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Various Anticipation Techniques For Falling With Pulling In Pencak Silat Athletes In The Adult Age Competition Category Based On An International Perspective

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ABSTRACT

Pencak silat is a traditional Indonesian martial art that has developed into an internationally recognized sport. Its development is marked by participation in world championships and inclusion in sporting events such as the SEA Games and Asian Games. In the sparring category, pencak silat involves two athletes competing to gain points based on valid attacks, blocks, evasions, and takedowns. The success of takedown techniques depends on an athlete's ability to anticipate the opponent's movements. Therefore, anticipation of pull-based takedown techniques is essential. This study aims to identify anticipation techniques for pull-based takedowns used by adult pencak silat athletes in the sparring category, analyze their effectiveness based on international rules and perspectives, evaluate defensive strategies when facing pulling attacks that may result in takedowns. The research employed a qualitative approach with data collected through surveys. This method was chosen to obtain an in-depth understanding of anticipation techniques for pull-based takedowns among athletes with experience in adult sparring categories within an international competition context. The results show that eleven anticipation techniques for pull-based takedowns were identified and applied through various combinations adapted to match situations. Three techniques were most frequently used: anticipation technique five, anticipation technique three, and anticipation technique four. Anticipation technique five was applied seventy-three times, technique three twenty-six times, and technique four twenty-two times. The study concludes that eleven anticipation techniques are used by adult sparring athletes, with technique five being the most dominant. Technique selection is adjusted to competition situations to maintain balance and prevent takedowns.

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INTRODUCTION

Pencak silat is an Indonesian cultural heritage that serves not only as a traditional self-defense system but has also evolved into an internationally recognized competitive sport. Its development reflects human adaptation to the environment and socio-cultural dynamics

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from prehistoric times to the modern era (Sudiana & Sepyanawati, 2017). In a sporting context, pencak silat integrates spiritual, mental, movement, and physical elements, making it unique among other martial arts (Pratama, 2018; Nugroho et al., 2020).

With the internationalization of pencak silat, the competition system has undergone continuous changes to improve objectivity, athlete safety, and the appeal of the competition. In the sparring category, significant regulatory changes occurred in 2012, were updated in 2016, and further refined in the 2022–2023 regulations (IPSI, 2023). The latest regulations introduce various previously restricted techniques, such as pulling, forward throws, attacks from behind, and attacks to the lower body. These changes require athletes to have greater technical and tactical adaptability than before (Muslikhin et al., 2023).

One of the main implications of these rule changes is the increased frequency and complexity of pull-based takedown techniques. These techniques rely not only on physical strength but also on quick decision-making, balance, and the ability to read an opponent's movements in a very short time. In the context of high-tempo matches, failing to anticipate a takedown technique can result in lost points, opponent domination, and even the risk of injury (Turner et al., 2021).

However, pencak silat training at the club and school levels still tends to focus on mastering attack techniques and physical strength, while cognitive-motor aspects such as anticipation have not received adequate attention. Yet, in modern martial arts, the ability to anticipate an opponent's attack is a key factor in determining an athlete's performance, especially at high levels of competition (Del Vecchio et al., 2019). This situation indicates a fundamental problem between the demands of actual competition and the technical development approach on the field.

Anticipation in sports is defined as an athlete's ability to predict an opponent's actions before a motor stimulus fully occurs, based on visual, postural, and previous movement patterns (Malkov & Dementiev, 2022). From a neuromotor perspective, anticipation involves the integration of visual perception, competitive experience, motor memory, and rapid, coordinated psychomotor responses (Williams et al., 2018).

Research in combat sports such as judo, taekwondo, karate, and wrestling shows that elite athletes possess significantly superior anticipatory skills compared to non-elite athletes. Elite athletes are able to recognize advance cues from their opponent's body posture, weight distribution, and gaze direction to predict the type of attack they will launch (Cañal-Bruland et al., 2020; Díaz et al., 2022). This ability has been shown to contribute significantly to defensive effectiveness and counterattack success.

In the context of pencak silat, several studies have examined the technical and tactical aspects of matches, including movement analysis, attack patterns, and athlete physical characteristics (Ihsan, 2018; Nugroho et al., 2020). A recent study by Ubaidillah Riky (2024) identified eleven variations of pull-based takedown techniques used at the provincial and international levels following the implementation of new regulations. This research confirms that pull-based takedowns have become a dominant element in modern sparring.

