Original Article

# Awareness Through Movement and Swiss Ball Exercise on Muscle Weakness among Subjects with Postural Syndrome

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**Abstract**

**Background:** A general definition of Postural syndrome is a lack of muscle strength or the quality or quantity of movements. This is typically accompanied by one or more of the following all of the joints in the body have an effect on body posture, which is the alignment of a person's body parts with respect to one another and their surroundings at a specific moment in time.

**Purpose:** To compare the effectiveness of Awareness through movements and swiss ball exercise on postural syndrome patients.

**Materials and Methods:** A total of 28 individuals were chosen based on the inclusion and exclusion criteria from Sai Charan physiotherapy clinic ,Arakkonam, Ranipet, Tamil Nadu ,India. After explaining the treatment's safety and ease of use to the participants, a signed agreement was acquired. Group A [14N] Awareness through movements are given GroupB[14N] Swiss ball movements are given. The pre test and post test results were obtained through Patient specific functional scale.Study duration : 4 Weeks . The entire process was performed from November 2022 to March 2023.

**Results:** As a result, swiss ball exercise is more effective than awareness through movement by analyzing the statistical values of pre test and post test.

**Conclusion:** The study's goal is to evaluate its effects. of swiss ball movement exercise and awareness through movements postural syndrome individuals in the society.

**Key Words:** Postural syndrome ,swiss ball exercise, pelvic clock ,cat and camel stretch.

## Introduction

Postural syndrome is a discomfort that occurs between the inferior gluteal folds and the superior scapula level and it may or may not be accompanied by back pain and it occurs due to dysfunction of soft tissues due to prolong abnormal postures, 10% of instances have a known cause, however the majority of cases are generic. Modern imaging methods like magnetic resonance imaging (MRI) scans and computed tomography (CT) scans are rarely able to pinpoint the source of discomfort.

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The ideal strategy to handle this challenging pain problem is now somewhat of a conundrum for both the patient and the practitioner. A simple measurement of a patient's gait and posture can reveal information about the musculoskeletal system's capacity to adjust to physical stimuli. Understanding the basics of gait and posture is essential for diagnosing and treating musculoskeletal pain. It also discusses typical musculoskeletal problems and the links between them and aberrant posture and gait[1]. There's some debate among the researchers, ergonomics specialists, and the general public on replacing office chairs with gym balls and using them as seating options at home[3]. Part of the issue stems from lack of understanding and expertise regarding this use of the gym ball. Both of the patients in this case had low back pain, but their conditions improved as soon as they started using the gym ball on a regular basis. Case presentations are used to describe how a condition was treated as well as to encourage discussion that could result in future research. Swiss therapists were the first to use the gym ball to help children with cerebral palsy gain better balance and equilibrium. The gym ball can help to influence how muscles perform, according to recent research[5]. Benefits have been noticed by trainers and therapists in their patients and clientele. Gym balls have also been proposed as a learning aid by educators. One benefit of utilizing balls, according to Janda and Vavrova, is that they are secure, reduce the risk of harm to nearly nothing, and activate proprioception, balance, and equilibrium control[9]. Through gentle exercises and motions, the feldenkrais aims to enhance movement and body awareness[10]. These exercises are meant to improve your general physical and mental health as well as your flexibility and coordination. Instead of aiming towards particular ends or aims, feldenkrais technique promotes movement inquiry and awareness. If at all feasible, it's best to have instruction from a qualified feldenkrais practitioner who can lead you through the exercises and offer tailored advice depending on your requirements and capabilities[11].

## Aim

To compare the effect of awareness through movements and swiss ball exercises among postural syndrome.

## Material and Method

A total of 28 individuals were chosen based on the inclusion and exclusion criteria from Sai charan physiotherapy clinic,Arakkonam,Ranipet,Tamil Nadu ,India.After explaining the treatment's safety and ease of use to the participants, a signed agreement was acquired. Group A [14N] were givenAwareness through movements and Group B [14N] were given Swiss ball exercise .The pretest and post test results were obtained through Patient specific functional scale.

Study Duration:4 weeks. The entire process was performed from November 2022 to March 2023.

