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Prevalence of the Trigger Finger in Barbers of Multan

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Abstract: Background: Trigger finger, medically termed stenosing tenosynovitis. It is characterized by the bothersome occurrence of catching, popping, and locking sensations in the affected finger or fingers. Objective: This study aims to assess the prevalence of trigger finger within the barber community. Methods: The research employed a cross-sectional design. Results: The findings revealed that the incidence of trigger finger among barbers stood at a mere 1.7%. Of the 286 participants. Conclusion: In conclusion, this investigation determined that the occurrence of trigger finger among barbers is notably low at 1.7%. Among the participants, two cases of trigger finger were definitively diagnosed, and three cases showed uncertain indications. The study emphasized the connection between trigger finger and the repetitive hand movements and the prolonged use of heavy equipment inherent to the barber profession.

Keywords: Barber; Diagnosing; Cross-Sectional Design; Trigger Finger; Tenosynovitis.

1. Introduction

The trapping of tendons in the fingers and thumbs is a prevalent reason for pain and impairment in the hand. This leads to discomforting sensations or sudden popping of the affected flexor tendon when the patient bends or straightens the affected finger. Sometimes, the finger becomes stuck in a bent position and necessitates external assistance to fully straighten it out. Trigger finger, initially documented by Notta in 1850, occurs when the sheath surrounding a flexor tendon thickens and narrows. This narrowing creates a difference in diameter between the tendon and its retinacula sheath and is also referred to as stenosing tenosynovitis [1].

Trigger finger causes limitations in functionality and in performing daily activities. It usually manifests at an average age of 58, more frequently identified in women, occurring at a rate two to six times higher than in men [2].

A recent analysis of 18 papers has shown that several factors, have shown the highest predictive value in identifying individuals at risk of developing upper extremity tendonitis. These factors include age over 40, a body mass index over 30, pre-existing reports of discomfort in the shoulder or neck, a past occurrence of carpal tunnel syndrome, and occupations involving elevated shoulder posture rankings [3].

In trigger finger, along with thickening and narrowing of sheath, there is gradual worsening of its internal fibrocartilaginous gliding area. So, friction occurs between the tendon and the affected area, leading to the formation of nodules within the tendon and subsequent inflammation. This inflammation is often visible as increased blood flow (hypervascularity) in the flexor tendon when examined using ultrasound (US) [3].

Multiple potential reasons for trigger finger have been proposed, However, exact underlying cause remains unclear. Repeated actions of the fingers and injury in the affected area are potential factors. Such stress and degenerative forces may contribute to a trigger finger more commonly observed in the dominant hand. Declarations have indicated a connection between trigger finger and occupations that involve frequent grasping and bending of the hand, like utilizing scissors or handheld instruments [4].

Trigger finger can occur in any occupation dealing with repetitive hand movement. Hairdressers are one group among those. An analysis of their daily tasks illustrated experienced barbers allocate approximately 29% of their time on hair cutting, 17% on hair dyeing, 10% on blowdrying, and 8% on hair washing. The combination of high force exertion, rapid wrist movements, and extended contact can lead to high incidence of discomfort in the hand and wrist, particularly among women. In Finnish hairdressers, repetitive movements, uncomfortable working postures, standing for long periods, mainly contributed to health issues, among other factors. In Germany, health insurance companies reported that MSD was the primary reason for sick leave among hairdressers, accounting for 16-21% of total sick leave cases. Compared to other professions, hairdressers experience a higher frequency of MSD complaints in various parts of the body [5]

Beauticians perform various tasks such as manicure, pedicure, facials, hairdressing, massage, threading, waxing, and more, which involve using their digits, grasping power, hand power, or wrist motions. Over the years, there has been a significant rise in work-related musculoskeletal disorders (WMSDs) within the beauty industry [6].

Objective: To assess the prevalence of trigger finger within the barber community.

