RESEARCH ARTICLE

©2023 The Academy of Environmental Biology, India

Journal of Ecophysiology and Occupational Health, *Vol 25(2), DOI: 10.18311/jeoh/2025/46014, 255-262, June 2025*

ISSN (Online) : 0972-4397
ISSN (Online) : 0974-0805

Comparing the Effectiveness of Wobble Board and Uniaxial Rocker Board Balance Training in Functional Recovery of Subjects with Sub-Acute Grade 2 Inversion Ankle Sprain

Bhavesh Lulla, Vinod Kumar Kanakapura Chananke Gowda* and Swapna Rout

College of Physiotherapy, School of Health Sciences, Dayananda Sagar University, Harohalli - 5621172, Ramnagara, Bangalore, Karnataka, India; vinod-mpt@dsu.edu.in

Abstract

Introduction: Ankle sprains, commonly referred to as inversion or supination ankle sprains, occur due to forced plantar flexion or inversion, leading to varying degrees of lateral ligament damage. While generally considered a benign injury, inadequate rehabilitation can result in persistent symptoms, affecting 55% to 72% of patients between 6 weeks to 18 months post-injury. The frequency and duration of these complications have raised concerns regarding optimal treatment strategies for ankle sprains. **Aim:** This study aims to compare the effectiveness of wobble board and uniaxial rocker board balance training in functional recovery following Grade 2 inversion ankle sprain. **Methodology:** A total of 40 patients, both male and female, aged between 18-35 years, diagnosed with Grade 2 ankle inversion sprains were assessed using the talar tilt and anterior drawer tests. Patients with negative results on these tests and meeting the inclusion criteria were enrolled in the study. Pre-test and post-test outcome measures, including the Star Excursion Balance Test (SEBT) and the Ankle Joint Functional Assessment Questionnaire (AJFAQ), were used to assess balance and functional recovery. **Results:** No significant difference ($p>0.05$) was observed between Group A (wobble board) and Group B (uniaxial rocker board) during the pre-test in SEBT and AJFAQ scores. However, a significant difference ($p<0.05$) was found between the two groups during the post-test, with Group B showing greater improvement in both balance (SEBT) and functional recovery (AJFAQ) scores compared to Group A ($p<0.05$). **Conclusion:** Both the wobble board and uniaxial rocker board are effective tools for balance training and functional recovery in patients with Grade 2 ankle inversion sprain. However, the uniaxial rocker board (Group B) demonstrated superior efficacy in improving postural control and overall recovery compared to the wobble board. These findings underscore the importance of targeted rehabilitation protocols using balance training devices to enhance recovery outcomes after ankle sprain injuries.

Major Findings: The uniaxial rocker board was significantly more effective than the wobble board in enhancing balance and functional recovery post Grade 2 ankle inversion sprain.

Keywords: Ankle Inversion Sprain, Ankle Joint Functional Assessment Questionnaire, Star Excursion Balance Test, Uniaxial Rocker Board, Wobble Board

1. Introduction

Participation in sports and physical activity, though beneficial for overall health, is associated with a risk of injury, particularly as more people adopt an active lifestyle[1]. Sports injuries are widespread and, while rarely life-threatening, they can result in significant pain, disability, and healthcare expenses, as well as absenteeism from work. This has made sports injuries an under-recognized public health concern globally[2]. Among these,

**Author for correspondence*

Article Received on: 24.09.2025 Revised on: 10.11.2024 Accepted on: 11.11.2024

ankle sprains are one of the most common, accounting for 20% to 40% of all sports-related injuries. With the rising promotion of physical activity across nations, addressing the prevention and rehabilitation of such injuries is of national and international importance[3].

Ankle sprains are particularly prevalent in sports that require frequent jumping, landing on one foot, or sharp cutting movements, such as basketball, soccer, and volleyball. Nearly 85% of ankle injuries are sprains, of which 85% are lateral inversion sprains, while only 15% are eversion sprains. The dominant leg is more frequently affected, particularly in individuals aged 18-35. Lateral ankle sprains occur approximately four times more often than medial sprains, primarily due to the relative instability of the lateral joint and weaker ligaments. Such injuries typically result from an excessive inversion motion, leading to ligament damage[4].

