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Research Articles

An Assessment of the Reliability of Rheumatoid Arthritis Videos on TikTok

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Objectives

Rheumatoid arthritis (RA) is a chronic autoimmune disorder that primarily targets the joints. Social media, particularly TikTok, has become a popular worldwide platform for individuals to learn about chronic conditions like RA. This study aims to assess the reliability of RA content on TikTok and to investigate user engagement and the identity of content creators.

Methods

A search for "rheumatoid arthritis" on November 11th, 2024, was conducted on the social media platform TikTok. A group of four reviewers collected information about each video. It used the validated tool, Discernment, Information, Support, Clarity, Evidence, Relevance, and Needs (DISCERN), to assess the quality of each video. Statistical analysis was performed to compare the DISCERN scores of physicians versus patients and other users. Additional analyses evaluated the correlation between content creators and engagement metrics.

Results

The 126 TikTok videos assessed had over 42 million views and over 2.5 million likes overall. Physicians had significantly greater DISCERN Reliability scores compared to patients ($p<0.05$). There was no difference in the DISCERN Treatment scores between the three groups. There was no significant difference in the measured engagement metrics (views, likes, comments, shares, and video duration) between videos created by physicians, patients, and other users.

Conclusion

Physicians had greater DISCERN Reliability and total DISCERN scores compared to patients. It supports the idea that physicians post more accurate information about RA compared to patients. However, there is no significant difference in the engagement with videos created by physicians versus patients or other users. While physicians post more accurate information, TikTok users engage with all types of content similarly. Thus, TikTok may be better used for information on lived experience from patients rather than accurate medical information.

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INTRODUCTION

Rheumatoid arthritis (RA) is a chronic autoimmune disorder affecting between 0.5% to 1% of the global population.[1] It disproportionately impacts women, who are three times more likely to develop RA than men. This inflammatory disease primarily targets the joints, leading to erosion of cartilage and bone, typically starting in the distal joints of the hands before affecting proximal joints. Additionally, RA has extra-articular effects, with effects on the skin, lungs (pleuritis), heart (pericarditis), eyes (scleritis), and kidneys (nephritis).[2]

As the understanding of RA evolves, diagnostic and treatment approaches also evolve. Currently, nonsteroidal anti-inflammatory drugs (NSAIDs) and steroids are used to control symptoms and reduce inflammation, while disease-modifying antirheumatic drugs (DMARDs) are aimed at slowing disease progression. These include medications like methotrexate, tumor necrosis factor (TNF) inhibitors, and other immune-targeting agents.[3] However, these treatments cause side effects including nausea, fatigue, and increased infection risk. For patients, especially young adults, RA treatment can be challenging because of the need for frequent injections.[4] The lack of a "cure" for RA can lead to patients seeking supplementary or alternative treatment information from a variety of sources.

Social media, particularly TikTok, has become a popular platform for individuals wanting to learn more about medical conditions.[5] The prevalence of social media use for medical information is substantial, with millions turning to platforms like TikTok, Reddit, and even Artificial Intelligence (AI) tools like Chat Generative Pre-trained Transformer (ChatGPT) to explore treatment options, symptom management, and community support.[6]

The reach of TikTok is vast, and according to surveys conducted by the Pew Research Center, one-third of adults in the United States say they use TikTok.[7] The large volume and variety of content on TikTok can be beneficial in raising awareness and sharing patient experiences. Still, it also raises concerns regarding the accuracy and reliability of its information.[8] TikTok's algorithm is designed to optimize content exposure based on user engagement (likes, views, comments) rather than informational accuracy, which makes it difficult to discern reliable medical information from potentially misleading content.

Previous research has assessed the use of TikTok as an information source for medical conditions.[9,10] One study examined the quality of information regarding spinal surgeries on TikTok. Using the Discernment, Information, Support, Clarity, Evidence, Relevance, and Needs (DISCERN) score, a standardized rating metric, they found that though millions of people were using TikTok as a source of counsel, the quality of the videos was varied and generally poor.[9] Another article found similar results when assessing information quality in videos discussing osteoporosis using the DISCERN score, with 54% of videos being in the poor-quality category. Interestingly, there was a positive correlation between the DISCERN score and the number of favorites and shares.[10] Both articles showed that medical providers tended to have a higher quality of information in their videos.

