

# Instagram and Achilles Tendon Surgery: Evaluation of Patients' Perceptions of Surgery

Yigit Kultur (✉ [yigitkulturr@hotmail.com](mailto:yigitkulturr@hotmail.com))

Taksim Training and Research Hospital <https://orcid.org/0000-0001-8201-6994>

Emre Bal

Fatih Sultan Mehmet Training and Research Hospital: Fatih Sultan Mehmet Egitim ve Arastirma Hastanesi

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## Research Article

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# Abstract

## Background

We aimed to research and analyze the content related to Achilles tendon surgery shared by patients on Instagram, to know more about the patients' conditions in the perioperative period, which may be important for them but the physicians are unaware of.

## Methods

Covering 78 months between February 15, 2015 and August 17, 2021, the posts published with the hashtag "#achillesurgery" and "#achillesrepair" on Instagram were searched in the application's database. Posts were evaluated using a binary scoring system: Media format, tone, return to work, return to sports, rehabilitation or physical therapy, images of ankle etc. (scar, dressing, stitches, cast, or walking boot), pain, and activities of daily living. The vast majority of posts were related to Achilles tendinopathy and these posts were excluded from the study. All patients who did not undergo Achilles surgery were excluded from the study. Physician accounts, accounts with advertising content related to rehabilitation or physical therapy, accounts related to health and veterinary posts were also excluded.

## Results

Of the 500 posts reviewed, 74% were published by patients and 87% had a positive tone. The mean Instagram like ratio of the posts was 12%. About one third (30%) of the patients posted about the images of ankle etc. and return to sports in their social media posts. The most shared content were posts that had informative content about the disease (41%).

## Conclusions

Our research on the use of social media regarding Achilles tendon surgery provides an alternative perspective on how patients feel about their surgical experience. Understanding the contents of the patients' social media posts may provide an opportunity to better evaluate the surgical experience of patients, which may allow surgeons to manage their patients better.

## Introduction

Social media platforms such as Twitter, Facebook, and Instagram have become a widespread network of social communication, receiving millions of visitors every day while patients utilize this communication network as an opportunity to discuss their health problems [1, 2]. Social media has also contributed to the increase in communication between patients and physicians [3, 4].

Instagram is a social networking application with more than 250 million daily users, where various photos and videos are shared [5]. Since 2011, Instagram has allowed its users to search with hashtags (#) and find like-minded users and posts [5, 6]. Instagram is also a communication tool between the patient, hospital, and physician in orthopedic surgeries and acts for the common benefit of all [7].

In this study, we aimed to research and analyze the content related to Achilles tendon surgery shared by patients on Instagram, to know more about the patients' conditions in the perioperative period, which may be important for them but

the physicians are unaware of. We believe that the data obtained from this study and future studies will help elevate the quality of healthcare by contributing to the improvement of the relationship between the surgeon and the patient.

## Methods

Covering 78 months between February 15, 2015 and August 17, 2021, the posts published with the hashtag '#achillessurgery and #achillesrepair' on Instagram were searched in the application's database. The search terms and the number of posts related to #achillessurgery and #achillesrepair were recorded. The results of the search were cataloged and analyzed by two separate researchers. The differences between the reviewers were resolved by analyzing the media together to reach a consensus. In case of persistent disagreement, the post was excluded from the study. Picodash (San Francisco, CA, USA) application was used for the analysis of the Instagram database on a web-based platform using a personal computer instead of a smartphone. The search was conducted with the Iconosquare (Limoges, France) software to ensure no posts were missed. Considering that the submissions were already open to the public, no identifying information was removed from the study, and no ethics committee approval was sought.

All posts that contained the hashtag #achillessurgery and #achillesrepair, included human subjects, and were in English were included in the study. The vast majority of posts were related to Achilles tendinopathy and these posts were excluded from the study. All patients who did not undergo Achilles surgery were excluded from the study. Physician accounts, accounts with advertising content related to rehabilitation or physical therapy, accounts related to health and veterinary posts were also excluded.

The primary outcome variables obtained by the examination of the posts were evaluated using a binary scoring system: media format (photo or video), the time the post was shared regarding surgery (before or after), tone (positive or negative), return to work (RTW) reference (yes or no), return to sports (RTS) reference (yes or no), rehabilitation or physical therapy reference (yes or no), images of ankle etc. reference (scar, dressing, stitches, cast, or walking boot) (yes or no), pain (yes or no), and activities of daily living (ADL) reference (yes or no). In addition, the time the post was shared in the perioperative period was grouped (>1 week before surgery or ≤1 week before surgery and ≤1 week after surgery or >1 week after surgery; 1st anniversary of surgery) (Table 1).

The shared content was classified under exercise training, informative content about the disease, patients experience and surgical technique categories (Table 2).

For each post with the hashtag #achillessurgery and #achillesrepair, the 'Instagram like ratio' was calculated by dividing the number of likes by the number of followers ( $\text{like} \times 100 / [\text{like} + \text{dislike}]$ ), and then the average 'Instagram like ratio' was obtained [8].

## Results

Within approximately a time frame of six years, 500 public posts on Instagram with the hashtag #achillessurgery and #achillesrepair were evaluated in this study. On average, 6.4 posts per month were shared on Achilles surgery. No posts were excluded due to disagreement between reviewers.

Of the 500 posts reviewed, 67% were photographs and 33% were videos, while 69% of them were posted by female patients. Posts with a positive tone comprised 87% of all posts.