The economic burden of ankle sprains is significant, as they often result in prolonged treatment and rehabilitation, with some cases leading to chronic instability. Rehabilitation costs, including physiotherapy, can add strain to healthcare systems globally. Furthermore, incomplete rehabilitation may lead to recurrent injuries and chronic ankle instability, contributing to long-term disability[5]. This poses a substantial challenge, as it emphasizes the need for effective rehabilitation protocols to minimize re-injury risk and promote complete functional recovery.

To address these challenges, effective rehabilitation strategies are essential. Balance training has been widely recognized as a critical component of recovery for lateral ankle sprains[6,7]. However, research comparing different balance training tools is still limited. Specifically, the comparative effectiveness of wobble boards versus uniaxial rocker boards in improving postural control and functional recovery has not been sufficiently explored. Addressing this gap in the literature, this study seeks to evaluate which of these tools is more effective for rehabilitation following Grade 2 inversion ankle sprain.

The purpose of this research is to provide evidence-based insights into optimizing rehabilitation protocols to enhance recovery and prevent recurrence of ankle sprains. By comparing the outcomes of wobble board and uniaxial rocker board training, this study aims to contribute new findings that could lead to improved clinical practices. The research will examine how each device impacts functional recovery, postural stability, and overall rehabilitation outcomes. Objectives was to evaluate the effectiveness of wobble board versus uniaxial rocker board in enhancing balance, postural control, and functional recovery in patients with Grade 2 inversion ankle sprain, using pre and post-test measures such as the Star Excursion Balance Test (SEBT) and Ankle Joint Functional Assessment Questionnaire (AJFAQ).

2. Materials and Methods

2.1 Participants

Based on a priori sample size calculations and previous studies, 40 participants were sufficient to detect a significant change in variables with power set at 80% and alpha level of 0.05[8]. The study included 40 participants (both male and female), aged between 18 and 35 years, who had sustained a Grade 2 inversion ankle sprain. All participants were recruited from local clinics and rehabilitation centers after being diagnosed with a sub-acute Grade 2 ankle inversion sprain[9]. The inclusion criteria required participants to have a history of lateral ankle sprain confirmed by clinical tests such as the Talar Tilt test and Anterior Drawer test, with negative results indicating the absence of instability[10]. Participants were excluded if they had a history of prior ankle surgery, fractures, Central Nervous System (CNS) disorders affecting balance, or other musculoskeletal injuries that could interfere with balance or functional recovery[11]. Prior to the commencement of the study, ethical approval was obtained from the institutional review board (IEC/IRB/DSU/MPT/2023/023), and the study was registered with the Clinical Trials Registry India (2024/04/083593). Written informed consent was then obtained from all participants.

2.1.1 Research Design

This was a randomized controlled trial designed to compare the effectiveness of two balance training interventions-wobble board and uniaxial rocker board[12,13] for functional recovery following Grade 2 inversion ankle sprain. Participants were randomly assigned to either the Wobble Board group (Group A) or the Uniaxial Rocker Board group (Group B) using a computer-generated randomization process[14]. Both groups underwent balance training sessions for 6 weeks, with pre- and post-test assessments conducted to measure the impact of the interventions[15]. A single-blind design was employed,

whereby the assessors were blinded to the group allocations to reduce bias (Figure 1).

2.2 Assessment Procedures and Outcome Measures

All participants underwent baseline assessments before the start of the training interventions (pre-test) and were reassessed after completing the six-week training program (post-test). The following outcome measures were used to evaluate balance and functional recovery.