2. Literature Review

A previous study analyzed the cost and effectiveness of different treatments and concluded that two corticosteroid injections before considering surgery provided sufficient relief and were a more cost-effective option. However, there is uncertainty regarding the nationwide adherence to these recommendations. Given the increasing healthcare costs in the United States, It is crucial to understand the various treatment approaches in order to assist doctors in making better decisions and effectively allocate resources for trigger finger patients. This study investigated the national prevalence of following the recommended evidence-based treatment for trigger finger and identified ways to deliver high-value care for these patients. A group of individuals with trigger finger were examined to determine whether they or their surgeons adhered to the cost-effective treatment approach [7].

In a recent study they demonstrated that acupotomy can effectively address trigger finger symptoms by releasing the thickened tendon sheath, relieving pressure on the flexor tendon, and restoring proper joint structure. However, concerns about the procedure's safety have been raised due to its blind nature, wherein hand sensations are relied upon, potentially leading to harm to tendons, blood vessels, and nerves. While the superiority of acupotomy over steroid injections in terms of efficacy has been reported previously, subsequent experiments and the increasing use of ultrasound guidance technology have provided new insights in this field [8].

A study explored the involvement of patients with hand and upper extremity conditions in the decision-making process. The study introduced a modified method to address the increasing importance of patient-centered healthcare. While existing decision aids mainly focus on educating patients about their condition and treatment options, they lack a structured approach to help patients understand their preferences and how they relate to different treatment options, as well as how to consider trade-offs between options. Incorporating decision aids and preference elicitation tools improves patients' ability to express their treatment preferences, leading to higher satisfaction, confidence, and compliance with their decisions. Furthermore, implementing a ranking preference tool as part of a decision aid can enhance efficiency in physician-patient interactions, reduce unnecessary clinic time, and optimize healthcare resource utilization [9].

A research revealed that diabetes mellitus (DM) is a notable risk factor for the development of trigger finger (TF). DM influences the flexor tendon and A1 pulley, whereby increased blood sugar levels result in the formation of advanced glycation end products (AGEs) that cause tendons to become thicker and less flexible. Tendinopathy associated with type 2 diabetes (T2D) is also characterized by dysregulation of inflammatory mediators. The development of hand disorders may be influenced by a prolonged period of insulin resistance, hyperinsulinemia, and dyslipidemia. Female individuals and older age are associated with a higher risk of TF due to the involvement of hormones like estrogen and progesterone in tendon metabolism and healing [10].

3. Methodology

3.1. Sample Design

This was a cross-sectional study with an estimated sample size of 287.The sampling technique used was simple random sampling. The duration of the study was four months, starting from May 2023 and ending in August 2023.

The data was collected from male and female Barbers working in various barber shops and salons of Multan City.

- Choppers salon
- Revive salon
- Blades salon
- Cosmos salon
- Mirrors salon

3.1.1. Inclusion Criteria

Male and female barbers working in Multan, engaged in hairstyling, hair cutting and grooming services.

- Age group between 20-59.

3.1.2. Exclusion Criteria

- People who don't have symptoms of trigger finger.
- Those who have other hand or finger problems that are not related to trigger finger.
- People who have already had surgery to fix trigger finger in the past.
- People who don't want to take part in the study.

3.2. Outcome Measurement Tools

- Self-Structured Questionnaire
- NPRS (numeric pain rating scale)

3.3. Data Analysis

To assess the prevalence of trigger finger in barbers, specific diagnostic tests were conducted. In the demographic data, age and occupation were documented the mean and standard deviation values for age, working hours, and the numeric pain rating scale were measured using SPSS Version 27.

Working hours were treated as a quantitative variable, while pain intensity was categorized into four groups representing no pain, mild, moderate, and severe pain, denoted by 1, 2, 3, and 4, respectively. The age of participants was categorized into four groups: 20 to 29 years, 30 to 39 years, 40 to 49 years, and above 50 years.

4. Results

Data was collected from 287 participants, ranging in age from 20 to above 49 years.

Symptoms like locking, stiffness, and pain were reported by 3 individuals (1.0%), with the remaining 284 (99%) being symptom-free.

Diagnoses revealed that 5 (1.7%) had right-hand issues, while 282 (98.3%) did not.

