 2 h before a competition and are reinforced during the pre-competition warm-up.⁸ Combined strategies (PAPE and hormonal) could offer a comprehensive approach to improving an athlete's competitive performance.

Given the scarcity of data on coaches' actual priming practices in track-and-field, there is a critical need for comprehensive investigations into the practices employed by coaches and the potential influence of these strategies on competition performance. Furthermore, given the diversity of events in track-and-field, it is plausible that coaches may select different priming strategies depending on their event specialisation; however, few studies have directly examined these potential associations, warranting further investigation.

Therefore, this survey study aimed (1) document the prevalence, application parameters (sets, repetitions, load), and scheduling of competition-priming techniques prescribed by South-East Asian track-and-field coaches, (2) identify barriers to implementation, These data will provide important insight to align existing practices with those recommended in the literature, enabling the development of more effective interventions in the future.¹⁹

Methods

Study design

This cross-sectional explorative survey investigated the competition priming strategies employed by track-and-field coaches in SEA (See Appendix 1).

Participants

Purposive and convenience sampling were used to obtain a sample for this study. In total, 40 SEA track-and-field coaches (age: 37.6 ± 9.86 years; coaching experience: 10.1 ± 8.43 years) completed the survey (Table 2).

Procedures

The anonymous online survey used in this study was developed using Microsoft Forms (Microsoft Corporation, Redmond, WA). The survey was written in English, a prominent first and second language in SEA. The principal author and senior final author developed the provisional survey, which was internally reviewed for content validity by three academic experts and five experienced track-and-field coaches. This led to minor changes in some questions' wording and structure to ensure they were clear and appropriate for the surveyed population. The final survey included 51 questions (40 fixed responses and 11 open-ended) across seven sections: (a) background information, (b) high-intensity strength training (HIST),

Table 2. Demographic information of coaches (N = 40) participating in the survey.

	N* (%)
Coaching Experience (years)	
Median [IQR]	7.5 [4.0-14.25]
Gender (%)	
Not collected	-
Track-and-Field Qualification (%)	
World Athletics Level 1 Coaching Certification	18 (45%)
World Athletics Level 2 Coaching Certification	10 (25%)
World Athletics Level 3 Coaching Certification	3 (7.5%)
World Athletics Kids' Athletics Course	3 (7.5%)
Other	6 (15%)
Coaching level (%)	
High school	14 (35%)
Collegiate	6 (15%)
Professional	18 (45%)
Other	2 (5%)
Specialization (%)	
Track events	
Sprints & Hurdles	28 (70%)
Middle Distance	14 (35%)
Long Distance	6 (15%)
Field events	
Jumps	5 (12.5%)
Throws	2 (5%)
Country of origin	
Japan	1
Malaysia	5
Maldives	1
Myanmar	1
Philippines	5
Singapore	26
Sri Lanka	1

*N = Number of subjects.

(c) plyometrics, (d) flexibility and mobility (F&M), (e) weightlifting derivatives (WD), (f) any other priming strategies and (g) challenges and considerations. Exemplary exercises used in each of the aforementioned exercise categories are presented in Table 3. The survey was assessed against the Checklist for Reporting Results of Internet E-Surveys (CHERRIES)²⁰ and Checklist for Reporting of Survey Studies (CROSS)²¹ (see Appendices 2 and 3).

Following the practice of similar published surveys,^{22,23} a digital invitation letter was emailed to participants, who were identified via athletics federations in the SEA region, such as the Singapore Athletics Federation, Malaysia Athletics Federation, Philippines Athletics Federation, Vietnam Athletics Federation, Thailand Athletics Federation and Indonesia Athletics Federation (b) professional networks of the author team, and (c) social media (e.g., X, LinkedIn). To further increase the sample, snowball sampling was used, whereby participants were encouraged to

Table 3. Exemplary exercises utilized by coaches under each exercise category.