1. **Star Excursion Balance Test (SEBT)**- The Star Excursion Balance Test (SEBT) is a widely used assessment tool in sports science and rehabilitation to evaluate dynamic balance, postural control, and functional reach. Its validity and reliability have been the subject of multiple studies, especially in athletes and individuals undergoing rehabilitation. The Star Excursion Balance Test (SEBT) was conducted to evaluate dynamic balance and lower limb stability. During the test, participants stood on one leg at the center of a grid with eight lines radiating in different directions, resembling a star. The goal was to reach as far as possible with the opposite leg along each line while maintaining balance. After each reach, the participant returned to the center before proceeding to the next direction. The reach distance was recorded, and any loss of balance or movement of the stance foot invalidated the trial. The test was performed 3 times for accuracy, and the best reach distances were used for analysis. The SEBT was a reliable measure commonly employed in sports and rehabilitation to assess postural control and predict injury risks[16].
2. **Ankle Joint Functional Assessment Tool (AJFAT)**- The Ankle Joint Functional Assessment Tool (AJFAT) is a self-reported questionnaire designed to assess how ankle problems affect an individual's functional abilities. Patients are asked to compare the injured ankle with the non-injured one, providing responses about pain, swelling, stability, strength, and specific activities such as walking on uneven surfaces, descending stairs, jogging, and cutting during

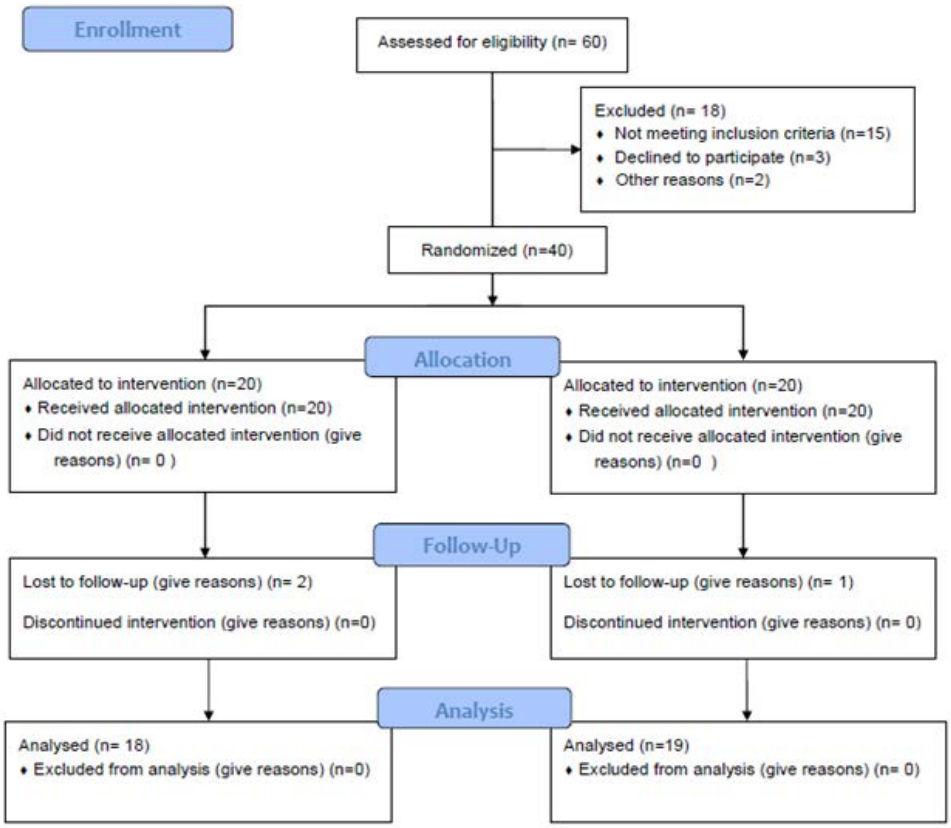


Figure 1. Consort flow chart.

running. The questionnaire consists of 12 questions, each scored on a scale that reflects functional limitations. The total score, ranging up to 48 points, is used by healthcare providers to track recovery and assess overall ankle functionality, with higher scores indicating better function[17].

2.3 Training Sessions or Interventions

Both groups participated in balance training sessions, three times a week for six weeks under the supervision of a physiotherapist. Each session lasted 30 minutes and was structured as follows:

Group A: Wobble Board Training

Participants in Group A performed balance exercises using a wobble board, which allows multi-directional instability. Exercises included single-leg stance, squats, and dynamic balance tasks (*e.g.,* Reaching while standing on the wobble board). The difficulty of the exercises was progressively increased by adding movements such as reaching with the arms, performing squats, and closing the eyes to challenge balance further[18].

