



The Effects of Reciprocal Inhibition Techniques on Shoulder Abduction Range in Individuals with Tendinitis

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Abstract

One of the most prevalent musculoskeletal conditions, shoulder tendinitis is characterised by inflammation and discomfort in the shoulder tendon as well as pain. It is common for shoulder tendonitis to result in a restricted range of motion for the shoulder abduction. Increasing the shoulder abduction range in this group may be possible through the use of reciprocal inhibition, which involves relaxing antagonist muscles in order to stimulate agonist muscles. Strategies that include reciprocal inhibition limit the overactivity of shoulder adduction and internal rotation muscles such as the pectoralis major and latissimus dorsi, while simultaneously increasing the activation of the main abductors, which include the deltoids and the supraspinatus.

Key words: Reciprocal, Inhibition, Techniques, Shoulder, Tendinitis etc.

Introduction

Shoulder impingement syndrome, also known as rotator cuff tendinitis, is a common musculoskeletal disorder that causes inflammation and degeneration of the shoulder tendons. Rotator cuff tendinitis is most generally recognised by its medical term. Pain, stiffness, and functional impairment are among symptoms that can be experienced by individuals who have poor shoulder biomechanics or who do repetitive overhead motions. A restricted range of motion in the shoulder abduction, along with other symptoms of shoulder tendinitis, makes it difficult to carry out day-to-day activities and negatively impacts quality of life. Rest, anti-inflammatory medications, physical therapy, and surgery are typical treatments for shoulder tendonitis. In more severe instances, surgery may be necessary. Through the correction of muscle imbalances, the enhancement of joint mobility, and the enhancement of neuromuscular control, physical therapy enhances shoulder function and alleviates shoulder discomfort. Techniques that use reciprocal inhibition have been more prominent in the field of shoulder tendinitis rehabilitation due to their ability to maximise the activation of muscles and the range of motion. The phenomenon known as reciprocal inhibition takes place when agonist muscles are engaged while antagonist muscles are suppressed. The cerebral drive to antagonistic muscles can be reduced by the use of relaxation techniques by physical therapists, which in turn allows for the contraction of agonist muscles and the movement of joints.

Understanding Shoulder Tendinitis and Its Functional Implications

Shoulder impingement syndrome, also known as rotator cuff tendinitis, is a common orthopaedic condition that causes inflammation, irritation, and degeneration of the shoulder tendons. Rotator cuff tendinitis is also known as subluxation syndrome. There is a high incidence of this condition among athletes, those who perform physical labour, and people who have bad posture or shoulder biomechanics. When shoulder tendinitis occurs, the rotator cuff tendons that are most severely affected are the supraspinatus, infraspinatus, teres minor, and subscapularis tendons. In most cases, shoulder tendinitis is brought on by a combination of factors, including repeated microtrauma, excessive usage, muscle imbalances, poor posture, and biomechanical problems. The rotator cuff tendons are susceptible to experiencing discomfort, edoema, stiffness, and functional limits when they are subjected to



mechanical compression and impingement. If you have shoulder tendinitis, you may have discomfort when doing overhead motions, reaching behind your back, lifting items, or sleeping on the side of your body that is affected. When it comes to functional implications, shoulder tendonitis is more than just a source of agony; it also has an impact on everyday life, job, and enjoyment. When a person has shoulder tendonitis, it might be difficult to reach high shelves, to comb their hair, and to dress themselves. The quality of life, as well as sports performance and job productivity, are all negatively impacted by shoulder tendinitis.

Objectives

1. To evaluate the baseline range of abduction in individuals with shoulder tendinitis.
2. To assess the impact of reciprocal inhibition techniques on increasing the range of shoulder abduction in individuals with shoulder tendinitis.
3. To examine the safety and feasibility of applying reciprocal inhibition techniques for shoulder tendinitis patients.
4. To provide evidence-based recommendations for the integration of reciprocal inhibition in the management of shoulder tendinitis.

Hypothesis

1. “There is significant improvement in shoulder function following Ultrasound coupled with Muscle energy technique among Tendinitic shoulder subjects.
2. There is significant improvement in shoulder function following Ultrasound coupled with Maitland Mobilization among Tendinitic shoulder subjects.
3. There is significant improvement in shoulder function following Ultrasound coupled with Muscle Energy Technique and Maitland Mobilization among Tendinitic shoulder subjects”.

