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Instagram and lumbar discectomy surgery: An evaluation of patients' perception of surgery in social media

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Abstract

Background/Aim: Most scoring systems in healthcare take into account the physical condition and pain status of a patient, but the impact of society on the individual is ignored. The aim of our study was to evaluate the social media posts made by patients regarding lumbar discectomy surgery. The objective was to identify and explore concerns and issues that may not be immediately evident during clinical evaluations but are significant to the patients themselves.

Methods: Public posts with the hashtags #discectomy, #lumbardisectomy, and #discectomyrecovery were examined on the Instagram application. The tone of the post, return to sports (RTS), rehabilitation or physical therapy (PT), return to work (RTW), incision site (e.g., scarring, sutures, and dressing), pain, activities of daily living (ADL), and X-ray/magnetic resonance imaging (MRI) data were evaluated. The "Instagram likes ratio" was determined by dividing the total number of likes received for each post by the number of followers.

Results: 272 posts were assessed, and 77.9% of them exhibited a positive tone. The topic that was most frequently discussed was ADL, which was discussed in 24.6% of the posts. Statistical analysis demonstrated a significant association between positive tone and ADL, as well as positive tone and RTS (P<0.001). A statistically significant correlation was observed between negative tone and neurological deficits, pain, and X-ray/MRI findings (P<0.001).

Conclusion: Our study offers a unique perspective on the experience and satisfaction of patients who have undergone lumbar discectomy. Neurologic deficits and pain were notably significant in the negative posts. However, in general, the majority of the posts maintained a positive tone. The results could provide insights into patients' experiences and perspectives that can potentially inform healthcare professionals in providing more comprehensive and patient-centered care.

Keywords: discectomy, Instagram, social media, post, hashtag, return to sports

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Introduction

Social media has become an indispensable and regularly used part of our daily lives. Carr and Hayes define social media as internet-based platforms that enable users to engage in interactive and self-presentation activities either in real time or asynchronously. These platforms cater to diverse audiences both broad and specific who derive value from user-generated content and the sense of interacting with others [1].

On average, a person spends at least six hours a week on the internet. Furthermore, 15% of internet users follow health-related data, and 34% of adult internet users follow health-related treatments through various online reviews, promotional sites, and blogs [2]. In 2010, Baker et al. [3] reported that approximately 30% of patients who opted for elective spinal surgery performed an internet search prior to the surgery. This indicates that a significant portion of patients actively seek information online before making decisions about their medical procedures.

As of January 2020, popular social media applications including WhatsApp, Facebook, Instagram, WeChat, and TikTok collectively had a staggering user base of 3.8 billion. This highlights the widespread reach and influence of social media platforms in connecting billions of individuals worldwide [4]. Instagram is a platform that allows its users to express themselves by taking photos and videos and sharing them on their accounts [5]. Since 2011, the platform has allowed its users to find posts by like-minded users by searching with hashtags (#) [6]. This allows patients to connect with online communities of individuals who have similar health problems.

The utilization of social media in the healthcare sector is experiencing continuous growth. This trend has been further accelerated by the global pandemic in recent years as patients increasingly seek convenient access to health-related information through various social media platforms. Consequently, such platforms have become a valuable resource for telemedicine, and healthcare professionals and patients are utilizing these platforms more intensively for communication and remote medical consultations.

This trend underscores the evolving role of social media in facilitating access to healthcare services and the dissemination of valuable health information. It signifies the increasing importance of social media platforms as effective tools for connecting individuals with healthcare resources and promoting health literacy in the digital age [7]. It may also be asserted that patients can express themselves more comfortably on social media than at the doctor’s office. Most scoring systems in healthcare take into account the physical condition and pain status of a patient, but the impact of society on the individual is ignored. However, considering that humans are bio-psycho-social beings, we believe that the evaluation of a patient’s clinical situation under influence of society, particularly social media, may offer physicians a different perspective.

The aim of this study was to assess the social media posts of patients who have undergone lumbar discectomy surgery. The objective was to identify any issues or concerns that may not be easily detected through conventional clinical evaluations but hold significant importance for patients. Essentially, our goal was to establish a connection between the operating room and social media platforms. By analyzing patients' posts related to their surgical experiences, we sought to gain insights into their needs and expectations, which could foster a stronger doctor-patient relationship and enhance overall awareness in the medical community.

Materials and methods

In July 2022, a search was conducted on Instagram's public accounts among posts from July 2020 to June 2022. In this cross-sectional study, public posts published with the hashtags #discectomy, #discectomyrecovery, and #lumbardisectomy were examined. The search results were evaluated by two researchers. To reach consensus, any differences between analysts were evaluated together. In cases of disputes, posts that were subject to contention were excluded from the study to ensure the integrity and reliability of the findings. By removing such posts, the aim was to maintain the validity and accuracy of the analyzed data. Since the posts were publicly available, ethics committee approval was not obtained.

