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Prevalence and awareness of De Quervain's tenosynovitis among female tailors in Latur city

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Abstract
Background: De Quervain's tenosynovitis is a painful condition affecting the wrist and thumb, commonly associated with occupations requiring repetitive wrist and thumb movements, such as tailoring. Understanding its prevalence and awareness in high-risk occupational groups is essential for planning preventive strategies.
Aim: To determine the prevalence of De Quervain's tenosynovitis and the level of awareness regarding this condition among female tailors in Latur city.
Materials and Methods: An observational cross-sectional study was conducted among female tailors in Latur city. A total of 114 participants were screened, of which 109 met the inclusion criteria. All eligible subjects underwent the Finkelstein test to identify clinical suspicion of De Quervain's tenosynovitis. Awareness and knowledge regarding the condition were assessed using a structured questionnaire consisting of seven questions. Data were analyzed using descriptive statistics and Chi-square tests with SPSS software.
Results: Of the 109 participants assessed, 14 (12.8%) had a positive Finkelstein test, while 95 (87.2%) were negative, indicating a low prevalence of De Quervain's tenosynovitis in this population. The mean age of the participants was 31.43 ± 5.29 years (range: 21–48 years). Awareness of the condition was extremely low: 106 (97.2%) participants had never heard of De Quervain's tenosynovitis, and only 3 (2.8%) reported any prior knowledge. Only 2.8% had ever consulted a physician for wrist or thumb pain. Age was significantly higher among those with a positive Finkelstein test (34.43 ± 7.69 years) compared to those with a negative test (31.09 ± 4.84 years; $p = 0.029$).
Conclusion: De Quervain's tenosynovitis shows a low prevalence among female tailors in Latur city; however, there is a striking lack of awareness about the condition. Targeted health education and ergonomic interventions are recommended to prevent work-related wrist disorders and promote early recognition and management.

Keywords: De quervain's tenosynovitis, prevalence, awareness, female tailors, work-related musculoskeletal disorders, finkelstein test, latur

Introduction

De Quervain's tenosynovitis is a painful condition involving the first dorsal compartment of the wrist, typically affecting the tendons of the abductor pollicis longus and extensor pollicis brevis. It was first described by Fritz de Quervain in 1895. The condition presents with pain and tenderness over the radial styloid process, particularly aggravated by thumb movements and ulnar deviation of the wrist. Occupational and repetitive wrist and thumb activities are considered important risk factors.

The Finkelstein test is the classic provocative test for diagnosing De Quervain's tenosynovitis. Pain over the first dorsal compartment during ulnar deviation of the wrist, with the thumb held in the palm, is regarded as a positive test.

De Quervain's tenosynovitis is more common in middle-aged individuals and has been reported to occur more frequently in women than in men. Work-related musculoskeletal disorders (WRMSDs) are prevalent among occupations involving repetitive, forceful, or awkward upper limb postures. Tailors and sewing machine operators are exposed to repetitive hand and wrist movements, prolonged static postures, and fine motor demands, predisposing them to various musculoskeletal problems, including wrist and thumb pain.

Previous studies have reported a notable prevalence of De Quervain's tenosynovitis among tailors, barbers, chefs, carpenters, and other manual workers exposed to repetitive wrist strain. However, limited data exist on the prevalence and awareness of De Quervain's tenosynovitis specifically among female tailors in Latur city.

Understanding the prevalence and awareness levels in this occupational group is essential for developing preventive measures, ergonomic modifications, and early intervention strategies to reduce functional limitations and improve quality of life.

Research Question

How many female tailors in Latur city are suffering from De Quervain's tenosynovitis, and how many of them are aware of this condition?

Need for the Study

Tailoring involves monotonous, highly repetitive tasks such as cutting, stitching, pressing, and finishing, often performed in abnormal wrist postures for prolonged periods. These repetitive and awkward wrist movements place tailors at risk of developing De Quervain's tenosynovitis.

Lack of awareness about this condition may lead to delayed diagnosis, progression of symptoms, and functional limitations, potentially affecting both the functional and financial independence of the affected individual. If awareness is improved, physiotherapists can play a key role in educating and guiding workers regarding preventive strategies and management.

There is a scarcity of studies exploring the prevalence and awareness of De Quervain's tenosynovitis among female

tailors in Latur city. This study aims to fill that gap and provide data that can inform occupational health and physiotherapy interventions.