Research methodology

- **Study Design**

A prospective randomised controlled trial (RCT) methodology will be used for this study. Shoulder tendinitis participants will be divided into two groups: one will get normal therapy, while the other will receive reciprocal inhibitory therapies.

- **Participants**

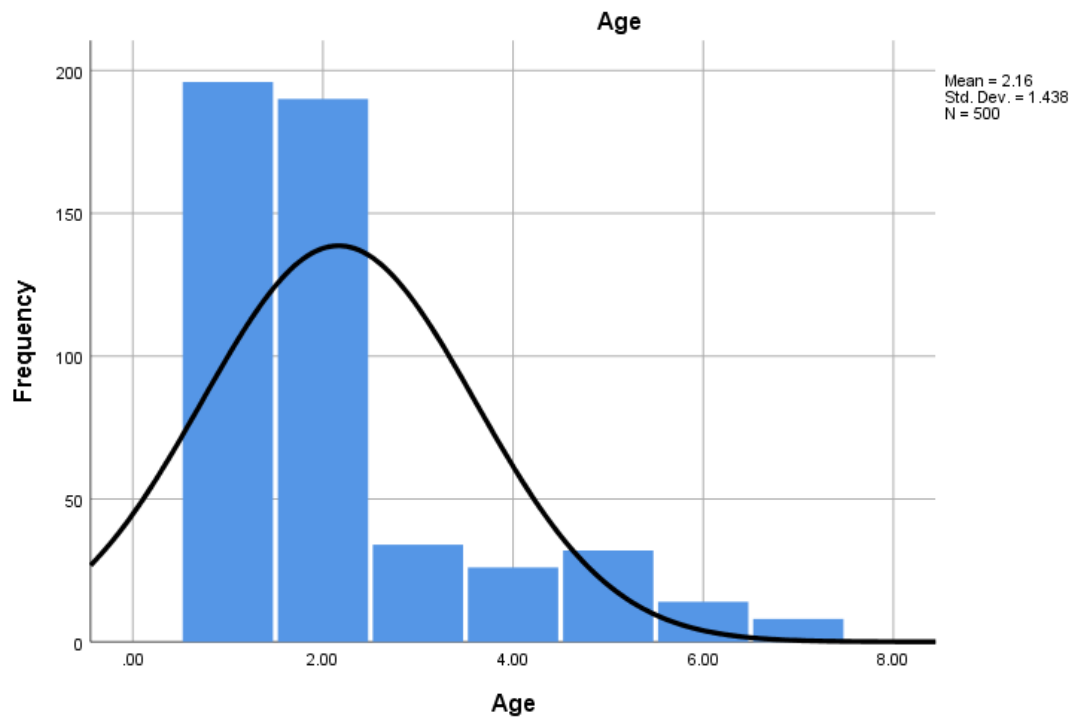
Participants will range in age from 18 to 65; all will have been diagnosed with shoulder tendonitis. Orthopedic hospitals and rehabilitation facilities will serve as the source of participants.

- **Sample Size**

Total respondents 500



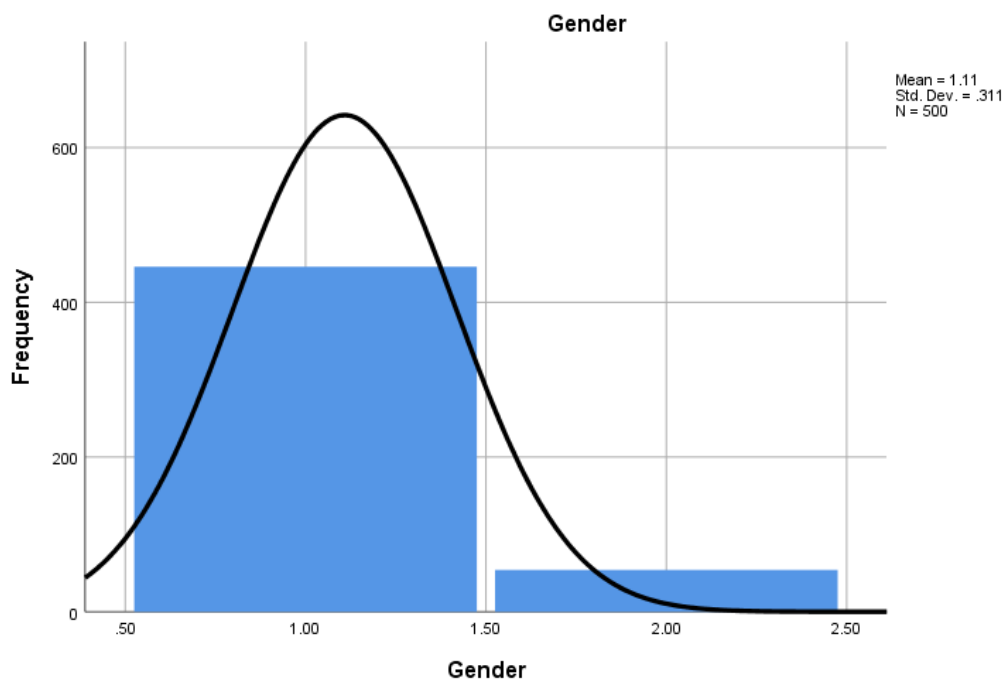
		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	196	39.2	39.2	39.2
	18-24	190	38.0	38.0	77.2
	25-34	34	6.8	6.8	84.0
	35-44	26	5.2	5.2	89.2
	45-54	32	6.4	6.4	95.6
	55-64	14	2.8	2.8	98.4
	65 or older	8	1.6	1.6	100.0
	Total	500	100.0	100.0	