The evaluation included the tone of the post, return to sports (RTS), rehabilitation or physical therapy (PT), return to work (RTW), incision site details (such as scarring, sutures, and dressing), pain, activities of daily living (ADL), and X-ray/magnetic resonance imaging (MRI) data. Furthermore, the timing of post-operative sharing was recorded and categorized as follows: posts shared within one week after surgery, posts shared more than one week after surgery, and posts shared on the anniversary of the surgery.

Inclusion and exclusion criteria

The search results revealed a total of 272 patients who had undergone lumbar discectomy. These patients were identified through the use of specific hashtags: #discectomy, #discectomyrecovery, and #lumbardiscectomy. For each patient, only the first and most relevant hashtag was included in the study. To ensure the relevance of the data, advertisements pertaining to rehabilitation or physical therapy, accounts of physicians, and accounts primarily focused on sharing general health-related content were excluded from the study. Posts were also excluded if they were shared preoperatively, contained video content, were specifically about cervical discectomy, were veterinary-related posts, or were written in a language other than English. Those who did not have a history of discectomy surgery in their social media statements were excluded from the study. Posts not detected as having positive or negative tones (neutral tones) were also excluded.

Statistical analysis

Statistical analysis was conducted using the program SPSS 15.0 for Windows. Descriptive statistics such as the mean, standard deviation, minimum, maximum, and median were used to summarize numerical variables. Categorical variables are presented as numbers and percentages. For non-normally distributed data, the Mann-Whitney U test was employed to compare two independent groups. The chi-squared test was used for comparing results within groups. A significance level of $P<0.05$ was used to determine statistical significance.

Results

Females constituted the majority of participants in the study, accounting for 79.4% compared to 20.6% males. A significant proportion of posts (66.9%) were shared after the initial week following the surgery. Posts shared within the first postoperative week accounted for 23.8%, while those shared on the anniversary of the surgery made up 9.1% of the total. A significant proportion of posts (77.9%) had a positive tone, while 22.1% had a negative tone. The most frequently mentioned topic in the posts was ADL (24.6%), followed by the incision site (22.7%), pain (21.3%), RTS (19.8%), X-ray/MRI (12.8%), RTW (4.4%), and PT (3.6%). No posts were excluded due to persistent disagreement.

The results of the statistical analysis indicated a significant correlation between positive tone and ADL as well as positive tone and RTS (P<0.001). A significant relationship was observed between negative tone and neurological deficit, pain, and X-ray/MRI (P<0.001) (Table 1). There were significant associations between pain and neurological deficit (P=0.003), as well as between X-ray/MRI and neurological deficit (P=0.043) (Table 2). However, no statistically significant relationships were found between post tone and sex (P=0.395), RTW (P=0.075), rehabilitation/physical therapy (P=0.125), and incision site (P=0.409). The average "Instagram like ratio" for the posts was 11%.

Table 1: The relationship between patient characteristics and the tone used in the posts.

		Tone				
		Negative n=60 (22.1%)		Positive n=212 (77.9%)		
		n	%	n	%	*P*-value
Gender	Female	50	83.3%	166	78.3%	0.395
	Male	10	16.7%	46	21.7%	
Timing of the post	≤1 week after surgery	26	43.3%	39	18.4%	<0.001
	>1 week after surgery	34	56.7%	148	69.8%	
	Anniversary of surgery	0	0.0%	25	11.8%	
Neurological deficit	No	49	81.7%	212	100%	<0.001
	Yes	11	18.3%	0	0.0%	
Post content	RTS	1	1.1%	53	25%	<0.001
	RTW	0	0.0%	12	5.6%	0.075
	ADL	2	2.3%	65	30.6%	<0.001
	Rehabilitation/PT	0	0.0%	10	4.7%	0.125
	Incision site	11	12.7%	51	24%	0.409
	Pain	50	58.1%	8	3.7%	<0.001
	X-ray or MRI	22	25.5%	13	6.1%	<0.001

ADL: activities of daily living, PT: physical therapy, RTS: return to sports, RTW: return to work. * Posts could have more than one post content *Significant p values are written in bold.

Table 2: The relationship between post characteristics and the presence of neurological deficit.