This study will examine TikTok v37.8.0 (2024) videos discussing the chronic condition RA and investigate the types of videos being published, user engagement (views, likes, comments), and the identity of the content creators (medical professionals vs patients vs individual users). Additionally, it will assess whether the content creator correlates with engagement and accuracy of videos and whether video length correlates with video quality and engagement. Through this analysis, this study aims to assess the reliability of RA content on TikTok. The goal is to understand better if TikTok is a platform where medical information can accurately and effectively be communicated to those managing chronic conditions like RA. We hypothesize that longer content and videos posted by physicians will be more reliable and accurate, while videos by individual content creators will receive more attention.

METHODS

DATA COLLECTION

On November 11, 2024, a search for "rheumatoid arthritis" was conducted on the social media platform TikTok. Using the term "rheumatoid arthritis" yielded videos that were most specific to the topic. Using a term such as "RA" yielded results that were too broad or not relevant to the scope of this analysis. The search for rheumatoid arthritis was conducted across four different accounts, and it was verified that the order and the videos were the same in the search. The results were input into a shared spreadsheet to be reviewed. The initial search results were reviewed to identify videos that were relevant to RA. Videos not discussing RA were excluded from the study. These included videos that did not discuss RA, videos discussing other types of arthritis, duplicate content, and videos not in English.

VIDEO REVIEW

A group of four reviewers analyzed each video meeting the inclusion criteria. The reviewers collected the following data for each video:

1. Content Creator: Identified the category of who posted the video as either a medical professional (rheumatologist or other physician), patient, or "other user".
2. Content Type: Classified videos into four categories—educational (providing factual information about RA pathophysiology, diagnosis, treatment, etc), personal experience (sharing individual RA experiences), promotional (advertisements for products, supplements, etc.), or entertainment. The percentage of videos falling into each category was calculated.
3. Accuracy: Assessed each video for factual accuracy and noted any instances of inaccurate or misleading information, and qualitatively summarized common inaccuracies.

4. Engagement Statistics: Recorded metrics including views, comments, shares, video duration, and the date the video was posted. Total and median number of views, comments, and shares were assessed across all reviewed videos.

A team of four separate reviewers independently reviewed each video between November 11, 2024, and November 18, 2024.

QUALITY ASSESSMENT

To evaluate the quality of each video, reviewers used the DISCERN criteria, a validated tool used for assessing the quality of written health information. Although DISCERN is typically applied to written content, the criteria were adapted to assess video content quality. This adaptation was previously done in a study looking at the quality of information provided about acute pancreatitis and spinal surgeries presented on Tik Tok.[9,11] DISCERN involves a total of 16 questions divided into three categories: DISCERN reliability, DISCERN quality of treatment information, and an overall rating on whether the quality of information should be used as a source of information about treatment choices.[12] The DISCERN questions are as follows:

SECTION 1: RELIABILITY

1. Are the aims clear?
2. Does it achieve its aims?
3. Is it relevant?
4. Is it clear what sources of information were used to compile the publication (other than the author or producer)?
5. Is it clear when the information used or reported in the publication was produced?
6. Is it balanced and unbiased?
7. Does it provide details of additional sources of support and information?
8. Does it refer to areas of uncertainty?

SECTION 2: TREATMENT

1. Does it describe how each treatment works?
2. Does it describe the benefits of each treatment?
3. Does it describe the risks of each treatment?
4. Does it describe what would happen if no treatment is used?
5. Does it describe how the treatment choices affect overall quality of life?
6. Is it clear that there may be more than one possible treatment choice?
7. Does it provide support for shared decision-making?

SECTION 3 OVERALL RATING

1. Based on the answers to all the above questions, rate the overall quality of the publication as a source of information about treatment choices

Each question was answered as a numerical score with no = 1, partially = 3, and yes = 5. DISCERN reliability and DISCERN treatment scores could range from 8-40, and DISCERN overall could range from 1-5. The total DISCERN score was also recorded.

Two authors independently scored each video, and the average of their scores was used as the final score for that video. The average DISCERN score across all videos was calculated to represent the overall quality of RA-related content on TikTok.