Group B: Uniaxial Rocker Board Training

Participants in Group B performed similar balance exercises using a uniaxial rocker board, which allows instability in a single plane (front-back or side-to-side). The exercises were matched to those performed by Group A, but the uniaxial nature of the rocker board focused on controlling balance in one direction at a time. The difficulty was also progressively increased by introducing dynamic tasks and reducing visual input[19] (Table 1).

Participants in both groups were instructed to perform additional balance exercises at home, following a prescribed protocol designed to complement the supervised sessions. Adherence to the home exercise program was monitored using a training diary, which participants were required to submit weekly.

2.4 Statistical Analyses

The collected data were summarized by using the descriptive statistics: Frequency, percentage; mean and S.D. The independent sample "t" test was used to compare age, plantarflexion, dorsiflexion, AJFAQ and SEBT according to groups. The paired "t" test was used to compare AJFAQ and SEBT within the groups as well as irrespective of groups. To find the relation between age, plantarflexion, dorsiflexion AJFAQ, and SEBT; the pearson correlation coefficient ("r") was used. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software (SPSS Inc.; Chicago, IL) version 29.0.10.

3. Results

3.1 Comparison of Age, Plantarflexion, and Dorsiflexion Between the Groups

Table 2 compares age, Talar Tilt test, and Anterior Drawer test results between Group A and Group B. The mean age for Group A was 28.95 years, while Group B had a slightly higher mean age of 29.11 years, indicating minimal difference in age distribution between the two groups. In terms of screening measures, the Talar Tilt test and Anterior Drawer test were conducted for both groups to confirm eligibility based on the inclusion criteria, ensuring that only participants with stable, sub-acute Grade 2 ankle sprains were enrolled. These measures helped to establish a baseline for all participants, with both groups demonstrating similar ankle stability prior to starting the interventions. Plantarflexion and dorsiflexion values were not central to this study's primary objectives and were therefore excluded from further analysis and reporting. Overall, the results demonstrate that both groups were comparable in terms of age and baseline ankle stability (Figure 2).

3.2 Comparison of AJFAQ and SEBT within the Groups and between Groups

The results showed significant improvement in AJFAQ and SEBT scores within each group after the intervention. (Table 3) AJFAQ scores increased from 20.10 to 26.05 in Group A and 29.51 in Group B, indicating a statistically significant improvement in AJFAQ performance. SEBT performance also showed a significant enhancement in both groups, with p-values below 0.001, indicating the observed improvements are highly significant.

The paired "t" test was used to compare AJFAQ and SEBT within the groups. There was a difference ($p < 0.05$) in AJFAQ and SEBT within Group-A as well as Group-B.

The results comparing AJFAQ and SEBT scores between Group A and Group B, revealing significant differences based on post-test p-values. (Table 4) Group B showed a significant improvement in AJFAQ scores, while Group A showed no significant difference. In SEBT, Group B outperformed Group A, indicating a

Table 1. 6-Week balance training rehabilitation protocol using wobble board and uniaxial rocker board for sub-acute Grade 2 inversion ankle sprain