				Neurological deficit				
				No n=261 (96.0%)		Yes n=11 (4.0%)		
		n	%	n	%	n	%	*P*-value
Gender	Female	216	79.4%	205	78.5%	11	100%	0.128
	Male	56	20.6%	56	21.5%	0	0.0%	
Timing of the post	≤1 week after surgery	65	23.9%	62	23.8%	3	27.3%	0.791
	>1 week after surgery	182	66.9%	174	66.7%	8	72.7%	
	Anniversary of surgery	25	9.2%	25	9.6%	0	0.0%	
Tone of the post	Negative	60	22.1%	49	18.8%	11	100%	<0.001
	Positive	212	77.9%	212	81.2%	0	0.0%	
Post Content	RTS	54	18.1%	54	19%	0	0.0%	0.128
	RTW	12	4.0%	12	4.2%	0	0.0%	1.000
	ADL	67	22.4%	67	23.6%	0	0.0%	0.071
	Rehabilitation/PT	10	3.3%	10	3.5%	0	0.0%	1.000
	Incision site	62	20.8%	58	20.4%	4	26.6%	0.290
	Pain	58	19.4%	51	18%	7	46.6%	0.003
	X-ray/MRI	35	11.7%	31	10.9%	4	26.6%	0.043

ADL: activities of daily living, PT: physical therapy, RTS: return to sports, RTW: return to work. * Posts could have more than one post content. Significant p values are written in bold.

Discussion

Menendez et al. [9] highlighted the lack of clarity regarding the relationship between disability improvement, pain relief, and patient satisfaction after spinal surgery. They argue that traditional measures are insufficient to evaluate patient satisfaction as it is not solely dependent on the surgical outcome. They emphasize that patient satisfaction is influenced by seven key variables: pain levels, functional improvement, patient expectations and preferences, patient health characteristics, the interpersonal manner of the caregiver, efficacy and clinical outcomes of the treatment, and postoperative care and therapy. These factors together shape the overall patient experience and level of satisfaction.

Krauss et al. [10] stated that psychological factors may also be important. According to expectation-disconfirmation theory, the performance of a product (healthcare in this case) should be at least as much as a person's (the patient's) expectation. Otherwise, the person will have a negative view towards the product [11]. Scoring systems have been developed to evaluate patient satisfaction, such as the Press-Ganey system, but they are applied using stereotyped questions, so they cannot adequately reflect the insight of the patients, their perspective on the treatment, and their satisfaction [12].

Thus far, there has been no comprehensive disease-specific evaluation method that encompasses all aspects of patient satisfaction in the field of spine surgery. However, it is important to note that when patient satisfaction levels rise, several positive outcomes can be anticipated. These include increased treatment adherence, improved clinical outcomes, and a decrease in malpractice suits. The development of a robust evaluation approach that encompasses all dimensions of patient satisfaction in spine surgery is very important to enhance patient experiences and optimize overall healthcare outcomes.

Lumbar disc herniation is widely acknowledged as a prominent contributor to both low back pain and sciatica, representing a significant source of discomfort and impairment for individuals. Surgery should be considered in cases where conservative treatment has been applied for a certain period of time but is insufficient or there is a progressive neurological deficit. The surgical options include open, microendoscopic, and percutaneous endoscopic discectomy techniques, which have improved considerably in recent years [13]. Carragee et al. [14] reported that the failure rate in lumbar disc surgery varies between 20 and 40%, and low back pain, sciatica, and recurrent disc herniation were blamed as the causes of this failure. In our study, the causes of failure were pain and neurological deficits. Our observation that 22.1% of the analyzed posts exhibited a negative tone is consistent with the literature, providing additional support to our assertion that social media content can be a valuable resource for evaluating patient satisfaction.

Previous studies have utilized social media platforms to assess patient perceptions in various healthcare areas, including adult spine fusion, shoulder and elbow surgery, hip arthroscopy, anterior cruciate ligament surgery, pediatric scoliosis, cervical disc surgery, and total joint arthroplasty [15–20]. However, to our knowledge, no other study has focused on lumbar discectomy so far. In a study by Ramkumar et al. [17], 88% of the posts shared by patients who underwent anterior cruciate

ligament surgery had a positive tone, and the majority of them were related to rehabilitation and RTS. Another study on joint arthroplasties reported a prevalence of 93% for positive tone, and the posts generally focused on rehabilitation and ADL [16]. Similarly, in another study, 87% of the posts related to shoulder and elbow surgery had a positive tone, and return to play, surgical site, and ADL were the most shared topics [18].

According to Haeberle et al. [21] did a study on hip arthroscopy and found that 52.9% of the related social media posts had a positive tone. They suggested that the lower rates of positive tone compared to other studies could be attributed to the specific recovery protocol implemented after hip arthroscopy. The most shared content was about rehabilitation. Rizkalla et al. [15] found a prevalence of 85% for positive tone as a result of the searches made with the hashtag “spine fusion”. The authors reported that there was no significant relationship between positive tone and ADL or between negative tone, pain, and ongoing neurological deficit.

In this study, posts with a positive tone constituted the vast majority (77.9%) and were found to be correlated with posts with ADL and RTS content. Negative posts comprised 22.1% of all posts and were associated with posts related to pain, neurological deficit, and X-ray/MRI. These data should encourage surgeons to proactively rehabilitate patients to return their previous activity level as early as possible. If there is no risk of complications in the early period after the surgery, the patient should be allowed to return to practicing sports in the short term.