Blow-drying hair was problem-free for 57 (19.9%), while 131 (45.6%) experienced mild difficulty, 85 (29.6%) moderate difficulty, and 14 (4.9%) severe difficulty.

Pain levels during rest, repetitive hand movement, and lifting heavy objects indicated that 88 (30.8%) felt no pain, 195 (68.1%) had mild pain, 1 (0.3%) had moderate pain, and 2 (0.6%) experienced severe pain.

Table 1. Descriptive of symptoms experience like (locking, finger stiffness, pain)

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	3	1.0	1.0	1.0
No	284	99.0	99.0	100.0
Total	287	100.0	100.0	

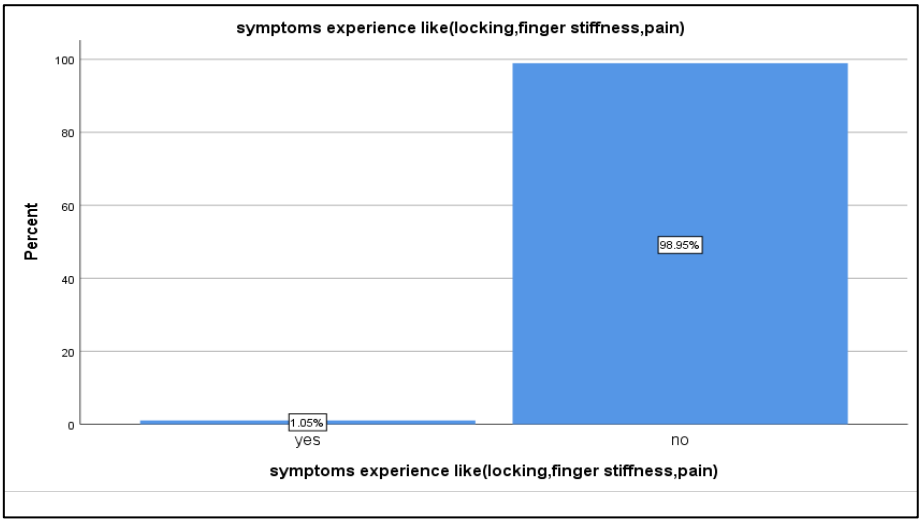

Figure 1. Graph of Symptoms experience like (Locking, Finger Stiffness, and Pain)

Table 2. Descriptive of hand affected based on the diagnosis

	Frequency	Percent	Valid Percent	Cumulative Percent
Right Hand	5	1.7	1.7	1.7
No Hand Affected	282	98.3	98.3	100.0
Total	287	100.0	100.0	