Aim

To find out the prevalence of De Quervain's tenosynovitis and the level of awareness regarding this condition among female tailors in Latur city.

Objectives

1. To determine the prevalence of De Quervain's tenosynovitis among female tailors in Latur city.
2. To assess the level of awareness and knowledge regarding De Quervain's tenosynovitis among female tailors in Latur city.

Materials and Methods

Study Design

Observational cross-sectional study.

Study Setting

Tailoring units and workplaces in Latur city.

Study Population

Female tailors working in Latur city.

Study Duration

Six months.

Sampling Method

Convenience sampling.

Sample Size

A total of 114 female tailors were screened. Based on the inclusion and exclusion criteria, 109 participants were included in the study; 5 were excluded.

Materials

- Informed consent form
- Data collection sheet
- Structured questionnaire (7 questions)
- Pen

Inclusion Criteria

- Female tailors
- Age between 20–55 years
- Working as a tailor for more than 1 year
- Working 7–8 hours per day
- Willing to participate and provide informed consent
- Complaints of pain around the wrist and thumb area

Exclusion Criteria

- Wrist deformity or contracture
- History of wrist fractures
- History of carpal tunnel syndrome
- Diagnosed with other musculoskeletal disorders (e.g. rheumatoid arthritis)
- Pregnant women

Procedure

Ethical approval was obtained from the Institutional Ethical Committee of Maharashtra Institute of Physiotherapy, Latur. Female tailors fulfilling the inclusion criteria were approached at their workplace. The purpose and procedure of the study were explained, and informed consent was obtained.

A total of 114 subjects were screened; 109 met the inclusion criteria and were enrolled. Each participant underwent:

1. Finkelstein Test to assess clinical suspicion of De Quervain's tenosynovitis.
2. Awareness Questionnaire consisting of 7 questions to assess presence of pain, aggravating factors, functional impact, prior knowledge of the condition, and physician consultation.

Data were recorded on a structured data collection sheet.

Outcome Measures

1. Finkelstein Test

The participant was seated comfortably. The affected hand was examined with the arm by the side. The patient was asked to make a fist with the thumb flexed inside the fingers, and the examiner passively moved the wrist into ulnar deviation. The test was considered positive if the participant complained of pain over the first dorsal extensor compartment near the radial styloid. The reported reliability of the Finkelstein test is $r \approx 0.66$.

2. Awareness Questionnaire

A 7-item questionnaire (Yes/No format)

1. Do you have pain?
2. Does tailoring activity increase the intensity of pain?
3. Does the pain affect your functional activity?
4. Do you know about this condition (De Quervain's tenosynovitis)?
5. Did you consult a physician about this condition?
6. How long have you had the pain?
7. What are the aggravating factors?

An awareness score was calculated based on relevant items to reflect knowledge and awareness regarding De Quervain's tenosynovitis and its risk factors.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS software. Descriptive statistics (frequency, percentage, mean, standard deviation) were used to summarize the data. Chi-square tests were applied to assess associations and distributions, and t-tests were used to compare age between Finkelstein-positive and -negative groups. A p-value < 0.05 was considered statistically significant.

Results

Distribution of Participants by Musculoskeletal Disease History

Among the 114 participants screened, 109 (95.6%) had no history of other musculoskeletal diseases, while 5 (4.4%) reported a history of musculoskeletal disorders. The Chi-square test ($\chi^2 = 97.33$, $p = 0.001$) indicated that the prevalence of other musculoskeletal diseases in the sample was very low, suggesting a relatively "healthy" musculoskeletal background and reducing potential confounding.

Age Distribution

The age of the participants ranged from 21 to 48 years, with a mean age of 31.43 ± 5.29 years. This reflects a young to middle-aged working population typically engaged in repetitive manual tasks.

Prevalence of De Quervain's Tenosynovitis

Of the 109 female tailors who underwent the Finkelstein test

- 95 (87.2%) had a negative Finkelstein test
- 14 (12.8%) had a positive Finkelstein test

The Chi-square test ($\chi^2 = 60.193$, $p = 0.001$) confirmed that the majority of participants did not demonstrate clinical signs of De Quervain's tenosynovitis, indicating a **low** prevalence of the condition in this group.