Category	Exemplary exercises
High-intensity strength training (N* = 27, 67.5%)	<ol style="list-style-type: none"> 1. Compound strength training: squats, deadlifts, power cleans, bench press, and Romanian deadlift. 2. Isometric strength training: targeting specific joint angles. 3. Specialized drills: event-specific movements.
Plyometrics (N* = 35, 87.5%)	<ol style="list-style-type: none"> 1. Jump series: vertical jumps, box jumps, and squat jumps. 2. Bound series: horizontal jumps, alternate leg bounds. 3. Hop series: ankle hops and pogo hops. 4. Skip series: skipping drills. 5. Specialized drills: event-specific movements 6. Others: jump squats, jump lunges.
Flexibility and mobility (N* = 26, 65%),	<ol style="list-style-type: none"> 1. Dynamic stretch: hurdle drills and leg swings. 2. Static stretch: proprioceptive neuromuscular facilitation and band resisted. 3. Activation: Hip mobility and glute activation exercises
Weightlifting derivatives (N* = 17, 42.5%).	<ol style="list-style-type: none"> 1. Clean: hang clean, power clean. 2. Snatch: hang snatch, power snatch.

*N = Number of subjects.

send the digital invitation to other coaches who met the study's inclusion criteria of (a) being ≥ 21 years old, (b) actively involved in coaching track-and-field, (c) ≥ 2 years coaching experience at the high school, collegiate or professional level and (d) currently coaching within SEA. At the start of the survey, the inclusion criteria, purpose, aims, required time commitment, and confidentiality of responses were detailed, to which participants needed to acknowledge and consent to enter the study and complete the survey. The survey was open for 4 weeks (7th September 2023 to 11th October 2023) for coaches' input, and only fully completed surveys were considered for analysis. The study was approved by the Nanyang Technological University Institutional Review Board and conducted per the Declaration of Helsinki.

Statistical analysis

All survey responses were downloaded into a Microsoft Excel Spreadsheet (Microsoft, Redmond, WA, version 16.68). Fixed-response questions were assessed using frequency analysis. Open-ended response questions were initially evaluated by the lead author following a 6-stage thematic analysis process: (a) familiarization with the data; (b) generating initial codes; (c) searching for themes;

(d) reviewing themes; (e) defining and naming themes; and (f) producing the report.²⁴ To enhance analytical rigor, a second researcher independently coded a subset of the responses. Any disagreements between coders were resolved by a third author, and agreed upon by consensus. Hereafter, each theme and pattern emerging from the raw data were discussed, reviewed, and agreed upon by all co-authors. Previous studies have used this thematic analysis method to survey sports coaches.^{4,25–27} Statistical analyses were conducted using SPSS 25.0 (IBM Corp., Armonk, NY). Statistical significance was set at $p < 0.05$.

Results

Due to the format (i.e., can select more than one answer) and response (i.e., multiple themes created from a comprehensive answer to an open-ended question), some questions may provide more responses than others, or that is reflective of the number of participants in this study.

Plyometrics (n = 35, 87.5%) was the most prescribed priming strategy, followed by HIST (n = 27, 67.5%), F&M (n = 26, 65%), and WD (n = 17, 42.5%). Priming strategies were typically performed 24–48hrs pre-competition (Figure 1), with a low-to-moderate volume prescription (Figures 2–3). For HIST and WD loading schemes varied (Figure 4).

Discussion

This descriptive survey documented the prevalence and implementation characteristics of priming strategies reported by South-East Asian track-and-field coaches. The findings revealed that plyometric exercises were the most frequently reported priming method (87.5%), followed by high-intensity strength training (HIST) (67.5%), flexibility and mobility exercises (F&M) (65%), and weightlifting derivatives (WD) (42.5%). Most coaches reported scheduling priming sessions 24–48 h before competition, with the exception of F&M exercises, which were typically implemented closer to competition time. These descriptive findings provide initial insights into current coaching practices and generate hypotheses for future experimental research.