Week	Group A (Wobble Board)	Group B (Uniaxial Rocker Board)	Focus and Rationale
1	Static balance: Stand on wobble board with both feet, 2 x 1 min. Seated ankle dorsiflexion and plantarflexion, 2 x 10 reps.	Static balance: Stand on uniaxial board (front-to-back motion) for 2 x 1 min. Seated ankle dorsiflexion and plantarflexion, 2 x 10 reps.	Early proprioception and ankle stabilizer activation without excessive load to reduce swelling.
2	Single-leg balance on wobble board, 3 x 30 sec. Seated heel raises on wobble board, 2 x 10 reps. Toe taps while seated, 2 x 15 reps.	Single-leg balance on uniaxial rocker (side-to-side motion), 3 x 30 sec. Seated heel raises on rocker board, 2 x 10 reps. Toe taps, 2 x 15 reps.	Progress to single-leg static balance for improved proprioception and increased ankle load.
3	Dynamic balance: Weight shifts front-to-back and side-to-side on wobble board, 3 x 1 min. Standing toe raises on wobble board, 3 x 10 reps.	Dynamic balance: Weight shifts front-to-back on uniaxial board, 3 x 1 min. Standing toe raises on uniaxial board, 3 x 10 reps.	Introduce dynamic balance to enhance neuromuscular control and coordination.
4	Single-leg dynamic movements on wobble board (small circles with body), 3 x 1 min. Single-leg squat on wobble board, 2 x 10 reps.	Single-leg dynamic movements on uniaxial board (front-back motion with more amplitude), 3 x 1 min. Single-leg squat, 2 x 10 reps.	Increase task difficulty to challenge stability and introduce functional movements.
5	Lateral jumping from wobble board to stable ground, 2 x 10 reps. Single-leg lateral reach on wobble board, 2 x 15 reps.	Lateral stepping on and off uniaxial board, 2 x 10 reps. Single-leg reach front-back, 2 x 15 reps.	Introduce lateral movements to regain agility and responsiveness, incorporating functional, sport-related tasks.
6	Multidirectional jumping on wobble board (forward, lateral), 3 x 10 reps. Single-leg balance with external perturbations, 3 x 1 min.	Forward-backward jumping on uniaxial board, 3 x 10 reps. Single-leg balance with external perturbations, 3 x 1 min.	Focus on advanced proprioception, agility, and injury prevention with increased complexity and sport-like functional tasks.

Table 2. Comparison of age, plantarflexion, and dorsiflexion between the groups

		Mean	S.D.	"t"	p value
Age (Years)	Group A	28.95	4.85	-0.11	0.913
	Group B	29.11	3.89		
Plantarflexion (Degrees)	Group A	44.55	0.51	0.62	0.539
	Group B	44.45	0.51		
Dorsiflexion (Degrees)	Group A	14.00	0.86	-1.14	0.260
	Group B	14.30	0.80		

more pronounced effect of the intervention on Group B, leading to enhanced performance. These findings highlight the importance of group differences in performance (Figure 3).

4. Discussion

The study analyzed the efficacy of balance training interventions in functional recovery following sub-acute Grade 2 inversion ankle sprains. Results showed that both groups were comparable in terms of baseline characteristics, with minimal differences in age and ankle flexibility. The interventions showed significant improvements in AJFAQ and SEBT scores within each group, with Group A's AJFAQ scores increasing and Group B's scores improving more markedly. The SEBT scores also showed significant improvements, indicating that both interventions were effective in enhancing ankle function and stability post-injury.