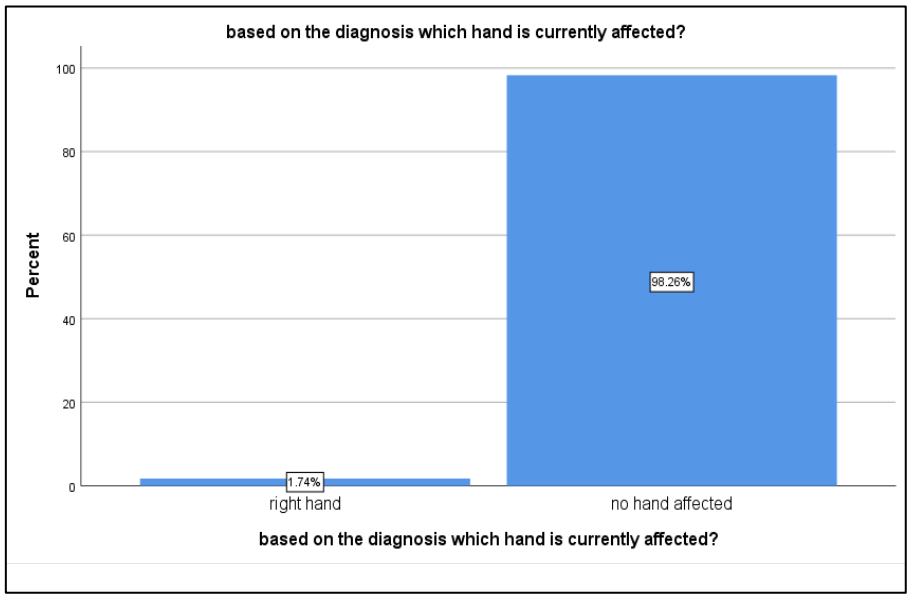

Figure 2. Descriptive of hand affected based on the diagnosis

Table 3. Descriptive of ability to wash and blow dry hair

	Frequency	Percent	Valid Percent	Cumulative Percent
No Difficulty	58	20.2	20.2	20.2
Mild Difficulty	130	45.3	45.3	45.3
Moderate Difficulty	85	45.3	45.3	45.3
Severe Difficulty	14	4.9	4.9	100.0
Total	287	100.0	100.0	

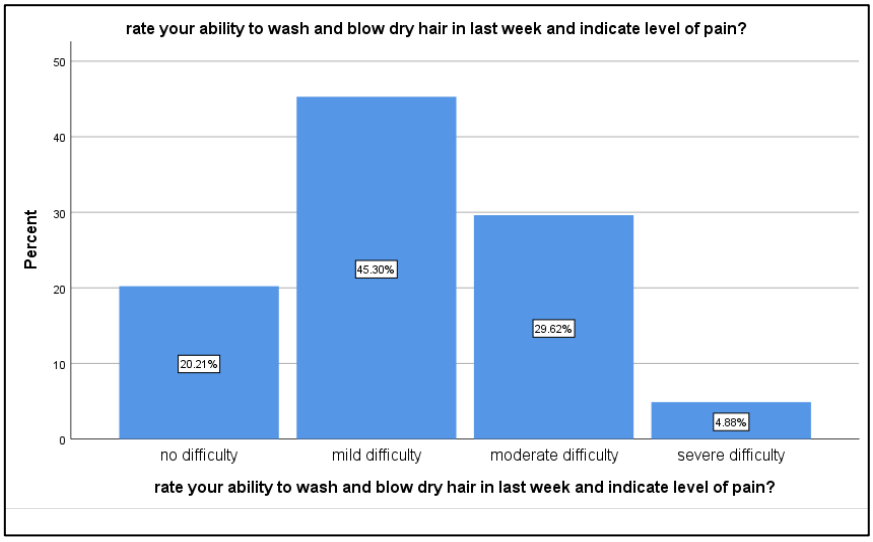

Figure 3. Descriptive Graph of ability to wash and blow dry hair

Table 4. Descriptive of NPRS

	Frequency	Percent	Valid Percent	Cumulative Percent
1	88	30.7	30.7	30.7
2	113	39.4	39.4	70.0
3	64	22.3	22.3	92.3
4	19	6.6	6.6	99.0
5	1	.3	.3	99.3
6	1	.3	.3	99.7
7	1	.3	.3	100.0
Total	287	100.0	100.0	

Indicate level of pain in your finger/thumb at rest, repetitive hand movement, lifting heavy object and how do you often pain over past week by selecting a number 0-10 on a scale