Materials required: [swiss ball, mat]

**Inclusion criteria**

- Subjects who has been diagnosed with postural syndrome
- Age between 20-35 years
- Both male and female
- Muscle weakness and stiffness
- Chronic pain

**Exclusion criteria**

- Open wounds
- Fracture Dislocations
- Infective Lesions
- Disc herniations
- Age below 17 years

**Outcome measures**

Assessment was performed at before and after the treatment.

Patient specific functional scale[PSFC].

**Procedure**

Subjects who were willing to take part in the study were sort-out based on the selection criteria and informed consent was obtained after explaining about the process of study and the safety of the procedure. A total of 28 subjects were recruited and using the odd even ratio were divided into Awareness through movement group A (n=14) treated with Feldenkrais exercises and group B (n=14) treated with Swiss ball exercises. The pre-test value was measured using the

PSFC and the same were recorded as post-test after four weeks of intervention

**Awareness through movement: Group[A]**

**For** subjects who were treated with Feldenkrais exercise technique ,the following movement patterns were performed-

Pelvic clock, Shoulder rolls, Cat camel stretch.

These exercises can be performed in sitting, and lying on your back.

**Pelvic clock**

To do the pelvic clock, lie on your back with your legs bent and your feet flat on the floor.. Imagine the middle of a clock to be in your pelvis. Imagine that your pubic bone is advancing toward 12 o'clock as you slowly tilt your pelvis forward. After that, tuck your pelvis so that your tailbone is pointing toward six o'clock. Explore the range of motion by repeating this action many times while letting your pelvis settle into a balanced posture.

**Shoulder rolls**

Arms at your sides while you comfortably sit or lie down. Roll your shoulders gently up toward your ears while inhaling, then roll them back and down while exhaling. Repeat this motion while concentrating on moving your shoulders in smooth, controlled circles. As you complete the exercise, be aware of any stress or discomfort and make an effort to let it go.

**Cat and camel stretch**

With your knees hip-width apart and your hands directly beneath your shoulders, assume a hands-and-knees position. Deeply inhale, and then, as you exhale, round your spine upward like an enraged cat, tucking your chin in into your chest. Slowly arch your back, lowering your tummy to the floor and rising your head to look forward as you take a breath. Repeat this motion, switching effortlessly between the camel and cat poses.

Always be mindful of your body's signals and refrain from any movements that make you feel pain or discomfort. It's always better to seek advice from a licensed healthcare provider or a trained Feldenkrais practitioner before beginning a new fitness regimen if you have any particular worries or ailments.

**Swiss ball: Group [B]**

It includes the exercises like;

**Forward and backward rocking movements**:

A yoga mat is laid on the ground, and the individual is instructed to sit straight on the swiss ball while maintaining a 90-degree angle, keeping both hands on the low back and smoothly forward and backward tilting the pelvis. Repeat the motion with your hands guiding 30 times

**Sideway rocking movements:**

Same as above sit straight and maintain 90`tilt the pelvis sideways right to left smoothly repeat the movement 30 times.

**Back strengthening exercises:**

**Bridging movements:**

The subject is to lie on their back with one leg over a Swiss ball and the other knee bent 90 degrees, slowly raise their back straight like a bridge, hold the position for 10 seconds, then lower it back down. Repeat this process 20 times.

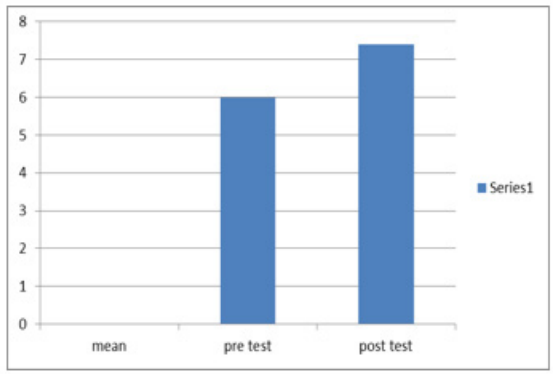
**Straight leg raise:**

Keep the swiss ball as close to the subject's body as possible and instruct them to lie over it. Leg should be raised slowly, with the knee straight. hold for ten seconds. Slowly lower it and then alternatively lower the other leg. ten times each time. Three sessions are complete when they raise one leg while lifting the opposing hand by extending over the ball to simulate a superman posture for 10 seconds.