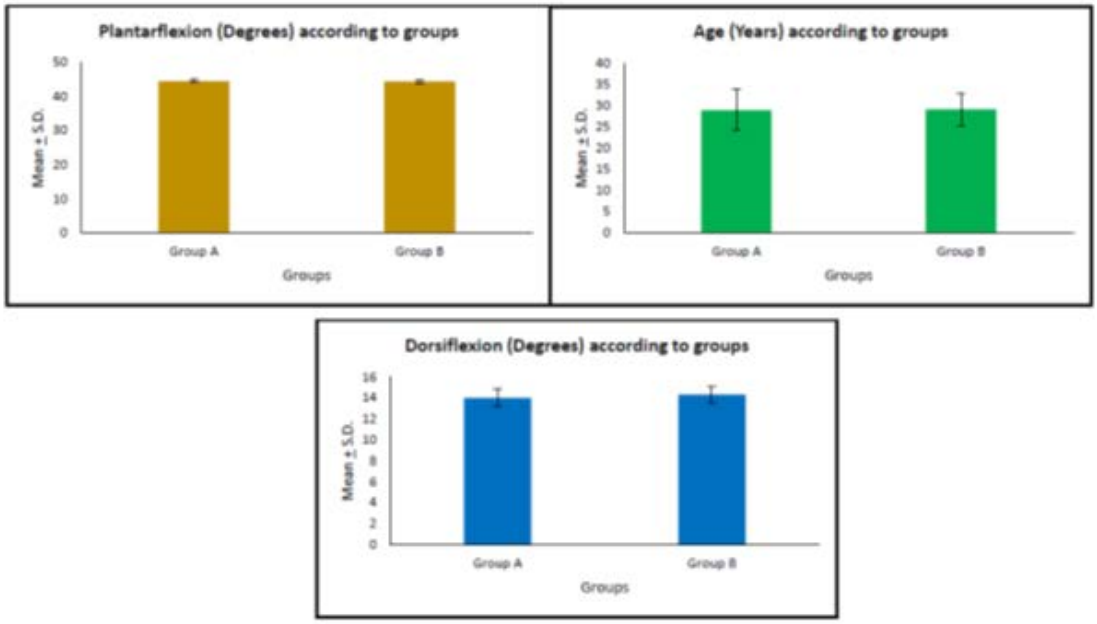


Figure 2. Comparison of age, plantarflexion, and dorsiflexion between the groups.

Table 3. Comparison of AJFAQ and SEBT within the groups and between groups

Mean		Group A				Group B			
		S.D.	"t"	p value	Mean	S.D.	"t"	p value	
AJFAQ	Pre-test	20.10	8.89	-7.70	< 0.001*	18.80	9.04	-7.19	< 0.001*
	Post-test	26.05	6.65			29.51	8.53		
SEBT (PM)	Pre-test	57.16	2.32	-7.48	< 0.001*	57.11	2.38	-5.33	< 0.001*
	Post-test	61.43	1.48			64.01	2.97		

Table 4. Comparison of AJFAQ and SEBT between groups

Mean		Pre-Test				Post-Test			
		S.D.	"t"	p value	Mean	S.D.	"t"	p value	
AJFAQ	Group A	20.10	8.89	0.46	0.649	26.05	6.65	-4.12	0.043*
	Group B	18.80	9.04			29.51	8.53		
SEBT (PM)	Group A	57.16	2.32	0.07	0.946	61.43	1.48	-3.43	0.041*
	Group B	57.11	2.38			64.01	2.97		

("t" = Independent sample "t" test)

The findings of this study align with previous research on balance training interventions for functional recovery in patients with sub-acute Grade 2 inversion ankle sprains. McKeon *et al.*, observed that both wobble board and uniaxial rocker board training have been shown to significantly enhance proprioception, functional stability, and postural control, all critical for effective recovery[20]. However, evidence suggests that multi-directional balance training, such as wobble board exercises, may offer superior improvements in dynamic stability compared to uniaxial approaches. This enhanced dynamic stability could explain the superior performance of Group B, particularly if their intervention incorporated a wobble board or a similar device.

Verhagen *et al.*, further support this notion, finding that patients who underwent wobble board training showed faster functional recovery and better postural control than those using uniaxial rocker boards[21]. The

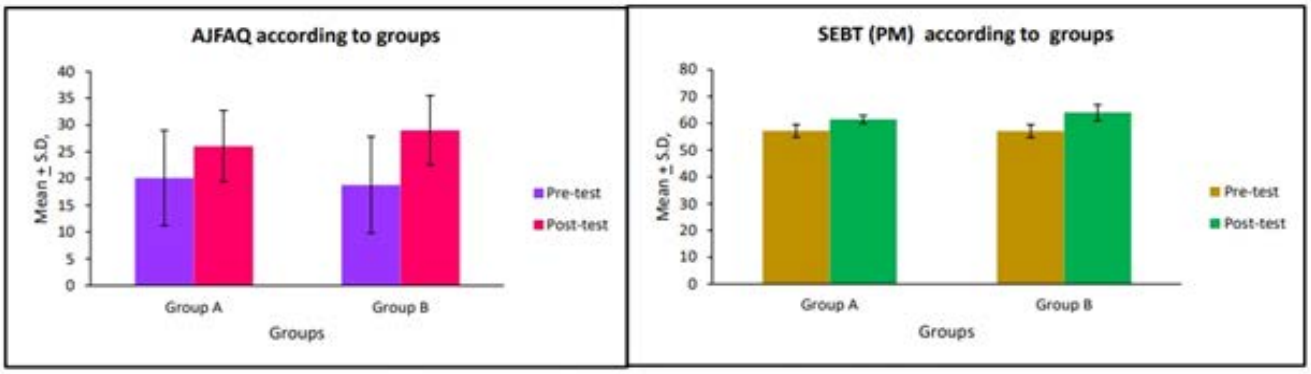


Figure 3. AJFAQ and SEBT (PM) according to groups (pre and post).