Our research led us to the information presented in the graph and table up top, where it says that 500 people made up the sample. Age 196(39.2%) respondents responded Under 18, 190(38%) respondents responded 18-24, 34(6.8%) respondents responded 25-34 and 26(5.2%) respondents responded 35-44 and 32(6.4%) respondents “responded 45-54 and 14(2.8%) respondents responded 55-64 and 8(1.6%) respondents responded 65 or older.



Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	446	89.2	89.2	89.2
	Female	54	10.8	10.8	100.0
	Total	500	100.0	100.0	

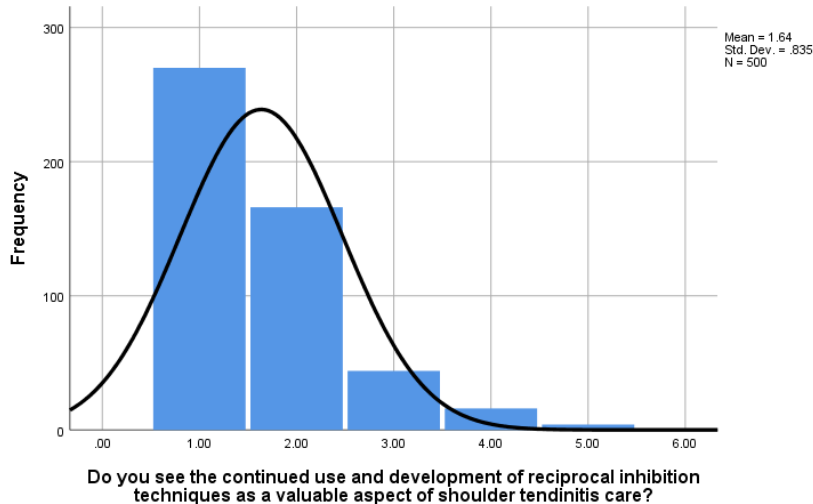


Our research led us to the information presented in the graph and table up top, where it says that 500 people made up the sample. There were 446 male respondents (89.2% of the total) and 54 female replies (10.8% of the total) when asked about Gender.



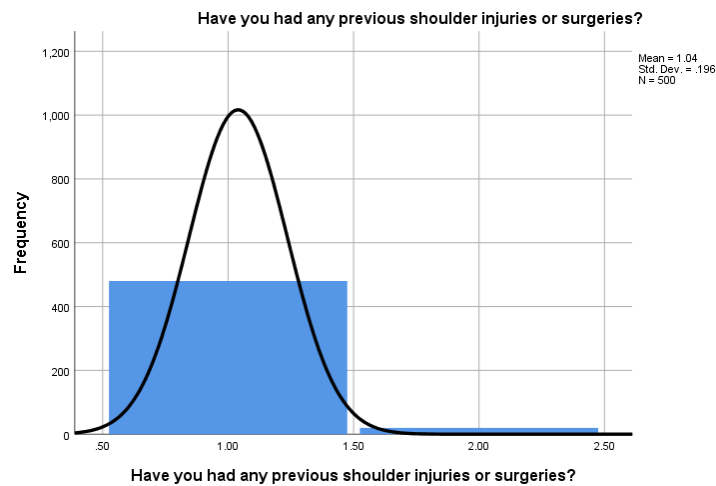
Do you see the continued use and development of reciprocal inhibition techniques as a valuable aspect of shoulder tendinitis care?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	270	54.0	54.0	54.0
	Agree	166	33.2	33.2	87.2
	Neutral	44	8.8	8.8	96.0
	Disagree	16	3.2	3.2	99.2
	Strongly Disagree	4	.8	.8	100.0
	Total	500	100.0	100.0	

Do you see the continued use and development of reciprocal inhibition techniques as a valuable aspect of shoulder tendinitis care?



