IJBPAS, March, 2025, 14(3): 1323-1329

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

TEST-RETEST RELIABILITY OF REEDCO POSTURAL ASSESSMENT SCALE FOR CHRONIC TRAPEZIUS PAIN.

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Received 4th Nov. 2023; Revised 5th Dec. 2023; Accepted 4th May 2024; Available online 1st March 2025

https://doi.org/10.31032/IJBPAS/2025/14.3.8695

ABSTRACT

Introduction: The Reedco's posture score is a standard posture assessment and graded in the coronal and sagittal views in head-to-foot sequences. The RPS has been extensively used in several populations. reliability is of a set of test scores that relates to the amount of random error from the measurement process that might be embedded in the scores. Test retest assesses the degree to which test scores are consistent from one test administration to the next.

Methodology: total 10 individuals from Parul university taken to find test-retest reliability of Reedco postural assessment scale. Each area of the indivials body alignment is graded with 10 = good, 5 = fair, and 0 = poor. On 1st and 3rd. Reedco postural assessment score taken on same individuals and giving score from 100.

Result and conclusion: The results revealed a test-retest reliability coefficient of 0.99. This high reliability coefficient indicates an almost perfect agreement between the scores obtained in the two assessment sessions using the REEDCO Postural Assessment Scale.

Keywords: Reedco postural assessment score, Test-retest reliability, chronic trapezius muscle pain, intraclass correlation coefficient

INTRODUCTION:

The trapezius is a flat triangular muscle on the back of the neck and the upper thorax. It originates on the occipital bone, the ligamental nuchae, and the spinous processes and superior fibers runs downwards and laterally to be inserted on to the posterior border of the lateral third of the clavicle **[1]**. Similar to a trapezoid, the trapezius muscle is a big superficial back muscle. It extends laterally to the scapula's spine and from the occipital bone's external protuberance to the lower thoracic vertebrae. There are three fiber groups in the trapezius: upper, middle, and lower. The muscle that covers a significant portion of the upper back and is made up of exceptionally long muscle fibers is called the trapezius. In terms of functionality, this enables the trapezius to support and enable the erect posture of the spinal column when an individual is standing. One of the largest and closest to the skin muscles in the upper back and trunk is the trapezius. The primary function of the trapezius muscle is postural, although it can also be employed for active motions such head rotation, side bending, elevating and lowering the shoulders, and internal arm rotation. Due to the way the trapezius muscle functions, young people are more likely to experience postural problems and trapezius muscle pain **[2]**.

The term "posture" describes the relative positions of the various body parts. According to Latalski *et al*., the motor habit of posture is shaped by the anatomical and functional surroundings. It serves as a gauge of one's mental and physical health. The motor habit of posture is influenced by the anatomical and functional context. It is an expression of the mental and physical state of the individual. Effective work can be done while standing or sitting with good postural alignment, with little chance of weariness and pressure on the body's muscles and ligaments **[5]**. It is said that the ideal posture balances the musculoskeletal system and prevents the body from being too squeezed. A self-structured likert scale was utilized to ascertain the risk variables of postural dysfunction or having trapezitis, and the REEDCO Posture Assessment Scale was employed as a diagnostic tool for assessing postural dysfunction **[3]**.

The Reedco Posture Analysis Scale, a common and graded instrument for evaluating posture in coronal and sagittal views in the head-to-foot sequence, was used to evaluate the patients' posture. Numerous populations have made use of the RPS **[4]**.

A common posture evaluation tool, the Reedco's posture score (RPS) (REEDCO, 1974) is scored in head-to-foot sequences in both the sagittal and coronal perspectives. Numerous populations have made widespread use of the RPS **[4]**. Using the

conventional posture assessment methods, the posture is evaluated and rated in both the coronal and sagittal views in a head-to-foot sequence using the RPS scoring system **[4]**. A scale of 1 to 10 is used to rank each area of the subject's bodily alignment: 10 represents good (normal alignment), 5 represents fair (minimum to moderate deviations), and 0 represents bad (severe deviations). A score of 100 or higher denotes proper posture **[5]**.

The Reedco Posture scale was used to assess the posture. It is a standard tool and it is used by visual inspection of 10 postural traits viewed laterally including neck, upper back, trunk, abdomen and lower back or from back or posterior view including head, shoulder, spine, hip and ankle. The maximum score of 100 indicates good posture and a score of 59 or less is recorded as postural dysfunction **[4]**.

The posture was evaluated using the Reedco Posture Scale. This common technique is utilized by visually inspecting ten postural features, which can be evaluated from the back or posterior perspective, namely the head, shoulder, spine, hip, and ankle, or viewed laterally, including the neck, upper back, trunk, abdomen, and lower back. A score of 59 or below is considered to be postural dysfunction, whereas a maximum score of 100 denotes excellent posture **[5]**.

reliability is the overall consistency of a measure. It is the characteristic of a set of test scores that relates to the amount of random error from the measurement process that might be embedded in the scores. Scores that are highly reliable are precise, reproducible, and consistent from one testing occasion to another. That is, if the testing process were repeated with a group of test takers, essentially the same results would be obtained **[3]**. Various kinds of reliability coefficients, with values ranging between 0.00 (much error) and 1.00 (no error), are usually used to indicate the amount of error in the scores. Based on reliability analysis, product developers and manufacturers can take real efforts to improve reliability and maintenance quality. values less than 0.5, between 0.5 and 0.75, between 0.75 and 0.9, and greater than 0.90 are indicative of poor, moderate, good, and excellent reliability, respectively **[6]**.

