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Can Smartphones Cause Trigger Finger?

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Abstract

With the pervasive use of smartphones in modern-day society, concerns have arisen regarding their impact on musculoskeletal fitness. This takes a look at aims to discover the ability hyperlink among telephone utilization and the improvement of trigger finger (stenosing tenosynovitis), a condition characterized with the aid of ache, stiffness, and locking of the palms. Through a move-sectional have a look at involving two hundred contributors of various long a time and genders, statistics became gathered on phone utilization styles, period, and associated signs. The findings indicate a big correlation between prolonged telephone use (more than 3 hours each day) and the incidence of cause finger, specifically amongst people aged 20 to 35. Medical examinations, inclusive of MRI and MSK ultrasound imaging, supported these observations. The observation underscores the significance of adopting preventive measures, together with regular breaks, ergonomic add-ons, and physical activities to mitigate the risks associated with immoderate cellphone use. This research highlights the need for accelerated awareness and responsible utilization to protect musculoskeletal fitness within the digital age.

Keywords: Smartphone; Trigger finger; Overuse

Introduction

In our modern digital era, smartphones have become an integral part of our daily lives. We use them to communicate, work, entertain, and even track our personal health. However, being so dependent on these devices can come with a host of health challenges, one of which is (Trigger Finger) This condition affects the tendons in the fingers, causing pain and stiffness that can impede normal hand movement. With the increasing use of smartphones, the question arises: Can smartphones cause or contribute to the development of trigger fingers?

Understanding Trigger Finger

Trigger finger is a condition characterized by a narrowing of the sheath surrounding the tendon that flexes the finger, causing the finger to bend or lock in a certain position before suddenly returning to its normal position, such as when you pull a trigger. This condition is caused by inflammation and swelling of the tendon that flexes the finger. This condition can be accompanied by severe pain and difficulty moving, and sometimes surgery may be required to relieve the symptoms [1-4].

Smartphone use as a contributing factor

With the increasing use of smartphones, many individuals find themselves in unnatural positions for extended periods of time. Some of the most common of these positions are constantly scrolling, typing on a small keyboard, and even holding a phone for long periods. These activities require repetitive and constant movement of the fingers and tendons, which can cause stress on the tendons and joints.

The relationship between smartphones and trigger finger

Some studies suggest that excessive smartphone use can increase the risk of developing conditions like trigger fingers. The repetitive motion of the fingers and tendons during scrolling and tapping can irritate the tendons and increase stress-over use-on the sheath surrounding the tendon. Additionally, prolonged smartphone use can cause chronic strain on the muscles and tendons, increasing the likelihood of injury.

Materials and Methods

The introduction: This section aims to explain the materials and methods used to study the relationship between smartphone use and trigger finger. The methods used explain how data was collected and analyzed to arrive at accurate scientific results [5,6].

Materials

Study sample:

Participants: The study included a diverse sample of 200 people (Table 1), with an equal distribution between genders and different age groups, and backgrounds, who regularly use smartphones. Participants were invited through open invitations in local communities and social media platforms. The percentage of those who underwent an MRI due to pain was 3 cases (1.5% of cases) from the group that used the phone for more than 6 hours (Table 3). While we use MSK ultrasound imaging to help in diagnosis 13% of cases (26 persons) (Table 4) because it gives better practical results in terms of finger and tendon movement dynamic method imaging, while MRI is static. As for treatment, most cases were treated classically with rest, wearing a soft brace and medication (anti-inflamatory and analgesics), and 7% of the cases (14 cases) we used injections with Depo-medrol, and they are from the groups aged 20 and above and those who use the devices for more than 3 hours daily

Table 1:

Age/Gender	Oct-15	15-20	20-25	25-30	30-35	Total
Male	15	25	25	20	15	100
Female	15	25	25	20	15	100
Total	30	50	50	40	30	200

Table 2:

Time/age	<1h	1-3 h	3-6h	>6h	total
Oct-15	8	10	6	6	30
15-20	5	10	20	15	50
20-25	1	9	20	20	50
25-30	5	10	20	5	40
30-35	5	10	10	5	30
	24	49	76	51	200

Table 3:

Time/age	<1h	1-3 h	3-6h	>6h	Total
Oct-20	0	0	0	0	0
15-20	0	0	0	0	0
20-25	0	0	0	0	0
20-25	0	0	0	1	1
25-30	0	0	0	1	1
30-35	0	0	1	0	1

Table 4:

Time/age	<1h	1-3 h	3-6h	>6h	Total
Oct-15	0	0	0	0	0
15-20	0	0	0	1	1
20-25	0	0	1	3	4
20-25	0	0	4	7	11
25-30	0	1	2	5	8
30-35	0	0	1	1	2

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Tools and Techniques

a. Structured questionnaire: A questionnaire was designed containing questions related to smartphone usage patterns, daily usage duration, and users' activities while using the phones (such as scrolling, tapping, typing). (Table 2).

b. Medical examinations: Medical examinations were performed to assess the condition of the participants' tendons and fingers, including physical examination and assessment of tendon flexibility.