Furthermore, research by Muslikhin et al. (2023) highlighted that regulatory changes directly impacted match dynamics, particularly increased body contact and the

need for movement control. However, most of this research focused on describing techniques and their frequency of use, without delving deeply into how athletes anticipate these techniques in real-life match situations.

In general, the study of anticipation in pencak silat lags behind that of other martial arts, both in terms of theoretical and methodological approaches. In fact, pencak silat has unique characteristics in the form of a very dynamic combination of attacks, evasions, and throws, making it an ideal context for developing sports science-based anticipation studies (Sukendro et al., 2021).

Although international literature has extensively discussed anticipation in martial arts, several significant research gaps remain in the context of pencak silat. First, most pencak silat studies still focus on attack techniques and physical conditioning, while cognitive-motor skills such as anticipation have not been systematically explored (Ihsan, 2018; Nugroho et al., 2020).

Second, research examining pull-based takedown techniques remains descriptive and focuses on technique classification, without linking them to athletes' anticipatory responses when facing these techniques (Ubaidillah Riky, 2024). Consequently, there is no clear mapping of effective anticipatory responses when facing modern takedowns.

Third, no research has been found that specifically integrates aspects of the latest competition regulations, analysis of takedown techniques, and anticipation skills into a single, comprehensive research framework. This is despite the fact that rule changes directly impact opponent attack patterns and require adjustments to athletes' defensive strategies (Muslikhin et al., 2023).

Thus, there is an urgent need for research that not only identifies the types of takedown techniques but also analyzes how pencak silat athletes anticipate these techniques through defensive movements, body position adjustments, and tactical decision-making in the context of actual matches. Although international literature has extensively discussed anticipation in martial arts, several significant research gaps remain in the context of pencak silat. First, most pencak silat studies still emphasize the technical aspects of attacks and physical conditioning, while cognitive-motor abilities such as anticipation have not been systematically explored (Ihsan, 2018; Nugroho et al., 2020).

Second, research examining pull-based takedown techniques remains descriptive and focuses on technique classification, without linking them to athletes' anticipatory responses when facing these techniques (Ubaidillah Riky, 2024). Consequently, there is no clear mapping of effective anticipatory responses to modern takedowns.

Third, no research has been found that specifically integrates aspects of the latest match regulations, analysis of throwing techniques, and anticipation skills within a single, comprehensive framework. Yet, rule changes directly impact opponent attack patterns and require adjustments to athletes' defensive strategies (Muslikhin et al., 2023).

Therefore, there is an urgent need for research that not only identifies the types of throwing techniques but also analyzes how pencak silat athletes anticipate these techniques through defensive movements, body position adjustments, and tactical decision-making in the context of actual matches.

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Based on these research problems and gaps, the primary objective of this study is to identify and analyze the forms of anticipation used by competitive pencak silat athletes when facing pull-based takedowns. Specifically, this study aims to: (1) classify the types of anticipatory responses that emerge when facing pull-based takedowns, (2) analyze the characteristics of effective defensive and tactical movements, and (3) provide a scientific basis for developing an anticipation training model in pencak silat.

The novelty of this research lies in its approach, which integrates analysis of the latest regulations, modern takedown techniques, and anticipation skills in the context of competitive pencak silat. This research not only enriches the body of pencak silat sports science but also provides practical contributions for coaches and athletes in designing anticipatory skill-based training programs to improve performance and safety at the competitive level.

METHODS

Research Design

This study employed a qualitative descriptive research design using a visual survey approach. Qualitative descriptive research aims to systematically describe phenomena as they naturally occur, without experimental manipulation or treatment of variables (Winarno, 2013; Zellatifanny & Mudjiyanto, 2018). This approach is particularly appropriate for studies that seek to capture real behavioral patterns, movement responses, and contextual interactions within competitive sports environments.

The focus of this research was to examine anticipatory responses to pull-based takedown techniques in pencak silat sparring matches. Pull-based takedowns represent a relatively new competitive phenomenon following recent updates to pencak silat competition rules. Because anticipatory behavior emerges dynamically during actual matches, an observational approach using competition video recordings was considered the most valid method to capture authentic athlete responses in real competitive contexts.

Data Sources and Research Objects

The primary data source of this study consisted of video recordings of official pencak silat sparring matches. The objects of analysis were competitive situations in which athletes faced pull-based takedown attempts during matches.

