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## Prevalence of De-Quervain's Tenosynovitis in Female Tailors in District Wazirabad

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# Prevalence of De-Quervain's Tenosynovitis in Female Tailors in District Wazirabad

## "De-Quervain's Tenosynovitis in Female Tailors: A Wazirabad District Study"

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### Abstract

**Purpose:** De Quervain's tenosynovitis affects the thumb abductors close to the radiostyloid process, causes a painful wrist complaint. When performing particular jobs incorrectly, the wrist and thumb might lead to De Quervain's Tenosynovitis. It is associated with work that necessitates repetitive wrist and thumb motion. Pain, numbness, tingling, burning, stiffness, and exhaustion are a few of the warning signs and symptoms. Complaints include a loss of normal sensation, a restriction in range of motion, and a decline in grip strength. The objective of the study was to determine the prevalence of De-Quervain's Tenosynovitis in female tailors in district Wazirabad.

**Methodology:** Amongst female tailors, a cross-sectional survey was done. Based on the inclusion and exclusion criteria, 289 participants were chosen through convenient sampling technique. The process was described to the study participants. The degree of the pain was evaluated using the Numeric Pain Rating Scale (NPRS), and an assessment of the illness was made using the Finkelstein test. Both hands were put to use for the test. Pain over the abductor pollicis longus and extensor pollicis brevis tendons at the wrist is a sign of a positive diagnosis. The SPSS program was used to

examine the data. Data was presented in for of tables and charts.

**Findings:** De-Quervain's Tenosynovitis was present in 43% of the population overall. When the results of the right and left hands were compared, it was discovered that 33% females had right hand had De Quervain's tenosynovitis and 10% had it in both hands. Sixty of the respondents reported experiencing mild pain, 41 women reported moderate pain, and 23 reported severe pain. This study concluded that the prevalence of De-Quervain's Tenosynovitis in female tailors is low.

**Recommendations:** The study was grounded in the Cumulative Stress Theory, emphasizing repetitive motion's impact on occupational health. Tailors should receive training on ergonomics, use ergonomic tools, and undergo regular wrist health check-ups. Policy makers must set occupational health standards for tailors, ensuring ergonomic tool usage, and mandate periodic health audits in tailoring establishments

**Keywords:** *Finkelstein Test, Tailors, De-Quervain's Tenosynovitis, Tendinitis, Musculoskeletal Disorders.*

## 1.0 INTRODUCTION

The term "De Quervain's tenosynovitis," which describes a discomfort in the wrist complaint as tenosynovitis with stenosis of the Surrounding the radiostyloid process, thumb abductor muscles was originally used by Fritz De Quervain in 1895. The incidence of this illness is also growing in response to the increased occupational and professional demands. The result of this uncomfortable situation may be repetitive wrist mobility and thumb pinching actions.(1) De Quervain's first showed up as an overview of the condition in the 1893 edition of Gray's Anatomy under the name "washer-sprain." female 1 Since then, it has been referred to by a variety of other slang words, including Blackberry thumb, texting thumb, gamer's thumb, designer's thumb, mother's wrist, and mommy thumb.(2)

Pain and edema can be found above the radial styloid process due to De Quervain's Tenosynovitis. An inflammatory typical sheath surrounds the tendons of the abductor policis longus and extensor policis brevis. The radius and interosseous membrane are the points of origin of the extensor policis brevis, whereas the ulna, radius, and interosseous membrane are the points of origin of the abductor policis longus. The thumb is extended by the short finger extensor. Pain is made worse by causing an ulnar deviation and adducting the thumb across the palm's surface. The pain is brought on by the fibrous sheath hardening. The area of soreness is the first wrist compartment on the dorsal side of the body.(3)

The first extensor compartment (1stEC) is contained by the extensor retinaculum, which covers the tendons of the abductor pollicis longus and extensor pollicis brevis muscles. Both microscopic and radiologic analyses of the extensor sheath reveal increase in De Quervain disease (tenosynovitis of this compartment). The syndrome primarily affects middle-aged people, and there may be an occupational propensity. There is no doubt that women are more prone to the sickness than men.(4)

