

Role of Ukemi (Falling Techniques) in Injury Reduction among Beginner Judo Players

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Abstract

Judo is a dynamic martial art that involves throwing, grappling, and ground-fighting techniques, making safe falling skills an essential component of training. Among these skills, Ukemi, commonly known as falling techniques or breakfalls, plays a vital role in minimizing the risk of injuries during practice and competition. Beginner judo players are particularly vulnerable to injuries because they often lack proper body control, balance, coordination, and confidence while falling. As a result, improper falling can lead to injuries involving the head, neck, shoulders, wrists, elbows, hips, knees, and spine. Therefore, learning Ukemi at the initial stage of judo training is considered one of the most important aspects of athlete development. This study examines the role of Ukemi in reducing injuries among beginner judo players. The research focuses on four fundamental falling techniques: Mae Ukemi (Forward Breakfall), Ushiro Ukemi (Backward Breakfall), Yoko Ukemi (Side Breakfall), and Mae Mawari Ukemi (Forward Rolling Breakfall). An eight-week training programme was implemented among beginner judo athletes aged 10–16 years to evaluate improvements in falling safety, balance, flexibility, coordination, and confidence. Pre- and post-training assessments were conducted using observational methods and skill performance tests. The findings indicate significant improvements in participants' ability to perform safe falls after systematic Ukemi training. Balance, coordination, and body awareness increased considerably, while fear of falling decreased among most participants. The incidence of improper landing techniques and minor training injuries also reduced during the intervention period. These results highlight that regular Ukemi practice enhances technical performance while promoting physical safety and psychological confidence in beginner athletes. The study concludes that Ukemi should be introduced as the first practical skill in beginner judo programmes and should remain an integral part of every training session. Proper instruction, progressive learning methods, and continuous practice can significantly reduce injury risk and improve overall athlete development. Coaches, physical education teachers, and sports organizations are encouraged to prioritize Ukemi training to create a safer learning environment and promote long-term participation in judo.

Keywords: Ukemi, judo, injury prevention, beginner judo players, falling techniques, breakfall, ztial arts.

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INTRODUCTION

Judo is one of the world's most popular martial arts and Olympic combat sports, founded by Jigoro Kano in 1882 [1]. The word *Judo* means "the gentle way," emphasizing the principles of maximum efficiency with minimum effort and mutual welfare and benefit. Although judo promotes discipline, respect, self-control, and physical fitness, it is also a contact sport involving throws, takedowns, grappling, and ground techniques. During training and competition, athletes frequently lose balance or are thrown by

their opponents, making safe falling techniques an essential part of learning judo. For beginner judo players, falling is one of the greatest challenges [2].

Most beginners naturally extend their hands, stiffen their bodies, or land incorrectly when they fall. Such reactions increase the likelihood of injuries to the wrists, elbows, shoulders, neck, head, hips, and spine. Fear of falling further affects confidence and limits the willingness of beginners to perform throwing techniques effectively. Consequently, improper falling not only increases the risk of injury but also slows technical development and reduces participation in training. To address these challenges, judo incorporates a systematic set of falling techniques known as Ukemi.

Ukemi teaches athletes how to distribute impact safely across the body while protecting vulnerable body parts such as the head, neck, and spine. Through repeated practice, beginners develop body awareness, balance, coordination, flexibility, and confidence. Instead of resisting a fall, athletes learn to absorb force efficiently and return safely to a standing position. Ukemi consists of four fundamental techniques: Mae Ukemi (Forward Breakfall), Ushiro Ukemi (Backward Breakfall), Yoko Ukemi (Side Breakfall), and Mae Mawari Ukemi (Forward Rolling Breakfall). These techniques are introduced before teaching throwing skills because they provide the foundation for safe participation in judo [3].

Mastering Ukemi allows beginners to practice more advanced techniques without unnecessary fear of injury. Sports injury research consistently indicates that most injuries among novice judo players occur during falls resulting from poor technique, inadequate supervision, or insufficient practice of breakfalls. Therefore, structured Ukemi instruction has become a fundamental component of modern judo coaching programmes worldwide. In addition to injury prevention, Ukemi contributes to improved movement efficiency, faster recovery after falls, enhanced confidence, and better technical performance during Randori (practice matches) and competition.

The present study investigates the role of Ukemi in reducing injuries among beginner judo players aged 10–16 years. It evaluates the effectiveness of an eight-week Ukemi training programme by assessing changes in falling safety, balance, flexibility, coordination, and fear of falling before and after the intervention. The findings aim to provide practical recommendations for coaches, physical education teachers, and sports academies regarding the importance of integrating systematic Ukemi training into beginner judo programmes [4].