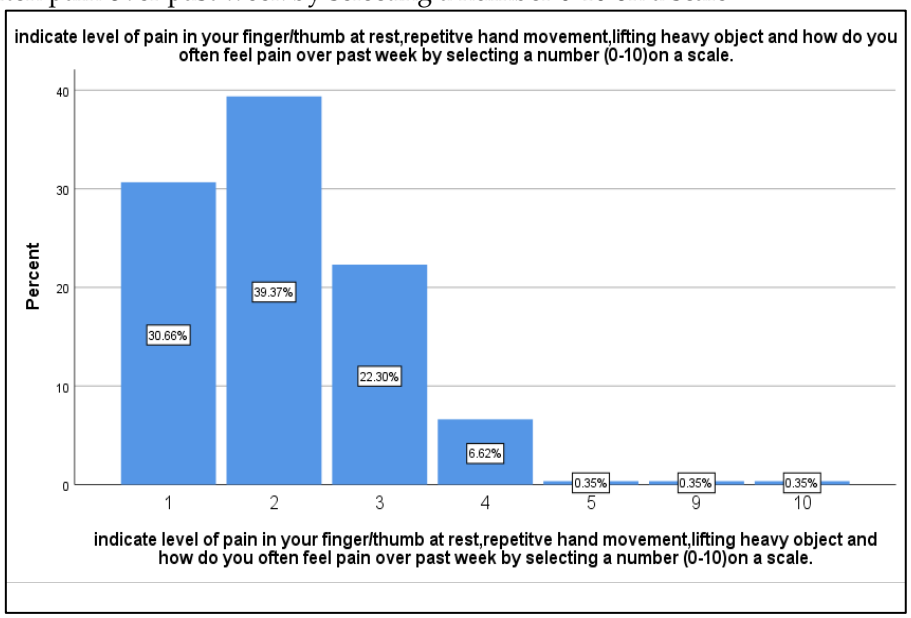

Figure 4. Descriptive Graph of NPRS

4.1. Discussion

A cross-sectional research was conducted to assess the frequency of trigger finger in instrumental performers, utilizing a categorization system based on the types of musical instruments they play. The study w5. As carried out with 320 individuals taking part. Among them, 292 (91.3%) were male, and 28 (8.8%) were female. The results from this investigation indicated that merely 7 (2.2%) of the performers

encountered trigger finger [11]. To draw a comparative analysis, a parallel cross sectional study is undertaken among barbers in Multan, aiming to investigate the prevalence of work-related hand conditions, while employing task-specific or instrument-based classifications unique to their profession. Our current study on barbers include 286 people which consist of 206(72%) male and 77(26.9%) female.

A previous research on trigger finger estimated for it to have a lifetime occurrence of approximately 2%-3% in the general population. It predominantly affects middle-aged women, with a 2-6 times higher likelihood than men, particularly in their dominant hand. The ring finger is the most commonly affected, followed by the middle, index, and little fingers (excluding the thumb). Various conditions associated with metabolic syndrome, including diabetes, hypertension, and dyslipidemia, have been identified as potential risk factors. Additionally, the incidence is elevated in patients with other hand conditions such as carpal tunnel syndrome etc. For diabetes mellitus patients, the risk of developing trigger finger is notably increased [12] [16]. This recent study on barbers also shows low prevalence rate and mostly middle aged men are affected as we collected data mostly from males and less likely from females. Some barbers were struggling through diabetes and stress. Trigger finger was found in dominant hand of the barbers [15] [17].

A previous research said that it is worth noting that close to half of the participants in the prolonged follow up Trigger finger (PF-TF) group reported the non-resolution of their trigger finger (TF) condition, resulting in ongoing disability over an extended period. All individuals in that group underwent some form of treatment, with the majority (91%) receiving one or more corticosteroid injections. These findings represent a novel perspective, differentiating them from previous outcome studies where therapists recorded symptom resolution in 87% of subjects post orthotic intervention, 45–69% after steroid injections, and 98–100% following surgical procedures [13] [18]. This current study on trigger finger in the barber community provided a valuable insight into the occupational impact of this condition in their specific setting. Following our inquiry, the patients revealed that they underwent several corticosteroid shots, which demonstrated efficacy initially but gradually diminished in effectiveness over time.

5. Conclusion

In summary, this investigation found that trigger finger is not very common among barbers, with only 1.7% of them having the condition. The study diagnosed two confirmed cases of trigger finger in barbers and observed uncertain signs in three other cases.

5.1. Ethical considerations

The research study adhered to the guidelines and regulations set by the ethical committee of TIMES Institute, Multan. The rights of the research participants were upheld throughout the study, following the practices outlined below:

- Written informed consent was obtained from all participants, ensuring their voluntary participation in the study.
- Strict confidentiality measures were implemented to safeguard the information and data collected during the research.
- Participants' identities were anonymized, protecting their privacy and maintaining confidentiality.
- Participants were provided with clear information regarding the study procedure.
- Data was securely stored with restricted access, using password-protected measures

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