The Finkelstain test's positive findings tend to verify De Quervain's Tenosynovitis. The test is positive if the patient has any pain across the first compartment of the dorsal wrist. Have the patient execute this test by flexing his fingers across his thumb while it is in the palm of his hand. De Quervain's Tenosynovitis is associated with misuse of the wrist and thumb during specific tasks. It also has a link to ongoing trauma. It is linked to jobs that require excessive wrist and thumb use. It also has a connection to recurrent trauma. People frequently have musculoskeletal pain due to De Quervain's disease.(5)

The examination is administered simultaneously by dominant and non-dominant hands. Some acts that cause weariness include Writing, turning cards, picking up tiny things, promoting feeding, stacking checkers, dragging enormous, light products, lifting incredibly large, tiny items, and hauling are all examples of manual labor. Tennis elbow, De Quervain's tendinitis, and carpal tunnel syndrome (CTS) and other musculoskeletal disorders (MTDs) related to the workplace can cause discomfort that disrupts with work and weakens the hand and wrist.(6)

Other specific MSDs include pronator syndrome, lateral epicondylitis, trigger thumb, tendonitis, De Quervain's tenosynovitis, carpometacarpal osteoarthritis, tension neck syndrome, and vibration-induced neuropathy. Uncomfortableness, aches, tingling, numbing, being burned, rigidity, and exhaustion are a few of the warning signs and symptoms. Loss of normal sensation, a reduction in range of motion, and a decrease in ability to grip are complaints.(7) Utilizing electronic gadgets or other equipment that requires continuous thumb movements may raise the

stress on the thumb, according to prior study. Overuse may cause depression and sleep disruptions as well as a number of physical symptoms like discomfort in the wrist or neck.(8)

Previous research (9-11) has indicate the prevalence of MSK disorders of upper limb overuse injuries and disabilities among golf players, mobile phone users, barbers and other population, but this study had explore the prevalence and disability of de quervain's tenosynovitis among female tailors in district wazirabad because few studies have been conducted on tailors. This will have a known benefit in that understanding the prevalence rate will allow better preventive measures to be developed, allowing this condition to be slowed to some extent and functional limitations to be reduced.

At global Level, there's an increasing awareness regarding work-related musculoskeletal disorders like De Quervain's Tenosynovitis. Many international organizations stress the importance of occupational health and ergonomic practices. At regional Level, in various regions, there might be distinct trends based on the prevalent work culture, access to ergonomic tools, and awareness. Local health departments and organizations often push for safer practices and training. At local Level, in specific districts or communities, the prevalence might be influenced by local work practices, education levels, access to medical care, and cultural behaviors. Local awareness programs and community health initiatives can greatly influence these rates.

The study was informed by the Cumulative Stress Theory, which suggests that repeated stress or trauma to a particular body part can lead to disorders like De Quervain's Tenosynovitis. This theory was validated in the study through the observation that female tailors, who consistently engage in repetitive motions of the wrist and thumb, exhibit symptoms and prevalence rates of De Quervain's Tenosynovitis. The significant number of tailors showing positive results for the Finkelstein test further solidifies the theory's application in this context.