STATISTICAL ANALYSIS (IBM SPSS V29.0.2.0)

Shapiro-Wilk was used to determine the normality of the data.

1. The Kruskal-Wallis test was used to compare the DISCERN scores and engagement metrics of videos based on content creators (physicians, patients, and other users).
2. The Mann-Whitney U test was used to compare the DISCERN scores and engagement metrics of videos based on the type of content (educational vs personal). The categories of personal experience, promotional, and entertainment were combined into the category “personal”.
3. Pearson correlation analysis was performed between DISCERN scores, engagement metrics, and video duration.

RESULTS

Of the 140 videos that resulted from the search term “Rheumatoid Arthritis” on TikTok, 14 were excluded for not being related to RA, being associated with a different type of arthritis, or not being in English. The resulting 126 videos were included in further analysis. Several inaccuracies were found amongst these videos that have not been supported with peer-reviewed evidence, and a list of those inaccuracies can be found in **Table 1**.

Of the 126 videos, patients posted 62%, physicians posted 14%, and other users posted 24%. When analyzed based on the type of content posted, 54% of videos were personal experiences, 36% were educational, 7.1% were entertainment, and 3.2% were promotional. The videos posted by patients received the majority of the likes, views, comments, and shares. Videos posted by patients received 92% of the total likes of all analyzed videos, while other users received 5.9%, and physicians received 2.0% of all likes. Videos posted by patients received 81% of total views, while other users received 11%, and physicians received 8.0% of all views. Videos posted by patients received 74% of the total comments, while other users received 13%, and physicians received 12% of all comments.

As seen in **Table 2**, the median DISCERN Reliability scores were significantly different between physicians (25, patients (22), and “other users” (22). Physician videos had significantly higher median scores than patients, but no significant difference with the “other” category was found. As seen in **Table 3**, educational videos had a significantly

Table 1. Inaccuracies found in RA TikTok Videos

Topic	Video Number	Content Creator	Description
Diet			
	79	Patient	Food reverses RA, caffeine and meat cause swollen joints, and soda leads to RA
	89	Patient	Cure inflammation with nutrition
	133	Individual User	Flax seed oil cures RA
Gut Health			
	12	Patient	Gut microbiome causes autoimmune diseases
	98	Individual User	Arthritis is due to small bacterial intestinal overgrowth
Holistic Medicine			
	103	Individual User	Imbalance of emotional trauma and energy can lead to RA
	110	Patient	Pain of arthritis is gone when getting rid of stress

Table 2. Median DISCERN Scores and Engagement by Content Creator

Metric	Physician (n=18)		Patient (n=78)		Other (n=30)			
	Median	IQR	Median	IQR	Median	IQR	*P*	Post-hoc
DISCERN Reliability	25.00	9	22	8	22	7	*0.006**	Physician > patient
DISCERN Treatment	8	9	7	7	8.5	5	*0.794*	ns
Total DISCERN	36	11	32	13	33	8	*0.076*	ns
Views (no.)	75,200	354,592	42,150	125,548	56,050	85,300	*0.63*	ns
Likes (no.)	1,600.5	4,274	1,033	3,816	967	2,488	*0.73*	ns
Comments (no.)	104.5	421	103.50	169	33	130	*0.038*	Patient > other
Shares (no.)	224	364	75	412	575	593	*0.23*	ns
Video Duration (seconds)	85.5	136.75	60	141.5	69.5	120.75	*0.779*	ns

*P<0.05 is considered significant
IQR=Interquartile Range
NS=not specified

greater median DISCERN reliability and total DISCERN scores when compared to personal videos, with no significant difference seen in the DISCERN treatment scores.

As seen in both **Tables 2 and 3**, there were no significant differences between most engagement metrics (views, likes, shares, video duration) when comparing content creators or by types of content. **Tables 2 and 3** show the median engagement metrics of the 126 videos assessed, divided by category. All DISCERN scores were also positively correlated with video duration. Additionally, the engagement metrics views, likes, comments, and shares were positively correlated with one another.