The widespread reporting utility of plyometric training among coaches in this sample is consistent with similar descriptive studies of coaching practices.^{22,28} Sáez de Villarreal et al. (2009) conducted a comprehensive meta-analysis of 56 studies and demonstrated that plyometric training significantly enhances vertical jump performance, with effect sizes ranging from moderate to large depending on training variables.²⁹ Their analysis showed that plyometric programs using high-intensity protocols produced optimal performance gains across diverse athletic populations.²⁹ Additionally, Moran et al. (2017) found that even low-dose plyometric training effectively improved sprint performance in youth athletes, particularly

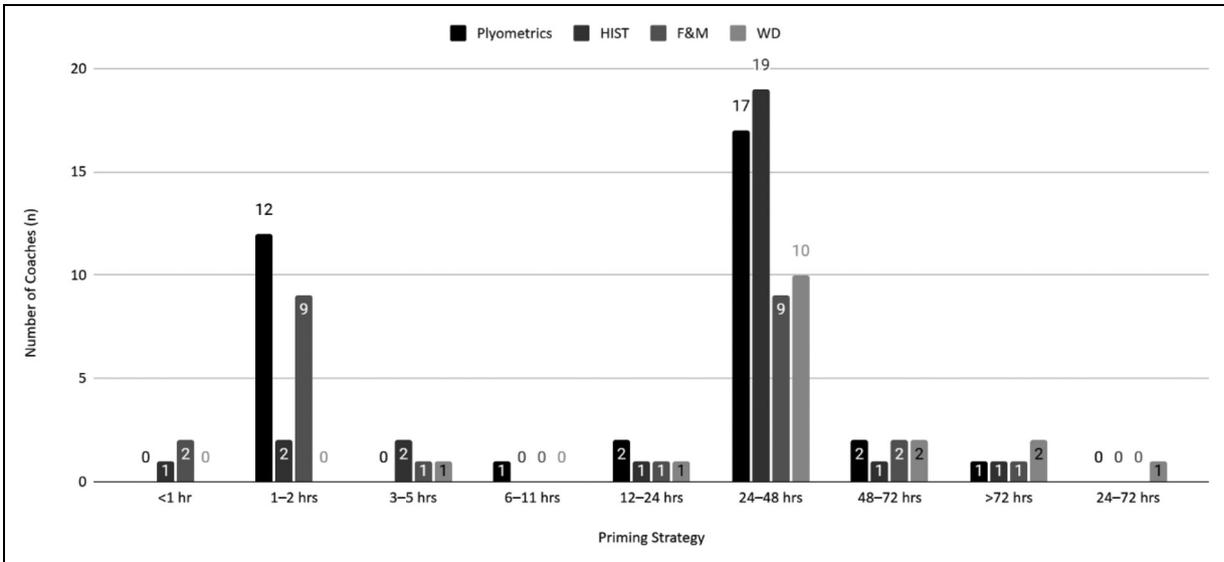


Figure 1. Self reported scheduling preferences for priming strategies among coaches (N = 40). *HIST: high-intensity strength training; F&M: flexibility and mobility; WD: weightlifting derivatives.