In terms of the time the post was shared, 92% were found to be posted after surgery and 8% before surgery. In the evaluation of the time the post was shared regarding the perioperative period, 17% of the posts were found to be shared

within 1 week before or after the surgery ( $\leq 1$  week before surgery [8%] and  $\leq 1$  week after surgery [9%]), whereas 9% of the posts were shared on the 1st anniversary of the surgery.

About one third (30%) of the patients posted about the images of ankle etc. and RTS in their social media posts. Rehabilitation/physical therapy was also frequently mentioned in the posts (29%). Other relevant comments in the posts were references to RTW (20%), ADL (18%), and pain (14%).

As for the categorization of the posts regarding their contents, 44% included informative content about the disease, while 36% had content about patients' experience, 15% exercise training and 4% surgical technique.

The average 'Instagram like ratio' of the posts with the hashtag #achillesurgery and #achillesrepair was 12%.

## Discussion

The analysis of orthopedic surgery on social media is a new trend, and as far as we know, no study has been conducted on this subject in foot and ankle surgery until now. This observational study on social media showed that in Achilles tendon surgery, the patients focused heavily on scar appearance, RTS, and postoperative rehabilitation in their posts. Given that 30% of the posts refer to RTS, it could be argued that this is considered as a primary criterion by the patients in judging the success of Achilles tendon surgery. We believe that the patients described themselves more positively than they were in general.

While 87% of the Instagram posts in this study had a positive tone, previous social media analyses have shown that the percentage of patients with a positive tone following anterior cruciate ligament reconstruction, arthroplasty, and shoulder-elbow procedures ranged between 87% and 93% [9–11]. In their social media study, Haeberle et al. [12] reported a positive tone in 53% of the patients that underwent hip arthroscopy and attributed this low rate to the postoperative recovery protocol. In our study, the patients were generally optimistic when talking about the rehabilitation process after Achilles tendon surgery. Since ankle movements were seldom mentioned in the posts, the range of motion of the ankle joint was thought to be ignored by the post owners.

We observed that 74% of the posts were shared after the first postoperative week. We attribute this to the fact that post owners stay away from social media in the posttraumatic and early postoperative period.

There may be information pollution caused by the sharing of informative content about the disease by non-health professionals since the content of the posts that included informative content about the disease was 41% and most (74%) of the post owners were patients.

The number of followers and likes is seen as an important measure of the brand value of a person or company. Instagram users tend to increase the number of followers and likes to get a good impression [13]. According to classical knowledge, when you have a large number of followers and likes, the effectiveness of the post increases, and the so-called 'social proof' occurs. Social proof is a psychological phenomenon in which users assume that people follow what the majority follows. When the number of followers and likes is high, people believe the content is good [14].

Nowadays, it is assumed that Instagram users get an idea of the credibility of a post based on its likes/followers ratio. It has been determined that a post for every 1,000 followers in reliable accounts receives an average of 30 to 140 likes (3%-14%) [13, 15]. If it is well above or below these rates, the content is considered to cause distrust for users [13]. In our study, the mean Instagram like ratio was 12%; this is accepted within the safe limits stated in previous studies.

Our study had some limitations. Since only the posts open to the public were evaluated, the number of posts was limited to 500. However, 500 patients who have undergone Achilles surgery are not to be underestimated. In addition, social

media users have the potential to present themselves better than they actually are. For this reason, the number of positive tones may be higher than it should be. The details of the surgical technique used are unknown. In addition, due to the design of this study, each surgeon is different, which may affect the results.

## Conclusions

Considering the transition to patient-centered care models today, researching and analyzing the patients' perception of their health is valuable feedback for healthcare system practitioners. The current systems generally make evaluations using standardized and stereotyped questions. Our research on the use of social media regarding Achilles tendon surgery provides an alternative perspective on how patients feel about their surgical experience. Understanding the contents of the patients' social media posts may provide an opportunity to better evaluate the surgical experience of patients, which may allow surgeons to manage their patients better.

## Abbreviations

RTW

Return to work

RTS

Return to sports

ADL

Activities of daily living

## Declarations

**Ethics approval and consent to participate:** Not applicable.

**Consent for publication:** Not applicable.

**Availability of data and material:** Data collected during the study are available from the author on request.

**Competing Interests:** The Authors declares that there is no conflict of interest.

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**Authors' contributions:** YK and EB were responsible for the idea and conception of the study. YK and EB planned the Study protocol. YK and EB were responsible for all data acquisition. YK and EB wrote the Manuscript. Both authors read and approved the final manuscript.

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## Tables

**Table 1.** Patient analysis of 500 posts from #achillessurgery search on Instagram

Category	n	(%)
Photographic media	336	67
Video media	164	33
Preoperative media	41	8
Postoperative media	459	92
Perioperative media:	85	17
Media with positive tone	437	87
Media with negative tone	63	13
Media referencing RTS	151	30
Media referencing RTW	98	20
Media of images of ankle etc.	152	30
Media reference rehabilitation/PT	143	29
ADL	91	18
Pain	70	14
<1 wk before surgery	41	8
<1 wk after surgery	44	9
>1 wk after surgery	372	74
1. year anniversary of surgery	43	9

**Table 2.** Category of post contents

<b>Category of post contents</b>	<b>n</b>	<b>(%)</b>
Education of exercise	71	15
Informative content of disease	207	44
Patient experience	169	36
Surgical Technique	20	4