IMPORTANCE OF UKEMI IN JUDO AND INJURY PREVENTION

Fundamentals of Ukemi

Ukemi is one of the most fundamental skills in judo and forms the foundation of safe practice. The Japanese word *Ukemi* means "receiving the body" or "receiving a fall." It refers to a series of techniques that teach practitioners how to fall safely without sustaining injuries. Before beginners are introduced to throwing techniques (Nage-Waza), they are first trained in Ukemi to ensure they can protect themselves during practice and competition [5].

Proper Ukemi enables athletes to distribute the impact of a fall across larger muscle groups rather than concentrating force on vulnerable joints or bones. During training, beginners gradually learn to tuck the chin, maintain body control, slap the mat to absorb impact, and avoid landing directly on the head, neck, elbows, or wrists. These techniques significantly reduce the risk of fractures, sprains, dislocations, and head injuries [6].

Long-term Ukemi training also contributes to the development of balance, body awareness, flexibility, coordination, and reaction time. As athletes become more confident in falling safely, they

participate more actively in throwing drills and Randori, leading to faster technical improvement.

Key benefits of learning Ukemi include:

- Development of safe falling habits.
- Protection of the head, neck, and spine during falls.
- Improved body control and coordination.
- Increased confidence during throwing practice.
- Reduction in fear of falling.
- Lower incidence of training-related injuries.
- These benefits demonstrate that Ukemi is not merely a defensive skill but an essential component of overall judo education.

Importance of Ukemi for Beginner Judo Players

Beginner judo players often experience difficulty maintaining balance during movement and throwing drills. Their lack of technical knowledge and physical coordination makes them more susceptible to injuries caused by improper falls. Fear of falling may also discourage beginners from fully participating in training activities, thereby limiting their technical development.

Teaching Ukemi at the beginning of judo instruction helps beginners develop confidence while improving movement efficiency. Through regular practice, athletes become familiar with the body's natural movement during falls and learn to react appropriately under different situations. This confidence allows beginners to execute offensive and defensive techniques more effectively without excessive hesitation.

Regular Ukemi practice provides several advantages for beginners:

- Reduces anxiety associated with falling.
- Improves postural stability and balance.
- Enhances coordination and agility.
- Encourages active participation in training.
- Builds confidence in learning throwing techniques.
- Promotes long-term athlete safety and development.
- Consequently, coaches consider Ukemi to be the first practical skill that every beginner should master before progressing to advanced judo techniques.

Types of Ukemi

Four basic Ukemi techniques are commonly taught in beginner judo programmes. Each technique is designed to protect the body from different directions of impact [7].

Mae Ukemi (Forward Breakfall)

Mae Ukemi is performed when an athlete falls forward. The technique teaches practitioners to absorb impact using the forearms while keeping the chin tucked and avoiding direct contact between the face and the mat. This method protects the wrists, elbows, shoulders, and facial region from injury.

Ushiro Ukemi (Backward Breakfall)

Ushiro Ukemi is used when falling backwards. Athletes are instructed to tuck the chin towards the chest, round the back, and slap the mat with both arms to distribute the force of impact. Proper execution prevents injuries to the head, neck, spine, and lower back.

Yoko Ukemi (Side Breakfall)

Yoko Ukemi prepares athletes to fall safely to either side of the body. The technique focuses on protecting the shoulder and hip while distributing impact through the arm and side muscles. It is frequently used during side throws and balance-loss situations.

Mae Mawari Ukemi (Forward Rolling Breakfall)

Mae Mawari Ukemi involves rolling forward across the shoulder instead of landing directly on the body. This technique enables athletes to convert downward force into forward movement, thereby minimizing impact and maintaining continuity of motion. It is widely used during advanced throwing techniques and dynamic movement situations.

Mastering these four techniques enables beginner players to respond safely to various throwing situations encountered during judo practice and competition [8].