wobble board's ability to engage the ankle's proprioceptive system in multiple directions likely provided a more comprehensive stimulus, resulting in greater improvements in dynamic stability, proprioception, and overall functional performance[22]. This could be the reason for the more substantial post-intervention gains observed in Group B's AJFAQ and SEBT scores.

These results carry significant implications for clinical practice, particularly in rehabilitating patients with sub-acute Grade 2 inversion ankle sprains. The marked improvement in Group B supports the idea that multi-directional balance training is more effective in enhancing functional recovery than uniaxial methods. This conclusion is consistent with existing literature Hale *et al.,* which recommends balance training to improve proprioception, reduce the risk of re-injury, and expedite a return to full function[23]. Clinicians should therefore consider incorporating multi-directional balance exercises, such as wobble board training, in their rehabilitation protocols to optimize outcomes for ankle sprain patients.

The evidence suggests that targeting a broader range of joint movements and neuromuscular responses can significantly enhance the recovery process, making multi-directional training a valuable addition to standard rehabilitation practices.

5. Conclusion

In conclusion, the study findings reveal that both balance training interventions led to significant improvements in AJFAQ and SEBT scores within each group. However, Group B showed superior post-intervention performance, likely due to a more comprehensive balance training approach. These results are consistent with existing research, which suggests that multi-directional balance training, such as wobble board exercises, may offer greater benefits in promoting functional recovery in patients with sub-acute Grade 2 inversion ankle sprains. This underscores the importance of selecting appropriate rehabilitation strategies to maximize patient outcomes.

6. Acknowledgment

We thank our research participants, the recreational football players, who dedicated their time and effort to this study. Their enthusiasm and commitment were invaluable to our research outcomes.

7. References

1. Sluijs EMFV, Ekelund U, Silva IC, Guthold R, Ha A, Lubans D, et al. Physical activity behaviours in adolescence: Current evidence and opportunities for intervention. Lancet. 2021; 398(10298):429-442. https://doi.org/10.1016/s0140-6736(21)01259-9
2. Toomey CM, Whittaker JL, Richmond SA, Owoeye OB, Patton DA, Emery CA. Adiposity as a risk factor for sport injury in youth: A systematic review. Clin J Sport Med. 2022; 32(4):418-426. https://doi.org/10.1097/jsm.0000000000000927
3. Javier CJG, Lawrence BH. The epidemiology, evaluation, and assessment of lateral ankle sprains in athletes. J Sport Med Ther. 2021; 6(2):008-017. https://doi.org/10.29328/journal.jsmt.1001052
4. Prakash AA. Epidemiology of high ankle sprains: A systematic review. Foot Ankle Spec. 2020; 13(5):420-430. https://doi.org/10.1177/1938640020916266
5. Marshall AN, Kikugawa TM, Lam KC. Patient, treatment, and cost characteristics associated with sport-related