The inclusion criteria for video selection were as follows:

1. Video recordings of adult-category pencak silat matches.
2. Matches competed in the sparring (tanding) category.
3. Matches conducted under official competition rules.
4. Videos with clear visual quality that allowed detailed observation of athlete movement and interaction.

The exclusion criteria included:

1. Matches ending in walkover (WO) situations.
2. Matches in which athletes withdrew due to injury or disqualification before meaningful technical exchanges occurred.

Guyub Prayogi[1A-E*], Kurniati Rahayuni[2B-D]
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The video data were obtained from two international-level competitions: (1) the Indonesia Open Championship held at Padepokan Pencak Silat Indonesia (TMII), and (2) the ASEAN University Games hosted at Muhammadiyah University of Malang (UMM).

Based on these criteria, a total of 50 match videos were selected and analyzed in this study.

Data Collection Technique

Data collection was conducted using a visual observational survey technique, which involved systematic observation of video recordings to identify anticipatory behaviors during pull-based takedown situations. Video-based observation is widely used in combat sports research because it allows repeated viewing, slow-motion analysis, and detailed examination of movement sequences that may not be observable in real time (O'Donoghue, 2015).

Each video was reviewed multiple times to ensure accuracy and consistency in observation. The observation process focused on: the initial movement cues preceding a pull-based takedown attempt, the athlete's body positioning and balance response, the timing and direction of movement, and tactical adjustments made during the exchange.

All observations were recorded using structured observation sheets to maintain consistency across videos.

Data Analysis Technique

Data analysis followed a qualitative content analysis procedure adapted for sport performance observation. The analysis was conducted in several stages:

1. Initial Observation and Coding
   All video recordings were observed to identify sequences involving pull-based takedown attempts. These sequences were coded as units of analysis.
2. Categorization of Anticipatory Responses
   Based on movement characteristics and response timing, anticipatory behaviors were grouped into thematic categories. Through iterative observation and comparison, three main categories of anticipation were identified:
   a. Preventive anticipation, referring to early defensive actions aimed at avoiding takedown attempts through stable posture, distance control, and fundamental defensive positioning.
   b. Curative anticipation, referring to rapid corrective responses when a takedown threat had already emerged, such as balance recovery, body rotation, or force redirection.
   c. Adaptive anticipation, referring to strategic adjustments made across match situations in response to the opponent's fighting style and tactical patterns.
3. Interpretation of Patterns
   The identified categories were interpreted to reveal patterns of anticipatory behavior as they naturally occurred during competition. The analysis emphasized understanding how and when anticipation emerged rather than measuring frequency alone.

This analytical process allowed the study to describe real anticipatory patterns in pencak silat sparring matches in a systematic and theory-informed manner (Zellatifanny & Mudjiyanto, 2018).

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Trustworthiness of Data

To ensure the credibility and dependability of the findings, several strategies were applied. First, data triangulation was conducted by analyzing videos from different competitions and match contexts. Second, prolonged observation was applied through repeated video review to reduce observer bias. Third, the categoriza

Table 1.
International Video Samples from Indonesia Open and ASEAN University Games

MACH	AMOUNT		
	PA	PI	TOTAL
Internasional Indonesia Open	27	7	34
ASEAN University Games	10	6	16
TOTAL	**37**	**13**	**50**

Source: Samples from Indonesia Open and ASEAN University Games

Figure 1.
Research flow for identifying the types of anticipatory techniques for falls with pulls in the competition category

RESULTS AND DISCUSSION

Result

Based on the results of the analysis and identification of various anticipation techniques for pull-based takedowns applied by adult-category pencak silat sparring athletes, the researchers successfully identified a total of 11 techniques. These techniques are applied through diverse combinations, encompassing variations of movements adjusted to the specific situations in a match.