Facilities and equipment

MRI machines (MRI): To be used to image the tendons and ligaments in the hand to determine any damage or inflammation.

Ultrasound devices: To examine the tendons and ligaments in the hands periodically. Using MRI to diagnosis cases according to age group (Table 3).

Methods

Study design

a. Study type: The study was based on a cross-sectional study design to investigate the relationship between smartphone use and trigger finger.

b. Study period: The study lasted for one year and six months (January2023 - June 2024), during which time data was collected and analyzed [7-9].

Data collection

i. Surveys: Questionnaires were distributed to participants online and in paper form. Data was collected on daily activities related to smartphone use and any symptoms associated with trigger finger.

ii. Medical follow-up: Medical follow-up and necessary examinations were performed for each participant, (Table 5) and the affected finger (Table 6) therapy according to age group.

Table 5:

Age/Therapy	Oct-15	15-20	20-25	25-30	30-35	total
Medication+rest	1	5	7	1	0	14
Medication+Rest+brace	0	4	12	7	3	26
Injection Dep-medrol	0	0	2	5	7	14
total	1	9	21	13	10	54

Table 6:

Finger/age	Thumb	Ring	Index	Total
Oct-15	1	0	0	1
15-20	5	4	0	9
20-25	11	9	1	21
25-30	7	5	1	13
30-35	6	4	0	10
total	30	22	2	54

Data analysis

a. Descriptive analysis: Descriptive analysis was used to understand the demographic distribution of participants and smartphone usage patterns.

b. Statistical analysis: Statistical analysis tools such as logistic regression was used to analyze the relationship between duration of smartphone use and symptoms associated with trigger finger.

c. Compare groups: The results of participants who showed symptoms of trigger finger were compared with those who did not show symptoms, to determine any statistically significant differences.

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Conclusion

By applying these materials and methods, the study aims to provide a comprehensive overview of the impact of smartphone use on tendon and finger health, and to determine whether there is a direct association between them. The results derived from this study could be useful in developing preventive guidelines and reducing the risk of trigger finger among smartphone users.

Result

While smartphones cannot be considered the sole causative factor for trigger finger, their heavy and frequent use can contribute to an increased risk of developing this condition. By adopting healthy practices and taking the appropriate precautions, this risk can be reduced, and hands and fingers can be kept healthy, allowing us to benefit from technology without sacrificing our health. The analysis showed that there is a relationship between the duration of smartphone use and an increased risk of developing trigger finger. Injuries were more common among participants who used their phones for more than 3 hours per day, especially in the 20-35 age group. Through research it was found that 26% of the cases were surprised due to pain in the finger and almost half of these cases, i.e. 13% of the total, required medical treatment with a brace and 6% required drug treatment with rest for 3 weeks and the same percentage was given with rest only. It can be concluded that the prolonged use of mobile phones for more than 3 hours per day is a reason for getting trigger finger. It is noted that the thumb was the most affected and painful at a rate of 55% compared to 45% for the second finger -ring.

Conclusion

Excessive and frequent use of smartphones can be a contributing factor in the development of certain tendon and joint conditions, including trigger finger. This condition involves inflammation and narrowing of the sheath surrounding the tendon that flexes the finger, leading to symptoms such as pain, stiffness and difficulty moving..

Studies suggest that activities that require repetitive, intense finger movements, such as constant scrolling and tapping on smartphone screens, can contribute to tendon strain and increased stress on the tendons, increasing the risk of trigger finger. However, smartphones cannot be considered the only factor causing this condition, as tendons can also be affected by other factors such as age, chronic diseases, and occupational and sports activities. To prevent the development of this condition, it is recommended to follow some preventive measures such as taking regular breaks, using supportive accessories to reduce stress on the tendons, and practicing stretching and strengthening exercises for the fingers. Taking care of these factors can help reduce the risk of injury and maintain healthy hands and fingers.

Prevention and Management

To prevent trigger finger associated with smartphone use, there are some simple measures that can be taken. These measures include:

a. **Take regular breaks:** Avoid prolonged use of your phone by taking regular breaks to rest your hands and fingers.

b. **Use of auxiliary accessories:** Using accessories such as phone holders and stands can reduce direct pressure on the tendons.

c. **Exercises and stretching:** Doing stretching and strengthening exercises for your hands and fingers can help maintain the flexibility of your tendons and muscles.

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