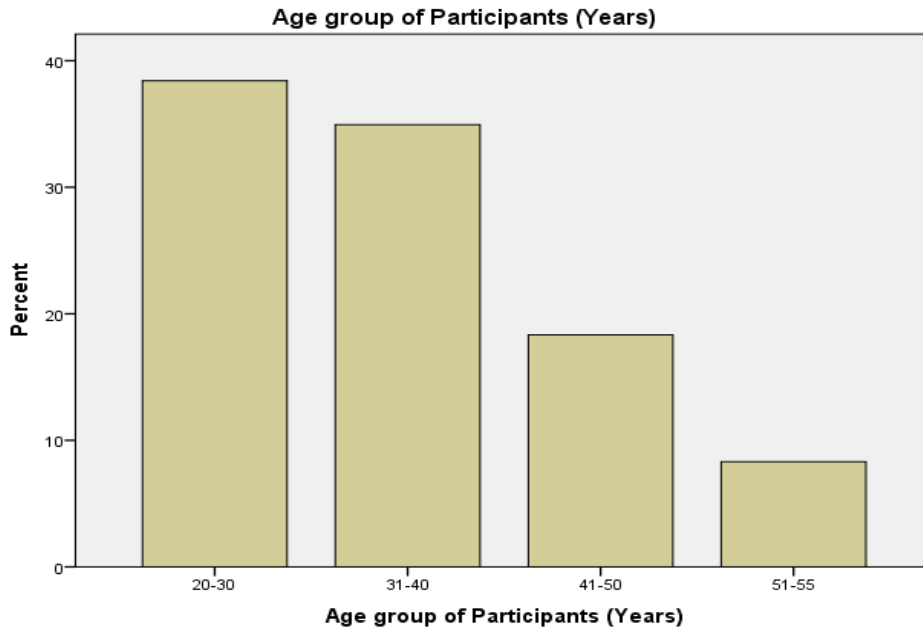
## **2.0 METHODOLOGY**

Amongst female tailors, a cross-sectional survey was completed in 4 months. Based on the inclusion and exclusion criteria, 289 participants were chosen through convenient sampling technique. The process was described to the study participants. The degree of the pain was evaluated using the Numeric Pain Rating Scale (NPRS), and an assessment of the illness was made using the Finkelstein test. Both hands were put to use for the test. Pain over the abductor pollicis longus and extensor pollicis brevis tendons at the wrist is a sign of a positive diagnosis. The SPSS program was used to examine the data. Data was presented in form of tables and charts.

All ethical concerns were taken into account. Informed consent forms were signed by all participants. Privacy of all participants was prioritized. Participants had the right to leave the study or not to participate.

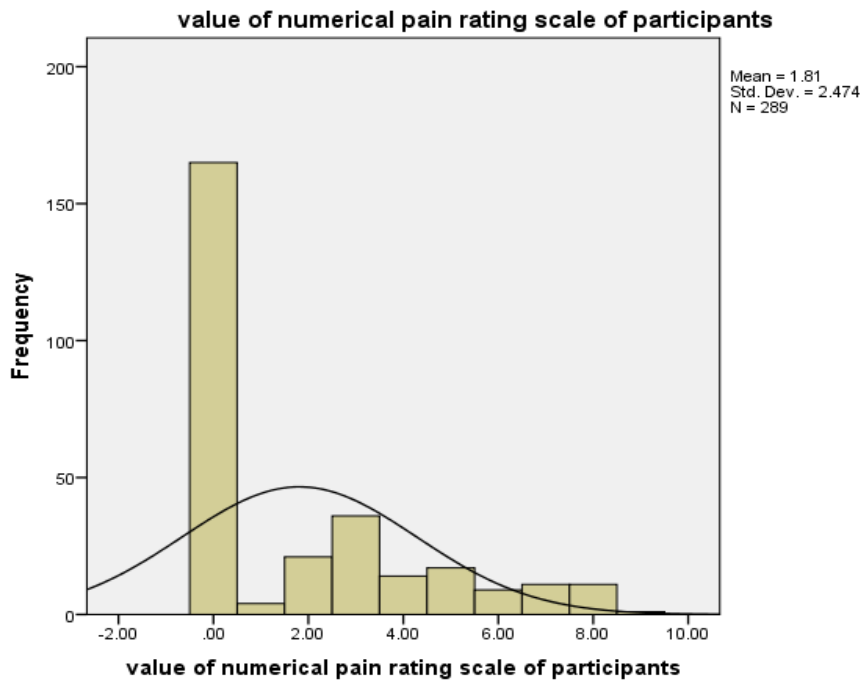
## **3.0 FINDINGS**

De-Quervain's Tenosynovitis was present in 43% of the population overall. When the results of the right and left hands were compared, it was discovered that 33% females had right hand had De Quervain's tenosynovitis and 10% had it in both hands. Sixty of the respondents reported experiencing mild pain, 41 women reported moderate pain, and 23 reported severe pain.