Table 2.
Types of anticipation techniques for pull-based takedowns in adult-category pencak silat

No.	Type of Technique	Description	Symbol
1	Anticipation Technique 1	Counterattack by pulling the opponent's body	T1
2	Anticipation Technique 2	Anticipation by stepping and deflecting the opponent's grip	T2
3	Anticipation Technique 3	Anticipation using a stable stance while lifting the opponent's body protector upward	T3
4	Anticipation Technique 4	Anticipation by stepping upward to change body position	T4
5	Anticipation Technique 5	Anticipation using a forward-weighted stance for body support	T5
6	Anticipation Technique 6	Anticipation by stepping sideways with forward support and stance adjustment	T6
7	Anticipation Technique 7	Anticipation by changing position (with or without stepping)	T7
8	Anticipation Technique 8	Counterattack by performing a scissoring technique	T8
9	Anticipation Technique 9	Counterattack by locking the opponent's leg using the arms and legs	T9

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No.	Type of Technique	Description	Symbol
10	Anticipation Technique 10	Counterattack by applying an upper clamp and locking the opponent's leg	T10
11	Anticipation Technique 11	Anticipation by sitting on the opponent's body protector	T11

The results of the qualitative analysis in this study indicate that there are three techniques most frequently used by athletes, which dominate the application of anticipation techniques for pull-based takedowns in the International Indonesia Open and ASEAN University Games. The three techniques are: Anticipation Technique 5 (anticipation using a forward-weighted stance) used 73 times, Anticipation Technique 3 (anticipation with a stable stance while lifting the opponent's body protector) used 26 times, and Anticipation Technique 4 (anticipation by stepping upward to change body position) used 22 times.

Based on the research findings, eleven types of anticipation techniques for pull-based takedowns were identified in competition. The implementation of these techniques has had a significant impact on the change in athletes' playing characteristics, especially after the new rules were introduced in 2022. These changes involve adaptations to more efficient strategies and tactics, requiring athletes to master pull-based takedown techniques more thoroughly, enabling them to utilize the new regulations to enhance their performance in the sparring arena.

Analysis of the 11 types of anticipation techniques for pull-based takedowns in the International Indonesia Open and ASEAN University Games, based on a total of 50 identified videos, revealed several techniques most frequently applied by athletes. These are: Anticipation Technique 5 (anticipation using a forward-weighted stance) applied 73 times, Anticipation Technique 3 (anticipation with a stable stance while lifting the opponent's body protector) applied 26 times, and Anticipation Technique 4 (anticipation by stepping upward to change body position) applied 22 times.

Based on data collected from championships held in July 2024, several anticipation techniques for pull-based takedowns are particularly popular among pencak silat athletes. The first and most commonly used technique is Anticipation Technique 5, which involves a forward-weighted stance. This technique is favored because it is considered highly effective and efficient, allowing athletes to focus on maintaining a stable stance while quickly and accurately shifting their body balance. The second technique, Anticipation Technique 3 (stable stance and lifting the opponent's body protector), requires strong stance stability and arm endurance to lift the opponent effectively. The third technique, Anticipation Technique 4 (stepping upward and changing body position), demands fast reflexes for stance adjustment and significant leg strength to maintain balance and optimize the movement.

Discussion

The findings of this study identified eleven distinct anticipation techniques used by pencak silat athletes to respond to pull-based takedown attempts during competition. The emergence and frequent application of these techniques strongly reflect the adaptive transformation of competitive behavior following the implementation of the

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revised pencak silat competition rules in 2022. These regulatory changes have expanded the tactical landscape of sparring matches, particularly by legitimizing various pulling and takedown techniques, thereby compelling athletes to refine their anticipatory skills to maintain competitive advantage (Muslikhin et al., 2023; IPSI, 2023).

From a performance perspective, the increased reliance on anticipation demonstrates that modern pencak silat competition is no longer dominated solely by reactive defense, but rather by proactive movement prediction and rapid decision-making. This aligns with findings in other combat sports, where anticipation has been identified as a critical determinant of elite performance, enabling athletes to initiate counteractions before an opponent's technique is fully executed (Williams et al., 2018; Cañal-Bruland et al., 2020).

Analysis of 50 competition videos from the International Indonesia Open and the ASEAN University Games revealed that several anticipation techniques were applied more frequently than others. Anticipation Technique 5 (forward-weighted stance) emerged as the most dominant, with 73 occurrences, followed by Anticipation Technique 3 (stable stance while lifting the opponent's body protector) with 26 occurrences, and Anticipation Technique 4 (stepping upward to change body position) with 22 occurrences. The dominance of these techniques suggests that athletes favor anticipatory responses that combine stability, efficiency, and rapid balance adjustment, which are essential under high-intensity sparring conditions.

The popularity of Anticipation Technique 5 can be attributed to its biomechanical efficiency. A forward-weighted stance allows athletes to maintain a lower center of gravity while facilitating rapid weight transfer, enabling both defensive resistance and immediate counterattack. Similar findings have been reported in judo and wrestling, where forward weight distribution enhances postural control and resistance to pulling forces (Turner et al., 2021; Díaz et al., 2022). In pencak silat, this anticipatory posture enables athletes to neutralize takedown attempts while remaining tactically active.