ankle sprains: A report from the athletic training practice-based research network. Athl Train Sports Health Care. 2020; 12(4):173-180. https://doi.org/10.3928/19425864-20190521-01
6. Casanova SM, Ingles M, Serra-Ano P. Effects of balance training on functionality, ankle instability, and dynamic balance outcomes in people with chronic ankle instability: Systematic review and meta-analysis. Clin Rehabil. 2021; 35(12):1694-1709. https://doi.org/10.1177/02692155211022009
7. Wagemans J, Bleakley C, Taeymans J, Schurz AP, Kuppens K, Baur H, et al. Exercise-based rehabilitation reduces reinjury following acute lateral ankle sprain: A systematic review update with meta-analysis. Plos One. 2022; 17(2):e0262023. https://doi.org/10.1371/journal.pone.0262023
8. Lakens D. Sample size justification. Collabra Psychol. 2022; 8(1):1-32. https://doi.org/10.31234/osf.io/9d3yf
9. Halabchi F, Hassabi M. Acute ankle sprain in athletes: Clinical aspects and algorithmic approach. World J Orthop. 2020; 11(12):534-558. https://doi.org/10.5312/wjo.v11.i12.534
10. Larkins LW, Baker RT, Baker JG. Physical examination of the ankle: A review of the original orthopedic special test description and scientific validity of common tests for ankle examination. Arch Rehabil Res Clin Transl. 2020; 2(3):100072. https://doi.org/10.1016/j.arrct.2020.100072
11. Wedin FN, Matthews M, Bleakley C. Diagnostic accuracy of clinical tests assessing ligamentous injury of the talocrural and subtalar joints: A systematic review with meta-analysis. Sports Health. 2022; 14(3):336-347. https://doi.org/10.1177/19417381211029953
12. Wright CJ, Nauman SL, Bosh JC. Wobble-board balance intervention to decrease symptoms and prevent reinjury in athletes with chronic ankle instability: An exploration case series. J Athl Train. 2020; 55(1):42-48. https://doi.org/10.4085/1062-6050-346-18
13. Nalcakan GR, Yol Y. Balance board vs balance ball: Which one is superior in enhancing static and dynamic balance abilities on healthy university students. Int J Sport Exer Train Sci. 2020; 6(2):57-64. https://doi.org/10.18826/useeabd.715111
14. Saghaei M. Random allocation software for parallel group randomized trials. BMC Med Res Methodol. 2004; 4(1):1-6. https://doi.org/10.1186/1471-2288-4-26
15. Wang H, Yu H, Kim YH, Kan W. Comparison of the effect of resistance and balance training on isokinetic eversion strength, dynamic balance, hop test, and ankle score in ankle sprain. Life. 2021; 11(4):307. https://doi.org/10.3390/life11040307
16. Picot B, Terrier R, Forestier N, Fourchet F, McKeon PO. The star excursion balance test: An update review and practical guidelines. Int J Athl Ther Train. 2021; 26(6):285-293. https://doi.org/10.1123/ijatt.2020-0106
17. Ross SE, Guskiewicz KM, Gross MT, Yu B. Assessment tools for identifying functional limitations associated with functional ankle instability. J Athl Train. 2008; 43(1):44-50. https://doi.org/10.4085/1062-6050-43.1.44
18. Babakhani F, Heydarian M, Hatefi M. The immediate effect of Kinesiotape and Wobble Board training on ankle joint position sense in athletes with functional ankle instability. J adv sport technol. 2020; 4(2):49-59.
19. Pancheva TG. Effect of proprioceptive training on postural balance in patients with chronic ankle instability. J Phys Educ Sport. 2021; 21(1):3-11.
20. Mckeon PO, Ingersoll CD, Kerrigan DC, Saliba E, Bennett BC, Hertel J. Balance training improves function and postural control in those with chronic ankle instability. Med Sci Sports Exerc. 2008; 40(10):1810-1819. https://doi.org/10.1249/mss.0b013e31817e0f92
21. Verhagen E. What types of preventive exercises could help reduce an athlete's risk of suffering a lateral ankle sprain? Quick Questions in Ankle Sprains. 2024. p. 41-44. https://doi.org/10.4324/9781003526117-9
22. Verhagen EALM, Bay K. Optimising ankle sprain prevention: A critical review and practical appraisal of the literature. Br J Sports Med. 2010; 44(15):1082-1088. https://doi.org/10.1136/bjsm.2010.076406
23. Hale SA, Fergus A, Axmacher R, Kiser K. Bilateral improvements in lower extremity function after unilateral balance training in individuals with chronic ankle instability. J Athl Train. 2014; 49(2):181-191. https://doi.org/10.4085/1062-6050-49.2.06

Access this journal online	
Website: www.informaticsjournals.co.in/index.php/JEOH/index	Quick Response Code