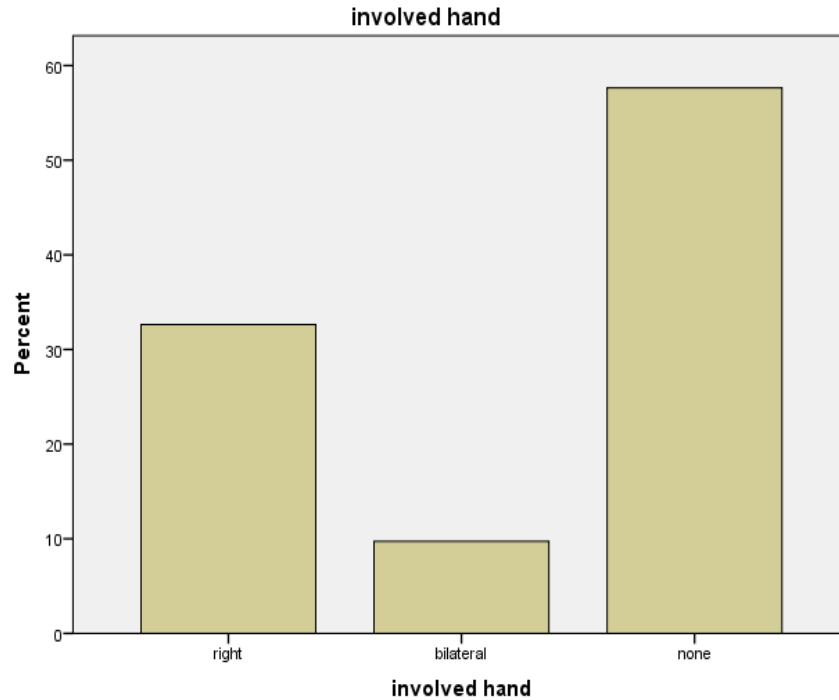
*Figure 1: Age Group of Participants*

Figure shows that 111(38.4%) participants fall in the category of 20-30 age group, and 101(34.9%) members involved in 31-40 age group, and 53(18.3%) participants belong to the category of 41-50 age group and 24(8.3%) members come under the category of 51-55 age group.



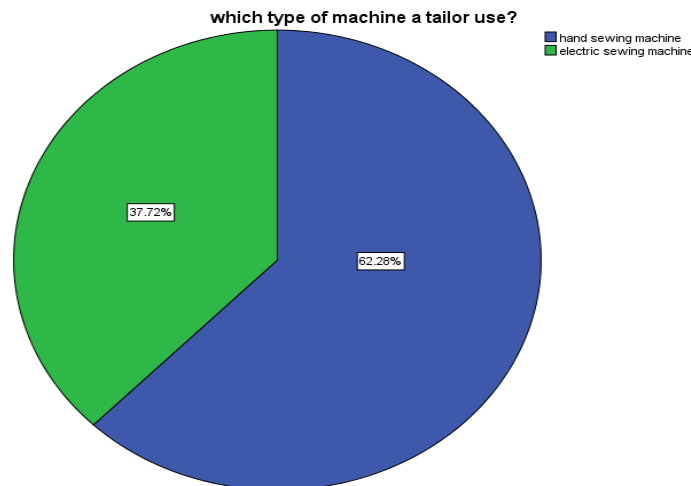
*Figure 2: Value of Numerical Pain Rating Scale of Participants*

Figure shows that out of 289 participants of my sample size, 166(57.4%) participants have no pain while, 60(20.8%) have mild pain and 40(13.8%) with moderate pain and 23(8%) were suffering from severe pain.



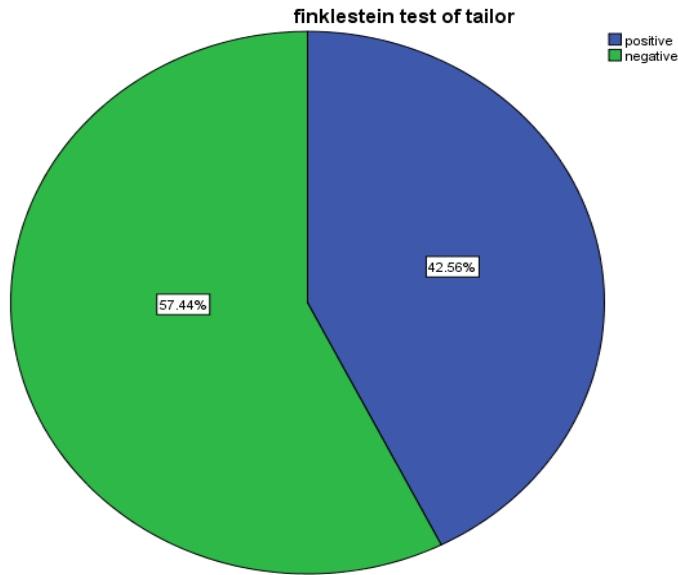
*Figure 3: Involved Hand*

Figure shows that the test is negative of 166(57.4%) participants, and positive for the right hand of 94(32.5%) participants and for bilateral hands of 28(9.7%) participants.