Anticipation Technique 3 requires a combination of stance stability, upper-body strength, and core endurance to counteract the opponent's pulling force effectively. This technique reflects a curative form of anticipation, where athletes respond rapidly once physical contact has been initiated. Previous research in combat sports emphasizes that such responses depend heavily on isometric and dynamic strength of the shoulder, arm, and trunk muscles, which function to maintain balance under external perturbation (Del Vecchio et al., 2019; Chaabène et al., 2017). Thus, the effectiveness of this technique underscores the importance of integrated strength training in pencak silat preparation.

Anticipation Technique 4, involving upward stepping and positional adjustment, highlights the role of reactive agility and neuromuscular coordination. This technique enables athletes to escape unfavorable pulling trajectories by altering body alignment and base of support. Reaction speed and movement redirection are well-established predictors of success in striking and grappling sports, particularly when athletes face unpredictable attack patterns (Ali, 2022; Gabbett et al., 2021). The frequent use of this

technique indicates that pencak silat athletes rely heavily on rapid lower-limb responses to manage spatial and temporal constraints during matches.

Optimal execution of these anticipation techniques requires a holistic preparation framework, encompassing physical conditioning, technical proficiency, tactical intelligence, and psychological readiness. Mujahid and Subekti (2021) emphasize that competitive success in pencak silat is achieved through the integration of these components, rather than through isolated skill development. Physical fitness serves as the foundation that enables athletes to sustain high-intensity exchanges and execute anticipatory responses with precision and consistency (Dona Merlin, 2020).

Specifically, Anticipation Technique 5 necessitates well-developed lower limb strength, balance, and agility. Plyometric exercises such as standing jump-overs and unilateral reactive drills have been shown to enhance leg power and dynamic stability, which are critical for forward-weighted postural control (Arif, 2021; Markovic & Mikulic, 2019). Complementary agility training, including zig-zag runs and shuttle runs, further improves rapid directional changes and coordination, supporting effective anticipation during sparring exchanges (Trisnowiyanto, 2016).

For Anticipation Technique 3, resistance-based pulling exercises are essential to develop upper-body strength and endurance. Resistance band training has been widely recognized as an effective modality for improving pulling mechanics, muscular endurance, and core stability, particularly in combat sports that involve grappling and clinching actions (Ihyaudin, 2024; Suchomel et al., 2018). These adaptations directly support the ability to resist and counteract pull-based takedowns in pencak silat.

Anticipation Technique 4 requires enhanced complex reaction speed, defined as the ability to execute rapid movements in response to unpredictable stimuli (Ali, 2022). Reaction-based drills combined with resistance-assisted kicking and stepping exercises have been shown to improve neuromuscular responsiveness and movement efficiency (Gabbett et al., 2021). Given that a substantial proportion of scoring actions in pencak silat originate from kicking techniques (Nugroho, 2015), improving reaction speed and positional adjustment is particularly relevant for competitive success.

Despite its contributions, this study has certain limitations. Although 50 videos were initially targeted, only 46 contained clearly identifiable anticipatory responses to pull-based takedowns. However, this limitation does not diminish the study's significance, as it remains one of the first investigations to systematically classify anticipation techniques for pull-based takedowns in adult-category pencak silat sparring. The use of recent competition footage from regional, national, and international events further strengthens the relevance and ecological validity of the findings.

Overall, this study contributes novel insights into the evolving technical–tactical demands of modern pencak silat. By identifying and interpreting anticipation techniques in response to pull-based takedowns, the findings provide a scientific basis for developing anticipation-oriented training models, thereby supporting performance enhancement and injury risk reduction at the elite level.

CONCLUSION

Based on the data analysis presented in the study above, it can be concluded that pull-based takedown techniques are the most common and frequently used methods by adult-category pencak silat sparring athletes in international competitions such as the Indonesia Open and ASEAN University Games. The most frequently applied techniques are Anticipation Technique 5 (anticipation using a forward-weighted stance), used 73 times; Anticipation Technique 3 (anticipation with a stable stance while lifting the opponent's body protector), used 26 times; and Anticipation Technique 4 (anticipation by stepping upward to change body position), used 22 times.

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