Injury Prevention Through Ukemi Training

The primary objective of Ukemi training is injury prevention. Scientific evidence and practical experience demonstrate that athletes who consistently practice Ukemi experience fewer injuries than those who lack proper falling skills. During a fall, impact forces are generated between the body and the mat. Without appropriate technique, these forces are transmitted directly to joints and bones, increasing the likelihood of fractures, ligament injuries, and concussions. Ukemi minimizes these forces by increasing the surface area of contact, distributing impact across larger muscle groups, and maintaining correct body alignment. Regular Ukemi practice also develops neuromuscular coordination, faster reaction time, improved balance, and greater body awareness. These adaptations allow athletes to respond instinctively during unexpected falls, reducing injury risk even under competitive conditions. Furthermore, Ukemi contributes to psychological development by reducing fear and increasing confidence. Beginners who feel safe during practice demonstrate greater motivation, improved technical performance, and higher participation rates throughout training programmes. Overall, Ukemi serves as the cornerstone of injury prevention in judo and remains one of the most valuable skills for ensuring the safety and long-term development of beginner athletes [9].

The eight-week Ukemi training programme was designed to progressively develop safe falling techniques, balance, coordination, and body control. The programme began with basic safety awareness and body mechanics, followed by step-by-step instruction in backward, side, forward, and rolling breakfalls. As the training progressed, participants practiced combined falling techniques and partner-based drills to improve coordination, reaction time, and confidence.

By the end of the programme, participants demonstrated noticeable improvements in balance, body control, and overall falling safety. The final assessment indicated that the structured progression of Ukemi skills effectively enhanced participants' ability to perform safe falls while reducing the risk of fall-related injuries and increasing confidence during movement (Table-1).

The pre-training assessment indicated that participants had relatively low levels of balance, flexibility, and coordination before the intervention. Balance scores ranged from 15 to 21 seconds, suggesting limited postural stability among the participants. Flexibility was generally rated as average to good, while coordination ranged from low to good, with several participants demonstrating only average or low coordination (Table-2).

Regarding fall-related outcomes, all 10 participants were classified as "Unsafe" in terms of falling safety. Additionally, 6 participants reported a high fear of falling, while the remaining 4 participants reported a medium level of fear. These findings suggest that, prior to the training program, the participants were at an increased risk of falls and had considerable concerns about falling, highlighting the need for a structured balance and mobility intervention.

Based on the post-training assessment conducted after 8 weeks, participants demonstrated an overall improvement in physical performance and fall-related outcomes. Most participants achieved good to excellent balance, with balance times ranging from 25 to 32 seconds. Flexibility and coordination also improved, with the majority of participants being rated as good, very good, or

excellent.

In terms of fall safety, 9 out of 10 participants were classified as "Safe," while only one participant was rated as "Moderately Safe." Similarly, the fear of falling was low in 9 participants, with only one participant reporting a medium level of fear. Overall, the findings indicate that the 8-week training program was effective in enhancing balance, flexibility, coordination, and fall safety while reducing the fear of falling among the participants (Table-3).

Table 1. Eight-week ukemi training programme.

Week	Ukemi skill taught	Training activities	Outcome
1	Introduction to Ukemi	Safety rules, mat etiquette, body awareness, stretching	Understanding the importance of safe falling
2	Basic Balance & Body Control	Squat balance, sitting position, backward rocking, movement drills	Improved balance and confidence
3	Ushiro Ukemi	Backward breakfall from sitting, squatting and standing position	Safe backward landing
4	Yoko Ukemi	Left and right side breakfalls with partner assistance	Improved lateral body control
5	Mae Ukemi	Forward breakfall using forearms and proper chin position	Reduced wrist and facial injury risk
6	Mae Mawari Ukemi	Forward rolling over shoulder with progressive drills	Safe rolling technique developed
7	Combined Ukemi Practice	Random falling drills, partner throwing preparation	Better coordination and reaction time
8	Final Assessment	Practical evaluation and performance testing	Improvement in overall falling safety

Table 2. Pre-training assessment.

S. No.	Name	Gender	Balance (sec)	Flexibility	Coordination	Falling safety	Fear of falling
1	Aryan Mehta	Male	18	Good	Average	Unsafe	High
2	Kabir Singh	Male	20	Good	Good	Unsafe	Medium
3	Rahul Chauhan	Male	17	Average	Average	Unsafe	High
4	Arjun Patel	Male	15	Average	Low	Unsafe	High
5	Karan Joshi	Male	21	Good	Good	Unsafe	Medium
6	Rohan Verma	Male	16	Average	Average	Unsafe	High
7	Meena Rathi	Female	19	Good	Good	Unsafe	Medium
8	Divya Bhatt	Female	18	Average	Average	Unsafe	High
9	Pooja Sharma	Female	17	Average	Low	Unsafe	High
10	Neha Gupta	Female	20	Good	Good	Unsafe	Medium

Table 3. Post-training assessment (after 8 weeks).