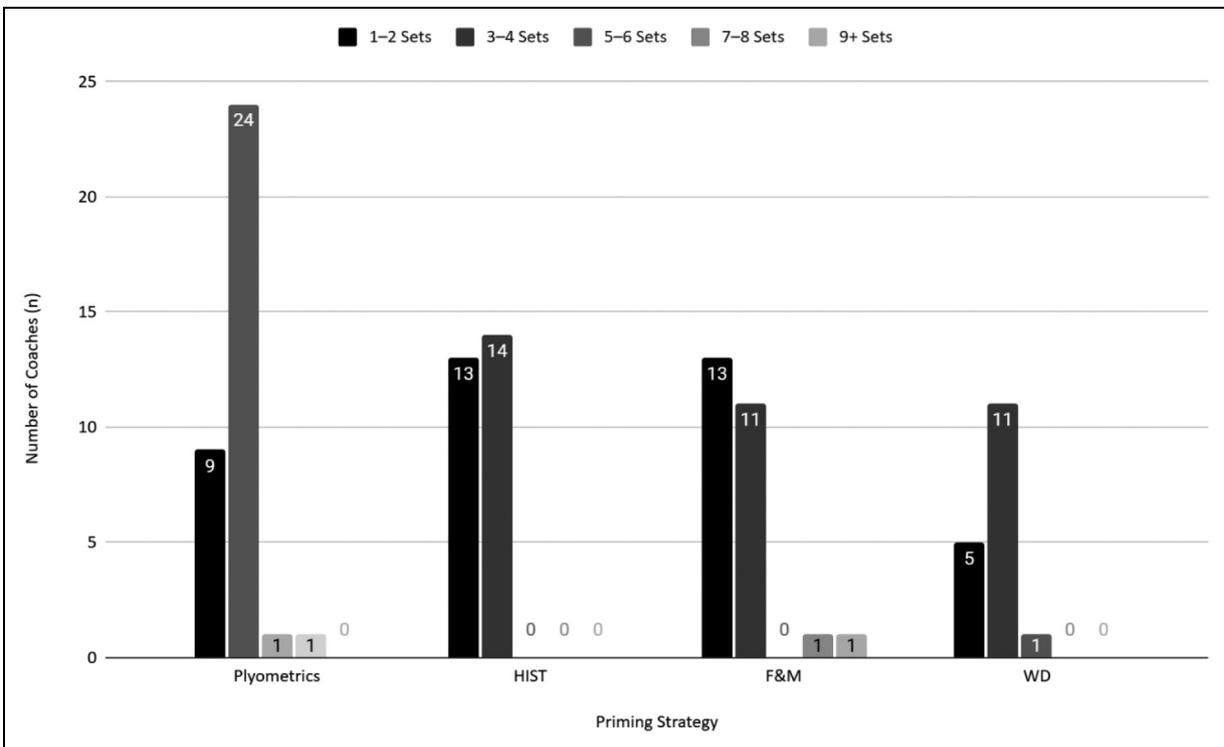


Figure 2. Self reported set preferences for priming strategies among coaches (N = 40). *HIST: high-intensity strength training; F&M: flexibility and mobility; WD: weightlifting derivatives.

demonstrating significant improvements in 10-meter sprint times following structured plyometric interventions.³⁰

The apparent preference for plyometric exercises may reflect coaches' beliefs about their accessibility and perceived benefits for speed and power development.

Research shows that coaches and elite sprinters commonly use plyometric training as a supplementary method to improve sprint development.^{28,31} However, given the cross-sectional design, no conclusions can be drawn about the actual effectiveness of these reported practices or their