Awareness and Symptom Response

Responses to the awareness questionnaire showed

- **Pain presence:** 14 (12.8%) reported pain, 95 (87.2%) reported no pain.
- **Pain aggravated by tailoring activity:** 14 (12.8%) reported increased pain with tailoring; 95 (87.2%) did not.
- **Functional impact of pain:** 14 (12.8%) reported that pain affected their functional activities; 95 (87.2%) did not.
- **Awareness of De Quervain's tenosynovitis:** 3 (2.8%) reported that they had heard of the condition; 106 (97.2%) had not.
- **Consultation with physician:** 3 (2.8%) had consulted a doctor regarding this type of pain; 106 (97.2%) had not.

The mean awareness score was 5.44 ± 1.18 (range: 5–10), indicating generally poor knowledge and awareness regarding De Quervain's tenosynovitis and related risk factors.

Age and Finkelstein Test

When age was compared between those with positive and negative Finkelstein test results

- **Negative test:** mean age 31.09 ± 4.84 years
- **Positive test:** mean age 34.43 ± 7.69 years

The mean difference of 3.33 years was statistically significant ($t = –2.211$, $p = 0.029$), suggesting that older participants were more likely to show clinical signs of De Quervain's tenosynovitis, possibly due to cumulative repetitive stress over time.

Correlation between Age, Finkelstein Test and Awareness

Correlation analysis showed

- A positive correlation between age and Finkelstein test positivity ($r = 0.209$, $p = 0.029$), indicating that older participants were more likely to have a positive clinical finding.
- A positive correlation between age and mean awareness score ($r = 0.210$, $p = 0.028$), suggesting that slightly older participants had marginally better awareness, although overall awareness remained low.

Discussion

This study investigated the prevalence and awareness of De Quervain's tenosynovitis among female tailors in Latur city, an occupational group that performs repetitive wrist and thumb movements.

The overall prevalence of De Quervain's tenosynovitis, as identified by a positive Finkelstein test, was 12.8%, indicating that only a small proportion of female tailors showed clinical features suggestive of the condition. This prevalence is lower than that reported in some other occupational studies, where higher rates have been found among tailors, barbers, and other workers exposed to repetitive wrist strain.

Despite the relatively low prevalence, the awareness of De Quervain's tenosynovitis was extremely poor, with 97.2% of participants reporting that they had never heard of the condition and only 2.8% having ever consulted a physician for related symptoms. This suggests that even when symptoms occur, they may be under-recognized, under-reported, or inadequately managed.

The significant association between older age and positive Finkelstein tests suggests that cumulative exposure to repetitive occupational movements may increase the risk of developing De Quervain's tenosynovitis over time. However, even among older workers, awareness levels were still generally low, emphasizing the need for targeted education across all age groups.

The low level of awareness identified in this study underscores the importance of occupational health education, particularly in informal sectors such as tailoring where formal health surveillance is often absent. Physiotherapists and other health professionals can play an important role in:

- Educating workers on early signs and symptoms
- Demonstrating ergonomic modifications and joint protection techniques
- Providing exercises and preventive strategies to reduce strain on wrist and thumb tendons

Conclusion

This study revealed a low prevalence of De Quervain's tenosynovitis (12.8%) among female tailors in Latur city. However, awareness regarding the condition was remarkably poor, with 97.2% of participants unaware of De Quervain's tenosynovitis and only a small fraction seeking medical advice for wrist or thumb pain.

These findings highlight the urgent need for educational and preventive programs focusing on occupational health, ergonomic practices, and early recognition and management of wrist disorders among female tailors. Implementing simple ergonomic modifications and awareness campaigns may help reduce the risk of work-related musculoskeletal disorders and improve the overall well-being and work ability of this population.

Limitations

- The study used convenience sampling, which may limit generalizability.
- Diagnosis was based on clinical examination (Finkelstein test) only; no imaging or further diagnostic workup was performed.
- Only female tailors from one city were included; results may differ in other regions or occupational groups.
- The awareness questionnaire was brief; more detailed assessment tools could provide deeper insights into knowledge and beliefs.

Future Scope

- Conduct multi-centre studies with larger and more diverse samples, including male tailors and other occupations at risk.
- Evaluate the effectiveness of ergonomic and educational interventions in reducing symptoms and prevalence of De Quervain's tenosynovitis.

- Use more comprehensive diagnostic tools, including imaging or specialist evaluation, to confirm clinical diagnoses.
- Explore relationships between work duration, specific tasks, workstation ergonomics, and risk of De Quervain's tenosynovitis.

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