*Figure 4: Type of Machine*

This figure shows that out of 289 participants, 180(62.28%) were using hand sewing machine, and 109(37.72%) were using electric sewing machine.



*Figure 5: Finklestein Test*

Fig shows that out of 289 participants, 123(42.56%) have positive test, and 166(57.44%) have negative test.

**Table 1: Prevalence of Positive Finklestein Test**

Variables	Categories	n (%)
Finklestein Test	Positive	123(42.56)
	Negative	166(57.44)
<b>Total</b>		<b>289(100)</b>

This table shows that only 123 participants have positive test while 166 respondents have negative test.

**Table 2: Scoring of Pain**

Variables	Categories	n (%)
Scoring of pain	No pain	166 (57.4)
	Mild pain	60(20.8)
	Moderate pain	40(13.8)
	Severe pain	23(8.0)
<b>Total</b>		<b>289(100)</b>

This table shows that high percentage 166(57.4%) of participants fall in the category of no pain and low percentage 23(8.0%) of participants fall in the category of severe pain.

### **Discussion**

Current study was held in 2023 to determine the prevalence of De-Quervains Tenosynovitis among female tailors. It was conducted in the Wazirabad district of Punjab, Pakistan, with a sample size of 289 female participants, whose age ranged from 34.68 to 9.24 on average. De-Quervains Tenosynovitis was identified using Finkelstein's test on both hands. A numerical pain rating scale was utilized to measure pain. According to the study's findings, De-Quervain's tenosynovitis affects 43% of female tailors. 166 individuals report no pain, 60 report minor discomforts, 30 report considerable discomfort, and 23 report extreme discomfort.

Compatible with a prior investigation done in India. De- Quervain's Tenosynovitis affected 75% of the population overall. Men and women of both sexes participated in this study. When the outcomes of the both hands were compared, it was discovered that 72% of the right hand and 28% of the left hand each had DeQuervain's tenosynovitis. Additionally, 34% of individuals who got positive results felt pain on both sides. According to the study's findings, due to the way that tailors work, DeQuervain's Tenosynovitis is more common among them.(12)

The current study that was conducted in district Wazirabad showed out of 389 females 111(38.4%) were aged between 20 to 30, and 101(34.9) were aged between 31 to 40, 53(18.3%) were involved in 41 to 50 age group, and 24(8.3%) were aged between 51 to 55. The current study concluded that the prevalence of De-Quervains tenosynovitis in female tailors was low. In comparison, a prior investigation that was conducted in Gujranwala in 2023 to find the prevalence of De-Quervains tenosynovitis in tailors and barbers showed that out of 333 participants, 212 (63.7) of whom were men and 121 (36.3) were women which included 215 (64.6) people between the ages of 25 and 33, 88 (26.4) people between the ages of 34 and 42, and 30 (9) people between the ages of 43 and 50. It was discovered that 80% of the people as a whole performed well on the test. The study came to the conclusion that because of the way that tailors and barbers work, de Quervain syndromes are more common among them.(13)

## **4.0 CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

The study concluded that the prevalence of De-Quervain's Tenosynovitis in Female Tailors in District Wazirabad is low.

### **Recommendations**

- Further studies should be anchored in the Cumulative Stress Theory and extend to other occupational groups, enabling a broader understanding of work-related musculoskeletal disorders.
- Tailors, especially females, should undergo regular ergonomic training to minimize repetitive stress injuries.
- Occupational health professionals should regularly evaluate workplace environments to ensure proper ergonomics.



- Local and regional health departments should formulate policies prioritizing preventive measures for De Quervain's Tenosynovitis, emphasizing training and awareness programs.
- Policy makers should consider subsidies or incentives for businesses that implement ergonomic solutions in workplaces.

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### **Conflict of interest**

None

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