The purpose of a test retest is to evaluate how consistent test results are between administrations. Measurements are obtained from a single rater using identical testing settings, tools, and methodologies **[7]**. The test's dependability should be measured by giving the same exam to the same set of people twice over a given length of time. The test for stability over time can then be assessed by correlating the values from Time 1 and Time 2 **[8, 9]**.

Therefore, it is essential to investigate the test-retest reliability of the REEDCO

Postural Assessment Scale for chronic trapezius pain in order to guarantee the scale's accuracy and consistency throughout time. This study contributes to the tool's reliability by demonstrating its capacity to produce consistent outcomes across several assessments. In the context of chronic trapezius pain, where consistent and reliable measurements are crucial for efficient evaluation and intervention planning, reliability assessment is key to the validity and utility of any assessment scale.

• STUDY DESIGN: Experimental study

• STUDY POPULATION: 18 to 40 age group, chronic trapezius muscle pain (more than 3 months)

• SOURCE OF SAMPLE: Employee, student and patients of Parul Seva-shram hospital and Parul University.

• SAMPLE SIZE: 10

To assess the test-retest reliability of the REEDCO Postural Assessment Scale for chronic trapezius pain, you can follow a structured methodology:

METHODOLOGY:

1. **Participant Selection:**
   - Subjects with chronic trapezius pain.
   - Ensure diversity in age, and pain severity for a subject.

2. **Informed Consent:**
   - Get participants' informed consent by outlining the goals and methods of the study.

3. **Training and Familiarization:**
   - make sure consistency in understanding and applying the scale's criteria.

4. **Pilot Testing:**
   - Conduct a pilot test with a small group to identify any potential issues or ambiguities in the scale.

5. **Test-Retest Design:**
   - Schedule two assessment sessions which is for 1st day and 3rd day.
   - Minimize any external factors that could influence posture changes during this period.

6. **Blinding:**

- Ensure assessors are blinded to participants' previous scores during the retest.

7. **Assessment Sessions:**

- Administer the REEDCO Postural Assessment Scale to participants in both sessions.
- Consistently apply the scale's criteria during each assessment.

8. **Data Collection:**

- Record posture scores for each participant in both sessions.
- Maintain detailed documentation of any deviations from the protocol.

9. **Statistical Analysis:**

- Use intraclass correlation coefficient - ICC statistical measures to assess the reliability between the two assessment sessions.

10. **Interpretation:**

- Interpret the results in the context of the established benchmarks for reliability.
- Consider whether the REEDCO Postural Assessment Scale demonstrates acceptable test-retest reliability for chronic trapezius pain.

By following these steps, evaluate the test-retest reliability of the REEDCO Postural Assessment Scale for chronic trapezius pain.

Intraclass correlation coefficient measure through the excel with the formula **= (CORREL (A2:A11,B2:B11))**

Table 1

E6 =(CORREL(A2:A11,B2:B11))

	A	B	C	D	E	F
1	day 0	day 3				
2	45	45				
3	65	65				
4	55	55				
5	55	55				
6	75	70		r=	0.994235	
7	70	70				
8	75	75				
9	90	90				
10	90	90				
11	65	65				
12						

RESULTS

A total of 10 participants with chronic trapezius pain were enrolled in the study, and their postural assessments were conducted in two sessions separated by a 1st day and 3rd day.

A remarkable test-retest reliability coefficient of 0.99 (95% confidence) was found in the results. The practically perfect agreement between the results obtained in the two assessment sessions using the REEDCO Postural Assessment Scale is indicated by this excellent reliability coefficient.

The study's excellent reliability suggests that the REEDCO Postural Assessment Scale is a reliable instrument for monitoring and assessing chronic pain in the trapezius muscle over an extended period of time. The scale's reliability and usefulness for clinical and research applications were increased when it showed remarkable stability in capturing postural traits associated with trapezius pain.

The aforementioned results offer significant contributions to the domain of musculoskeletal evaluation and establish a robust basis for the dependable application of the REEDCO Postural Assessment Scale when addressing chronic pain in the trapezius muscle.

DISCUSSION:

The REEDCO Postural Assessment Scale has a test-retest reliability of 0.99, which is very good and almost perfect, indicating that there was little variation in the measures between the two assessment sessions. The reliability of the scale in evaluating chronic trapezius pain is largely dependent on its capacity to yield extremely consistent results. A trustworthy evaluation instrument for tracking changes in chronic diseases and assessing the success of therapies is the REEDCO postural assessment scale.

LIMITATION:

There are some potential limitations in the study, such as sample size, participant characteristics, or external factors that might have influenced the results.

CONCLUSION:

In conclusion, the findings of this study demonstrate test-retest reliability for the REEDCO Postural Assessment Scale in evaluating chronic trapezius muscle pain, with a coefficient of 0.99.

ACKNOWLEDGEMENT:

I would like to express my deep and sincere gratitude to my research supervisor Dr Prachi shah, Assistant Professor, for giving me the opportunity to do research and providing invaluable guidance throughout this research. She has taught me the methodology to carry out the research and to present the research work as clearly as possible. It was a great privilege and honor to work and study under her guidance. I am very much thankful to my colleagues Manan Patel, Urvashi Gohel.

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