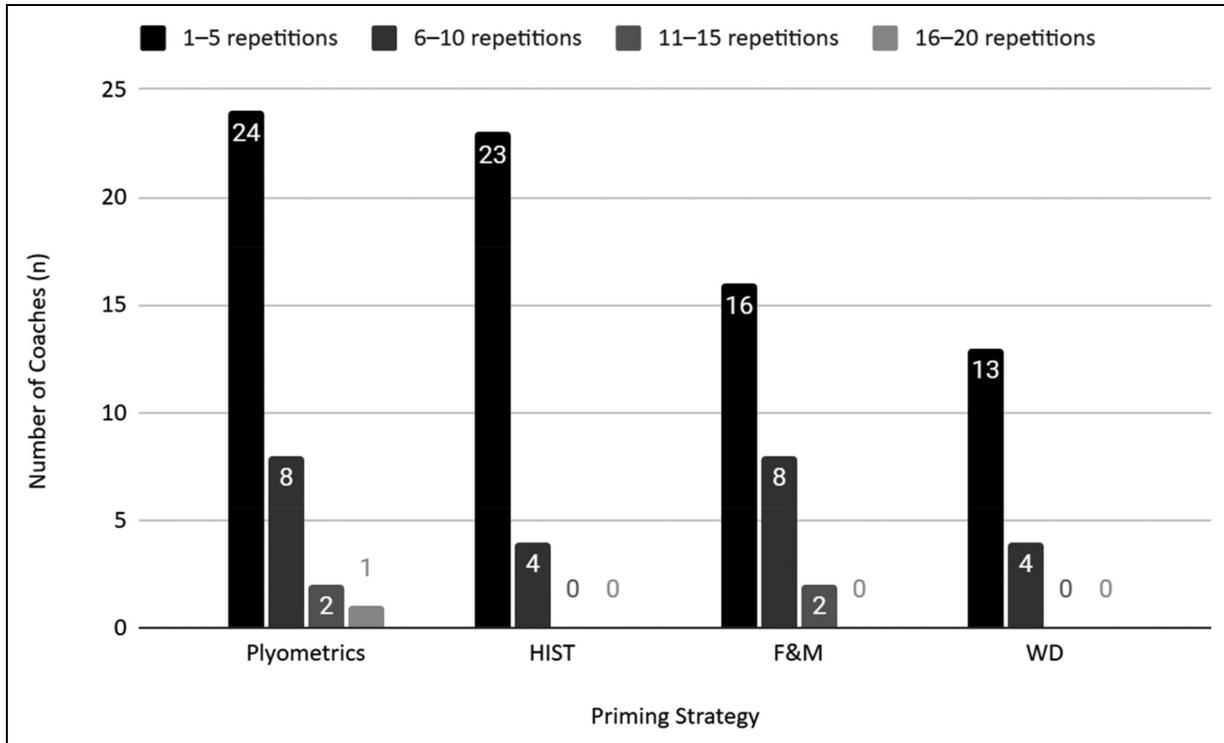


Figure 3. Self reported repetition scheme preferences for priming strategies self reported among coaches (N = 40). *HIST: high-intensity strength training; F&M: flexibility and mobility; WD: weightlifting derivatives.

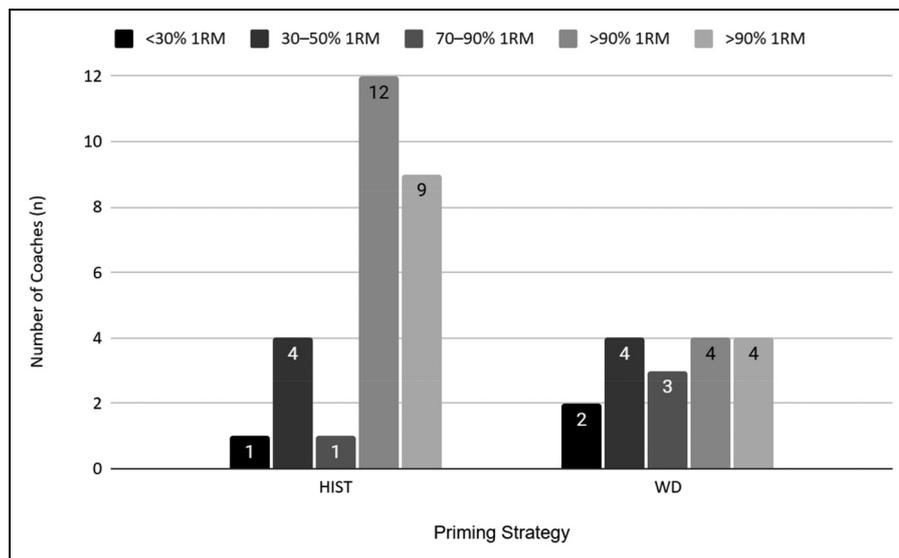


Figure 4. Self reported load preferences for priming strategies among coaches (N = 40). *WD: weightlifting derivatives; HIST: high-intensity strength training; RM: repetition maximum.

impact on athlete performance. These descriptive patterns warrant future controlled studies to examine whether plyometric priming protocols produce measurable performance improvements.

High-intensity strength training (HIST) was the second most commonly reported strategy among surveyed coaches.