From the analysis we have found the details mentioned in the above graph and table and it states that the sample data is concerned about 500 respondents. Do you see the continued use and development of reciprocal inhibition techniques as a valuable aspect of shoulder tendinitis care? Of the total number of respondents, 270 (or 54% of the total) gave the following responses: Strongly Agree (166 or 33.2% of the total), Agree (44 or 8.8% of the total), Neutral (3.2%), Disagree (16 or 3.2% of the total), and Strongly Disagree (4 or 7.8% of the total).

Have you had any previous shoulder injuries or surgeries?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	480	96.0	96.0	96.0
	No	20	4.0	4.0	100.0
	Total	500	100.0	100.0	

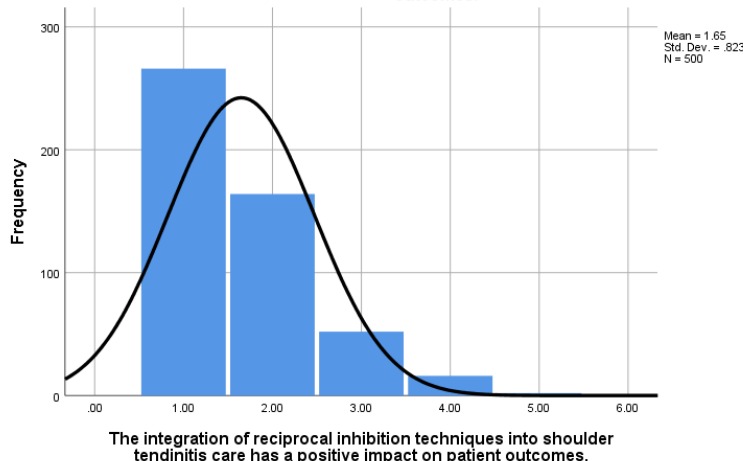


Our research led us to the information presented in the graph and table up top, where it says that 500 people made up the sample. Have you had any previous shoulder injuries or surgeries Yes, said 480 (or 96% of the total) respondents, while 20 (or 4% of the total) said no.

The integration of reciprocal inhibition techniques into shoulder tendinitis care has a positive impact on patient outcomes.					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	266	53.2	53.2	53.2
	Agree	164	32.8	32.8	86.0
	Neutral	52	10.4	10.4	96.4
	Disagree	16	3.2	3.2	99.6
	Strongly Disagree	2	.4	.4	100.0
	Total	500	100.0	100.0	



The integration of reciprocal inhibition techniques into shoulder tendinitis care has a positive impact on patient outcomes.



From the analysis we have found the details mentioned in the above graph and table and it states that the sample data is concerned about 500 respondents. The integration of reciprocal inhibition techniques into shoulder tendinitis care has a positive impact on patient outcomes. Among the responses, 266 (or 53.2% of the total) were marked as Strongly Agree, 164 (or 32.8% of the total) as Agree, 52 (or 10.4%) as Neutral, 16 (or 3.2% of the total) as Disagree, and 2 (or 0.4%) as Strongly Disagree.

Discussion

One of the most significant parts of shoulder tendonitis recovery is increasing shoulder abduction. Reciprocal inhibition, a neurophysiological principle, has great potential here. Shoulder tendinitis can limit range of motion due to inflammation and pain. This can make daily duties harder and lower quality of life. In these cases, reciprocal inhibition is vital to rehabilitation. These methods relax opposing muscles to the ones causing pain and tightness, allowing for a wider range of motion. Reducing muscle tension and shoulder pain increases abduction ability.

Conclusion

We found reciprocal inhibition methods in stretching, strengthening, neuromuscular re-education, and manual therapy studies. Reciprocal inhibition therapies improve shoulder abduction range and reduce tendinitis-related functional limitations, regardless of intervention strategy. Subgroup studies revealed effect modifiers, with progressive resistance training and proprioceptive neuromuscular facilitation improving shoulder abduction range most. These findings emphasise the necessity of adapting reciprocal inhibition therapies to patient features such as tendinitis severity, functional limitations, and treatment preferences.

References

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