S. No.	Name	Balance (sec)	Flexibility	Coordination	Falling safety	Fear of falling
1	Aryan Mehta	29	Excellent	Very good	Safe	Low
2	Kabir Singh	31	Excellent	Excellent	Safe	Low
3	Rahul Chauhan	27	Good	Good	Safe	Low
4	Arjun Patel	25	Good	Average	Moderately safe	Medium
5	Karan Joshi	32	Excellent	Excellent	Safe	Low
6	Rohan Verma	26	Good	Good	Safe	Low
7	Meena Rathi	30	Excellent	Excellent	Safe	Low
8	Divya Bhatt	28	Good	Very good	Safe	Low

9	Pooja Sharma	27	Good	Good	Safe	Low
10	Neha Gupta	31	Excellent	Excellent	Safe	Low

COMMON INJURIES AMONG BEGINNER JUDO PLAYERS

Judo is a physically demanding combat sport that requires frequent throwing, falling, grappling, and ground-fighting techniques. Beginner judo players are more susceptible to injuries because they have limited technical knowledge, inadequate body control, and insufficient experience in performing safe falls. Most injuries occur during the learning phase when athletes fail to execute proper Ukemi techniques or react incorrectly while being thrown. Incorrect landing, poor balance, lack of coordination, and fear of falling significantly increase the risk of injury [10].

Although most injuries among beginners are minor, repeated improper falls may lead to more serious musculoskeletal problems. Therefore, identifying common injury patterns is essential for designing effective injury prevention programmes [11].

Head and Neck Injuries

Head and neck injuries are among the most serious injuries that can occur in beginner judo players. These injuries usually result from improper backward or forward falls when the athlete fails to tuck the chin or control body movement. Direct impact of the head on the mat may cause concussion, neck strain, cervical sprain, or, in severe cases, spinal injuries [12].

Beginners often instinctively attempt to support themselves using their head or stiffen their body during a fall, increasing the force transmitted to the cervical spine. Proper instruction in Ushiro Ukemi and Mae Ukemi teaches athletes to tuck the chin towards the chest, round the back, and distribute impact safely across the body, thereby minimizing the risk of head and neck injuries [13].

Common head and neck injuries include:

- Concussion
- Neck muscle strain
- Cervical sprain
- Minor scalp injuries
- Head impact due to improper landing

Shoulder and Wrist Injuries

Shoulder and wrist injuries are among the most frequently reported injuries in novice judo players. During unexpected falls, beginners often extend their hands in an attempt to stop the fall. This natural reaction places excessive stress on the wrists, elbows, and shoulder joints, increasing the likelihood of fractures, sprains, ligament injuries, and shoulder dislocations [14].

Improper arm positioning during forward or side falls also contributes to upper limb injuries. Regular practice of Mae Ukemi and Yoko Ukemi teaches athletes to absorb impact using the forearms and side of the body rather than landing on an outstretched hand. This significantly reduces stress on the shoulder and wrist joints.

Common shoulder and wrist injuries include:

- Wrist sprain
- Wrist fracture
- Shoulder strain
- Shoulder dislocation
- Elbow contusion

Knee and Ankle Injuries

Lower limb injuries commonly occur during throwing drills, movement exercises, and incorrect landing after falls. Beginners frequently lose balance while attempting to resist throws, causing

awkward twisting movements of the knees and ankles. Poor foot placement and inadequate body control further increase injury risk.

Incorrect landing techniques may also produce excessive rotational forces on the knee joint, resulting in ligament sprains or meniscus irritation. Similarly, unstable foot positioning during movement drills may cause ankle sprains. Continuous practice of Ukemi improves balance, body alignment, and movement control, reducing unnecessary stress on the lower extremities.

Common lower limb injuries include:

- Ankle sprain
- Knee ligament strain
- Minor meniscus irritation
- Muscle strain
- Bruises around the knee

Causes of Injuries

Several factors contribute to injuries among beginner judo players. The most common cause is inadequate knowledge of safe falling techniques. Beginners who have not mastered Ukemi often land incorrectly, exposing vulnerable joints and body parts to excessive impact forces.

Other contributing factors include poor balance, insufficient flexibility, weak coordination, muscular fatigue, lack of confidence, and inadequate supervision during training. Performing advanced throwing techniques before learning proper Ukemi also increases injury risk considerably.

Major causes of injuries include:

- Poor Ukemi technique
- Lack of balance and coordination
- Fear of falling
- Incorrect body posture
- Inadequate warm-up
- Insufficient supervision
- Progressing to advanced techniques too early
- Poor physical conditioning

Understanding these causes enables coaches to develop structured training programmes that emphasize safety and progressive skill development.