The exercises described by respondents included compound movements such as squats, bench press deadlifts, Romanian deadlifts and power cleans, which are typically performed at high intensities for short durations. While prior research has suggested potential benefits of such approaches for power and speed outcomes,³² the current descriptive findings

Table 4. Thematic analysis of challenges faced by coaches when implementing priming strategies.

Themes	Exemplar Responses
Equipment and venue limitations	<p><i>“Limited equipment, wet weather, and stadium unavailability”</i></p> <p><i>“Time and equipment”</i></p> <p><i>“Availability of barbells, we used to hire gyms”</i></p> <p><i>“Improvised with mini hurdles”</i></p> <p><i>“Equipment needed”</i></p>
Time constraints	<p><i>“Timings and school schedules ”</i></p> <p><i>“Timing of events, due to changes in schedule and weather”</i></p> <p><i>“Weather conditions and athletes’ physical condition on that day”.</i></p>
Athlete’s biological and training age	<p><i>“Adjusting volume to manage fatigue”</i></p> <p><i>“As every athlete’s ability varies, we have to customise or modify some exercises and drills accordingly.”</i></p> <p><i>“For high-intensity strength training, sometimes the athlete’s background sees them less experienced in handling and lifting heavy weights, so another approach would be better for them before they gain the necessary strength and experience.”</i></p> <p><i>“Athlete’s age, athlete’s physiques”</i></p> <p><i>“The lack of technique that the athletes have when they get to you, so you have to spend more time in foundation than in training itself.”</i></p>
Athlete’s willingness and mentality	<p><i>“Athlete’s unwillingness to properly execute the priming sessions - mentality issue ”</i></p> <p><i>“Athletes coming from previous coaching systems reluctant to try them.”</i></p>

cannot establish whether the reported use of HIST translates to actual performance benefits. The variation in specific exercises and parameters reported by coaches suggests that future experimental studies should examine optimal HIST protocols for different competitive contexts.

F&M exercises were reported by 65% of coaches in this sample, with typical activities including hip mobility work, dynamic stretching, glute activation, and event-specific drills. Coaches indicated that these exercises were intended to improve flexibility, movement efficiency, and potentially reduce injury risk.³³ Recent literature suggests that well-structured dynamic flexibility routines may support movement readiness without impairing power output, and our survey findings show that coaches frequently incorporate F&M approaches with similar intentions.³⁴ However, the extent to which these reported practices achieve their intended outcomes requires investigation through controlled trials, as the benefits of acute performance from pre-competition flexibility interventions remains mixed and context dependent.^{35,36}

Weightlifting derivatives were less frequently used (42.5%) as a priming strategy. The exercises most commonly mentioned included hang and power variations of cleans and snatches. The lower reported frequency may reflect practical considerations, as these exercises require specialized equipment and technical proficiency, which depends on athlete experience and long-term development.³⁷ Additionally, coaching weightlifting movements to athletes of varying skill levels presents challenges, as the technical demands raise safety and effectiveness concerns, particularly in large team settings.^{38,39} While Olympic lifts and their derivatives are capable of producing high force and power outputs when executed correctly,⁴⁰ the present survey cannot determine whether the reported implementation strategies effectively realise these potential benefits in practice.⁴¹

Regarding implementation parameters, coaches in this sample reported a general preference for 3–4 sets across all priming strategies, which corresponds with research recommendations of 3–5 working sets per exercise.² The reported preference for low repetitions (1–5 reps) may reflect coaches’ intentions to stimulate neural activation while managing fatigue.^{42,43} However, it is important to note that fatigue responses are influenced by multiple factors including relative load and proximity to failure.^{43,44} For instance, performing 6 repetitions at 85% 1RM to failure may produce similar fatigue levels as 12 repetitions at 60% 1RM, depending on effort involved.^{44,45} These descriptive findings highlight the complexity of programming decisions and suggest that future research should examine optimal load–repetition combinations for different priming objectives.^{42,43,46}

The reported variability in load preferences for WD and HIST may indicate that coaches attempt to individualize their prescriptions based on athlete characteristics and capabilities.³⁷ Most coaches in this sample reported using loads within 70–90% of 1RM for both strategies, which aligns with research suggestions that strength-based priming may benefit from heavy loads (>80% 1RM).² However, the current descriptive data cannot establish whether these reported loading strategies produce superior outcomes compared to alternative approaches.