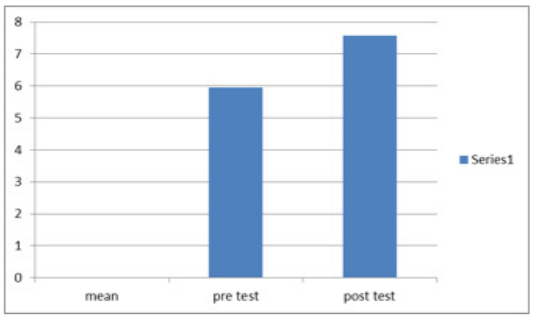
**Back stretching exercises:**

Ask the subject to lie down, place one leg over the ball at a 90-degree angle, and carefully roll the ball to one of the subject's body sides. Hold the ball there for five seconds before rolling it to the other side. Exercise is to be performed 20 times in three sessions.

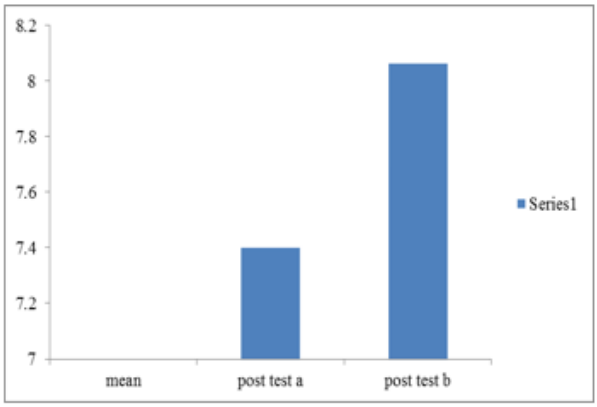
**Data Analysis**




**Graph 1: Pre and Post-test values of Awareness through movements for PSFC.**




**Graph 2: Pre and Post-test values of Swiss ball exercises for PSFC.**




**Graph 3: Comparison of post test values of both groups.**

## Result

The Pretest mean of Awareness through movements showed 6.000 the standard deviation 0.849, whereas the Post-test mean value of the awareness through movements showed 7.400 the standard deviation 1.010 This showed statistically significant p-value of greater than 0.0005.

The Pretest mean of swiss ball exercise showed 5.943, the standard deviation 1.111, whereas the Post-test mean value of the swiss ball movements showed 7.451, the standard deviation 1.054. This showed a statistically significant p-value of greater than 0.0005.

The post test comparison of awareness through movement and swiss ball exercise mean value of AWT is 7.400, the standard deviation 1.010 where as the swiss ball movement mean value is 8.064 , standard deviation is 1.041 .shows p value showed 0.0985,as a result shows swiss ball exercise is effective than awareness through movement

## Discussion

For this study, it was expected that four weeks of awareness through movement and swiss ball movements training would benefit Postural syndrome patients in improving their movements, depending on the scale used to measure the patient's overall impression of change[6]. This study demonstrates that swiss ball movements training was successful in boosting patients with postural syndrome's movement strength. The increase in movement range after swiss ball movement training is consistent with the results of earlier investigations. Concentric ,eccentric muscular contraction, coordination, and postural control were all shown to be enhanced in various exercises of the swiss ball training program, according to Dootchai Chaiwanichsiri[7]. A thorough Swiss ball stretching routine for the back muscles increases the range of motion in the spine and the extremities, according to Sekendiz B, Cug M, and Korkusuz F's findings from 20108. Swiss ball movements to the spine have been shown to enhance posture stability and build back muscle strength, according to Yoon JS, Lee JH, and Kim .According to previous studies, a variety of factors may weaken muscles, which could account for LBP.

## Conclusion

The study's goal is to evaluate its effects. of swiss ball movement exercise and awareness through movements postural syndrome individuals in the society. This study finally concluded that the awareness through movement and swiss ball movement training has an impact in improving muscle strength, as well as the overall functionality of the spine. This study findings states that awareness through movement and swiss ball movements are encouraged to treat postural syndrome in young individuals.

**Conflict of Interes**t: The authors state that there is no.

**Conflict of interest:** No

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**Ethical Clearance:** The ISRB committee of a private hospital and institution in Chennai has provided its clearance for the conduct of human research that complies with all applicable national laws, institutional regulations. (ApplicationNumber03/027/2022/ISRB/SR/SCPT)

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