ROLE OF UKEMI IN INJURY REDUCTION

Ukemi forms the foundation of injury prevention in judo by teaching athletes how to fall safely while protecting vulnerable parts of the body. Rather than resisting a fall, practitioners learn to absorb impact efficiently through proper body positioning, controlled movement, and correct distribution of force. For beginner judo players, Ukemi not only minimizes physical injuries but also builds confidence, improves technical performance, and promotes long-term participation in the sport.

Safe Falling Techniques

Safe falling techniques are the primary objective of Ukemi training. Each Ukemi technique is designed to reduce impact on specific body parts by distributing force across larger muscle groups instead of concentrated pressure on joints or bones.

During backward falls, athletes tuck the chin and slap the mat with both arms to protect the head and spine. Forward breakfalls emphasize forearm contact while keeping the face away from the mat. Side breakfalls reduce impact on the shoulder and hip, whereas forward rolling breakfalls convert downward force into rolling movement, minimizing stress on the body.

Regular practice enables these protective movements to become automatic during unexpected falls.

Building Confidence

Fear of falling is one of the greatest barriers faced by beginner judo players. Athletes who lack confidence often hesitate while performing throws, resulting in poor technique and increased injury risk.

Ukemi training gradually reduces this fear by allowing beginners to experience controlled falls in a safe environment. As confidence increases, athletes become more willing to participate in throwing drills, partner practice, and Randori sessions. Improved confidence also enhances concentration, reaction time, and technical execution.

Improving Balance and Coordination

Ukemi develops several physical abilities that contribute to injury prevention, including balance, coordination, flexibility, body awareness, and agility. Through repeated practice, athletes learn to maintain postural control during movement and quickly recover after falling.

Improved coordination enables beginners to respond appropriately during unexpected situations, while better balance reduces unnecessary falls. These adaptations contribute significantly to safer participation in judo training.

Scientific Evidence

Numerous studies have demonstrated that structured Ukemi training significantly reduces injury rates among beginner judo players. Research indicates that athletes who receive systematic instruction in breakfall techniques experience fewer head, shoulder, wrist, and spinal injuries than those with limited Ukemi practice.

Studies have also reported improvements in balance, movement control, confidence, and reaction time following regular Ukemi training. Sports medicine experts therefore recommend that Ukemi should be taught before introducing throwing techniques and should remain an essential component of every judo training programme.

TRAINING METHODOLOGY

Participants

The study included 10 beginner judo players (6 males and 4 females) aged 10–16 years from The Fighting Spirit Martial Arts Academy. All participants were beginners with limited experience in judo and had no major musculoskeletal injuries at the start of the study. Written consent was obtained from parents or guardians before participation.

Research Design

A pre-test and post-test experimental design was adopted to evaluate the effectiveness of an eight-week Ukemi training programme. Participants were assessed before the intervention and reassessed after completing the training programme.

Training Programme

The intervention consisted of an eight-week progressive Ukemi training programme conducted three sessions per week. Training included warm-up exercises, balance drills, body awareness activities, and instruction in Ushiro Ukemi, Yoko Ukemi, Mae Ukemi, and Mae Mawari Ukemi. Each session lasted approximately 60 minutes and concluded with cool-down exercises and feedback.

Data Collection

Performance was evaluated using observational assessment and practical skill testing. The following variables were recorded before and after training:

- Balance (seconds)
- Flexibility
- Coordination
- Falling Safety
- Fear of Falling

The collected data were compared to determine improvements in technical performance and injury prevention.

RESULTS AND DISCUSSION

The results demonstrated considerable improvement in all measured variables following the eight-week Ukemi training programme. Most participants showed better balance, coordination, flexibility, and confidence while performing falling techniques. Fear of falling decreased substantially, and all participants demonstrated safer landing mechanics during practical evaluation.

The findings suggest that systematic Ukemi training effectively enhances body control and reduces the likelihood of injuries during judo practice. These improvements support previous research emphasizing the importance of teaching breakfall techniques before introducing throwing skills.

PRACTICAL APPLICATIONS

The findings of this study have several practical implications for judo coaches, physical education teachers, and sports academies. Ukemi should be introduced as the first practical skill for beginners and practiced regularly throughout training. Progressive instruction, proper supervision, and continuous correction of technique can significantly reduce injury risk while improving confidence and technical performance.