Coaches’ reported timing preferences indicated a tendency to schedule priming sessions 1–2 days before competition across most strategies, whereas F&M exercises were typically performed closer to competition (1–2 h prior). This timing aligns with research demonstrating potential benefits of priming conducted 6–32 h before competition,² and the proximal use of F&M may reflect its dual function as both a priming stimulus and a dynamic warm-up component. However, as this survey collected only descriptive data about reported practices, future studies are needed to determine optimal timing protocols for different priming approaches.

Many South-East Asian countries face tropical climates where ambient temperatures regularly exceed 30°C and

PRACTICAL APPLICATIONS OF PRIMING STRATEGIES		
CORE EXERCISE CATEGORIES		
Category		Representative Exercises
Plyometrics		Jumps, Bounds, Hops, Skips and Event-specific dynamic drills
High Intensity Strength Training (HIST)		Compound Lifts: Power Clean, Squat, Deadlift, Bench Press, Romanian Deadlift; Isometric and Event-specific movements
Flexibility & Mobility (F&M)		Dynamic and Static Stretches; Activation for Glutes and Hips
Weightlifting Derivatives (WD)		Hang Cleans, Power Cleans, Hang Snatch, Power Snatch
APPLICATION GUIDELINES		
<p>Optimal Timing</p>  <p>24 - 48 hrs</p>	<p>Prescriptive Parameters</p>  <p>Sets = 1 - 4 Reps = 1 -10 Load = tailored individually</p>	<p>Others:</p> <ol style="list-style-type: none"> 1. Equipment and venue availability 2. Training and competition schedule 3. Athlete training experience and history 4. Athlete motivation and buy-in

Figure 5. Practical applications of priming strategies.

relative humidity surpasses 70%, creating heat stress that limits the safety and effectiveness of high-intensity conditioning activities during daytime training sessions.⁴⁷ A shortage of climate-controlled indoor facilities forces coaches to schedule plyometric and strength protocols in early-morning or late-evening slots, which can conflict with athletes' work or school commitments. The migration of elite athletes from developing countries to nations with superior training facilities highlights the infrastructure challenges faced across the region.⁴⁸ Travel between dispersed venues

and inconsistent surface quality adds logistical complexity for implementing standardized priming protocols. In response, coaches often prioritize low-equipment, time-flexible approaches such as body-weight plyometrics and dynamic mobility drills to accommodate these unique contextual constraints.

Despite the reported widespread use of priming strategies, coaches identified several implementation barriers organized into four main categories: equipment and venue limitations, time constraints, athlete biological and training

age considerations, and athlete willingness and mentality factors (Table 4).

Limited access to specialized equipment and facilities echoes challenges reported in previous coaching studies, particularly in resource-constrained environments.³⁷ Time-related constraints, including athlete fatigue management and scheduling conflicts, represent persistent obstacles in sports coaching.⁴⁹ Athlete-related factors requiring individualized programming align with long-term athlete development principles,³⁵ whereas psychological barriers highlight the importance of coach–athlete relationships in implementing new training methods.^{50,51}

These reported barriers suggest that implementation challenges may vary by region and context. For South-East Asian coaches in particular, adapting priming routines to local logistical constraints appears to be a common consideration, necessitating flexibility and creativity in practical application. In contrast, European studies often report use of indoor facilities with standardized track and gym environments, enabling tightly controlled priming protocols.⁴⁸ For example, European sprint coaches typically implement heavy-resistance squats at 0.7–0.9 1RM within 10–15 min of competition, protocols less feasible in many SEA settings due to equipment scarcity and travel distances to standard gyms.⁴⁸ This divergence underscores the necessity for adapted guidelines that reflect the climatic, logistical, and infrastructural conditions present in South-East Asia. Future research should examine how contextual factors influence both the selection and effectiveness of different priming approaches.