Pain control should be provided on a long-term basis with appropriate medical treatment. Surgeons providing one-to-one explanation to patients regarding X-ray and MRI images could help to satisfy the patients’ curiosity and anxiety. It is necessary to take measures to prevent the development of neurological deficits, to maintain a high level of communication with the patient in case any deficits develop, and to patiently pay attention to the necessary surgical/rehabilitation treatments in coordination with the patient and at every stage.

According to a study conducted by Dominy et al. [22], Instagram exhibited the highest percentage of positive posts compared to other social media platforms. This may be due to Instagram’s more visual-focused posts and its special filters, which could increase the attractiveness of the posts. In our study, we observed that posts related to X-ray/MRI, which included visual content, had a negative tone and were associated with pain and neurological deficit. This finding suggests that users may have shared these posts to seek medical advice from their followers. The negative tone in these posts could reflect the users' concerns and the impact of their symptoms on their wellbeing.

In a social media study on Instagram, Holderread et al. [20] found a significant correlation between the incision site and patient satisfaction in cervical disc herniation operations. In contrast, our study did not find a significant relationship between the tone of the posts and the incision site. This discrepancy could be attributed to the visibility and attention drawn to the surgical incision in cervical disc surgeries, which is made in the frontal neck region. In contrast, the incision in lumbar surgeries is typically located in the waist region and is less visible, potentially leading to fewer mentions or discussions related to the incision site in social media posts.

In our study, the majority of the posts (66.9%) were shared after the first week following the surgical procedure. This suggests that patients tended to use Instagram less frequently in the early postoperative period (23.8%) but became more active in sharing their experiences and updates as time progressed. Users’ post-sharing times were found to be compatible with the literature. In a study by Ramkumar et al. [17], 21.8% of posts were shared in the first week after operation, and 71.5% were shared after the first week. This situation may be interpreted as patients avoiding social media in the first week after surgery.

In addition, negative tones were observed to be more common in the first week after surgery. This observation could be attributed to the pain and functional limitations experienced by patients during the early stages of the postoperative period. Additionally, it is noteworthy that posts shared on the anniversary of the surgery accounted for 9.1% of the total, and it is remarkable that all of these posts expressed a positive tone. The evaluation of satisfaction on the anniversary of the surgery among studies on post-operative satisfaction in social media has not been used in previous studies. Evaluation of satisfaction on the anniversary is important in terms of long-term follow-up result.

According to some studies, due to the increasing number of fake accounts, the number of likes per 1000 followers in reliable accounts has been estimated to be approximately 30-140 (3-14%) [23-25]. There is a perception that accounts with posts that are well above or below this rate are unreliable. In our study, the average Instagram like ratio was calculated as 11%. This ratio falls within the “safe limit,” which provides support for the reliability of the posts that were included in our study.

Limitations

One limitation of our study was the absence of information regarding the specific surgical technique employed, such as open, microendoscopic, or percutaneous endoscopic discectomy. Furthermore, the involvement of different operating surgeons introduces a potential factor that may impact the study results. The number of posts was also limited since only publicly accessible accounts were reviewed. Another limitation is the limited number of posts included as we focused on publicly available Instagram posts using a specific set of hashtags related to medical terminology, such as "discectomy" and "lumbar".

This approach may have resulted in the exclusion of a significant number of posts and patients who did not use these specific hashtags or did not use medical jargon in their posts. Consequently, the study sample size was small, which could affect the generalizability of the findings. However, this approach allowed us to obtain a relatively homogeneous group of patients with similar experiences, which could provide valuable insights within the scope of our study objectives. Another limitation is the high tendency of sharing posts with positive tones on Instagram, which may have affected the results. Analyzing social media is a difficult task as users may not regularly post or may post several differing accounts over the course of recovery.

In addition, a certain standardization could be achieved by adding more analysis criteria, such as the interpersonal

manner of the caregiver, the patient's health characteristics, the patient's expectations/preferences, etc. A tool could also be developed to evaluate the patients' satisfaction with specific regard to the spine surgery after passing tests for reliability and validity.

Conclusion

In summary, our study has offered a distinct viewpoint on the satisfaction and experiences of patients who have undergone lumbar discectomy. The majority of the analyzed posts conveyed a positive tone, highlighting a generally positive outlook among patients. However, negative posts were associated with pain and neurological deficit, indicating areas of concern for patient outcomes. The use of social media as a means of evaluating patient perceptions and identifying factors contributing to postoperative dissatisfaction proved to be valuable in our study. This approach sheds light on the potential of social media as a tool for gaining insights into patient experiences and improving surgical care.

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