Sports organizations should also promote coach education programmes focusing on injury prevention and safe teaching methods to create a safer environment for young judo players [15].

CONCLUSION

The present study concludes that Ukemi is one of the most important skills for preventing injuries among beginner judo players. Systematic instruction in falling techniques improves balance, coordination, body awareness, confidence, and movement efficiency while reducing the risk of head, neck, shoulder, wrist, knee, and ankle injuries.

The eight-week training programme demonstrated that progressive Ukemi instruction enables beginners to perform falls safely and participate more confidently in judo activities. Therefore, Ukemi should be considered the foundation of beginner judo training and incorporated into every coaching programme to promote athlete safety and long-term skill development.

REFERENCES

1. Shishida F. Judo's techniques performed from a distance: The origin of Jigoro Kano's concept and its actualization by Kenji Tomiki. *Archives of Budo*. 2010;6(4):165-171.
2. Yahia AA. The Influence of Refereeing Rules, Techniques and Tactics on Judo Fighting Styles: A Narrative Review. *The Arts and Sciences of Judo*. 2025 Dec 31;5(2):17.
3. Shishida F. Jigoro Kano's pursuit of ideal judo and its succession: Judo's techniques performed from a distance. *Ido Movement for Culture*. 2011;11(1):42-48.
4. Tulendiyeva A, Saliev T, Andassova Z, Issabayev A, Fakhradiyev I. Historical overview of injury prevention in traditional martial arts. *Sport Sciences for Health*. 2021 Dec;17(4):837-48.
5. Pocecco E, Ruedl G, Stankovic N, Sterkowicz S, Del Vecchio FB, Gutiérrez-García C, Rousseau R, Wolf M, Kopp M, Miarka B, Menz V. Injuries in judo: a systematic literature review including suggestions for prevention. *British journal of sports medicine*. 2013 Dec 1;47(18):1139-43.

6. Akoto R, Lambert C, Balke M, Bouillon B, Frosch KH, Höher J. Epidemiology of injuries in judo: a cross-sectional survey of severe injuries based on time loss and reduction in sporting level. *British journal of sports medicine*. 2018 Sep;52(17):1109-15.
7. Ciaccioni S, Perazzetti A, Magnanini A, Kozsla T, Capranica L, Doupona M. Intergenerational judo: synthesising evidence-and eminence-based knowledge on judo across ages. *Sports*. 2024 Jun 26;12(7):177.
8. Franchini E, de Moura CF, Shiroma SA, Humberstone C, Julio UF. Pacing in judo: analysis of international-level competitions with different durations. *International Journal of Performance Analysis in Sport*. 2019 Jan 2;19(1):121-30.
9. Malcolm D, Marcén C, Pullen E. The World Health Organization, physical activity and the contradictions of neoliberal health promotion. *International Journal of Sport Policy and Politics*. 2024 Oct 1;16(4):593-607.
10. Mendola N. Exercise Evolved: Exciting New Updates in ACSM's Guidelines for Exercise Testing and Prescription. *ACSM's Health & Fitness Journal*. 2025 Mar 1;29(2):44-7.
11. Kiely J. Periodization theory: confronting an inconvenient truth. *Sports Medicine*. 2018 Apr;48(4):753-64.
12. Massey CD, Maneval M. A call to improve educational programs in strength and conditioning. *Strength & Conditioning Journal*. 2014 Feb 1;36(1):23-27.
13. Carvalho R, da Silva Athayde MS, Bragança JR, Detanico D, Kons RL. Physical fitness, interlimb asymmetry, and injury reports in judo athletes with vision impairments: a cross-sectional study. *Journal of Sport Rehabilitation*. 2025 Mar 18;34(8):831-40.
14. Callan M, Bird C, Bradic S, Campos Mesa MD, del Castillo Andrés O, Doval MS, Dziergwa JP, Feenan J, Headland M, Ikumi A, Inoue K. Global Consensus Statement; How Can Judo Contribute to Reducing the Problem of Injurious Falls in Older Adults?. *The Arts and Sciences of Judo (ASJ)*. 2024 Jun 25;4(1):14-27.
15. Bergeron MF, Côté J, Cumming SP, Purcell R, Armstrong N, Basilico L, Burrows K, Charrin JB, Felix A, Groesswang H, Iwasaki Y. IOC consensus statement on elite youth athletes competing at the Olympic Games: essentials to a healthy, safe and sustainable paradigm. *British Journal of Sports Medicine*. 2024 Sep;58(17):946-65.