Limitations

This study has several important limitations. Firstly with regards to sampling and generalizability, the small sample size of coaches in South-East Asia ($n = 40$), combined with the absence of a priori power analysis due to the open, convenience-based sampling frame, may have limited statistical power to detect smaller effects and reduced the external validity of findings.^{20,52–54} The recruitment strategy used digital invitations via athletics federations, professional networks, social media, and snowball sampling, which precluded calculation of an accurate response rate and limits assessment of nonresponse bias. Additionally, data collection occurred during the competitive season (September–October), when coaches' availability and willingness to participate may have fluctuated with training and competition demands, social media, and snowball sampling, which precluded calculation of an accurate response rate and limits assessment of nonresponse bias.

Secondly with regards to survey design and accessibility, conducting an English-only, Internet-based survey may have excluded coaches with limited English proficiency or unreliable online access, thereby biasing the sample toward those from higher-resource settings and underrepresenting coaches in lower-resource environments. Although the

survey was openly accessible without participant registration, the possibility of duplicate submissions cannot be fully excluded despite integrity checks.

Thirdly with regards to data quality and measurement, reliance on self-report data introduces the potential for both recall bias and social-desirability bias, as coaches may overstate evidence-based practices or underreport less accepted methods. However, self-report questionnaires remain a well-established and valuable method in sports science research for capturing coaches' knowledge and reported practices, particularly when direct observation is impractical. Similarly, while digital invitations may be noted as a limitation, this approach was less burdensome on participants than in-person data collection and likely enabled broader reach. No formal reliability testing of the questionnaire (such as test–retest reliability or internal consistency coefficients) was conducted, which may affect the consistency and interpretability of reported responses. Finally, the instrument did not directly assess whether coaches shared a research-informed understanding of 'priming' or whether their implementation reflected evidence-based intent, leaving variations in conceptual clarity and purpose unmeasured.

Future research should address these limitations by employing larger, multilingual samples with formal sample size calculations, conducting formal validity and reliability testing of survey instruments, calculating precise response rates, and directly evaluating coaches' conceptual frameworks and evidence-based implementation.

Conclusions

This survey delivers a descriptive overview of the priming strategies employed by South-East Asian track-and-field coaches, detailing core exercise categories such as plyometrics, high-intensity strength training, flexibility and mobility drills, and weightlifting derivatives alongside practical application guidelines, contextual considerations, and operational barriers. While coaches' reported practices broadly align with existing post-activation potentiation research, the descriptive nature of these data precludes definitive prescription of optimal loads, volumes, or timing windows. Instead, practitioners can refer to the practical applications infographic (Figure 5) for guidance on selecting and sequencing priming modalities according to facility access, athlete readiness, and competition schedules, while remaining mindful of regional constraints such as climate, facility availability, and equipment resources. Future experimental studies must establish evidence on optimal load-repetition combinations and timing parameters before rigid prescription guidelines can be recommended.

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Authors' contributions

All authors helped to design and conceive the project. WTT conducted the data collection. All authors were involved in data analysis. All authors assisted in writing and revising the manuscript. All authors read and approved the final manuscript.

Ethical considerations

The ethical approval was granted by the Nanyang Technological University Institutional Review Board, under approval number IRB-2023-07-052.

Consent to participate

All participants provided informed consent to be involved in the study.

Consent for publication

Informed consent for publication was obtained from all study participants.

Declaration of conflicting interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Data availability

Data are available upon reasonable request from the corresponding author. The data are not publicly available because the small sample size and detailed demographic variables could allow participant re-identification. Requests will be evaluated by the authors and will require a signed data-sharing agreement confirming the data will be used solely for scholarly purposes and that participant confidentiality will be maintained.

Supplemental material

Supplemental material for this article is available online.

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