DISCUSSION

TikTok is a vast social media platform that gives users access to information at their fingertips. Along with spreading information about global affairs, TikTok has slowly become a source of medical information.[13] There is much discussion regarding the diagnosis, clinical course, and even treatment of RA on this platform, with about 42,550,948 views across 126 videos analyzed in this study. RA is a disease that affects 0.5 to 1% of the world population, leading to opportunities for discourse, not only by medical providers, but by patients and individual users.[1] Of the 126 videos analyzed, because many of the posts were

Table 3. Median DISCERN Scores and Engagement by Type of Content

Metric	Educational (n=45)		Personal (n=81)		
	Median	IQR	Median	IQR	*P*
DISCERN Reliability	24	8	22	8	*< 0.01**
DISCERN Treatment	8	6	8	7	*0.679*
Total DISCERN	36	10	30	10	*< 0.01**
Views (no.)	57,700	146,650	46,400	122,418	*0.247*
Likes (no.)	968	3,924	1,108	3,207	*0.787*
Comments (no.)	63	254	103	161	*0.526*
Shares (no.)	177	366	72	457	*0.122*
Video Duration (seconds)	82	138	60	132.5	*0.165*

*P<0.05 is considered significant
IQR=Interquartile Range

made by patients, 54% of the videos were personal experiences about living with RA. In contrast, 36% of the posts were educational, 7.1% were for entertainment purposes, and 3.2% were for promotional content.

The drawback to this open source of information is an opportunity for the propagation of disinformation.[14] Among the 126 videos analyzed, there were three major categories of misinformation, including the effects of diet on RA, the use of holistic medicine in the treatment of RA, and the implication of gut health as being the root cause of RA **[Table 1]**. Most of this information is being shared by either patients who have RA or individual users who potentially have something to gain from spreading misinformation. For example, a chiropractor who is using TikTok as a promotional platform for their business. The discourse surrounding the effect of diet and gut health on the development of RA is also very pronounced. One user went on to state that RA could be reversed entirely if certain foods, including caffeine, sodas, and meats, were removed from the diet. This is dangerous rhetoric as it could influence viewers to utilize only alternative methods in the hopes of curing their RA.

This is not a novel concept, however, as previous studies have shown inaccuracies in TikTok videos regarding acute pancreatitis. In a recent study, researchers found that the overall quality of TikTok videos related to acute pancreatitis was poor.[11] There were many inaccuracies and false claims made in videos. They also found that videos posted by physicians were higher in quality and scored higher on the DISCERN score criteria compared to those posted by individual users.[11] While that study looked at an acute process such as pancreatitis, in contrast, this study assesses the quality of videos regarding chronic conditions such as RA. RA is also a longitudinal disease with relapses and remissions. This allows for more discourse from patients with personal experiences with the disease. It is therefore important to assess the quality of videos discussing chronic conditions such as RA on a popular social media platform.

The reliability of TikTok videos about rheumatoid arthritis (RA), assessed through DISCERN scores, showed that videos created by physicians were significantly more reliable. Videos posted by physicians had higher scores in the Part 1 DISCERN scores (focusing on reliability questions) and total DISCERN scores when compared to patients. However, Part 2 DISCERN scores, which specifically evaluate treatment information, did not have any significant differences (p=0.39) **[Table 2]**. This is likely because many videos analyzed did not focus exclusively on RA treatments but addressed RA generally. To ensure fairness, the analysis divided the DISCERN tool into two components: Part 1 for general reliability and Part 2 for treatment-related content.

Similarly, educational videos demonstrated higher reliability compared to personal or promotional content, as seen in both the Part 1 and total DISCERN scores (p <0.01, p <0.01) **[Table 3]**. Educational content often aims to provide well-rounded information and is more likely to cite its sources, leading to greater reliability. In contrast, videos with personal or promotional aims usually focus on lived experiences or product promotion, which may lack comprehensive or evidence-based information.[8]

Despite the overall low median DISCERN scores, TikTok remains widely used due to its accessibility and convenience. The low DISCERN scores suggest that TikTok may not be a reliable source for medical information and emphasize the need for viewers to verify information with healthcare professionals or through additional research. TikTok, however, does serve an essential role as a community forum where patients can share lived experiences, as seen by the large proportion of videos created by patients and the high engagement these videos received. While these videos are not meant to educate, they allow individuals to create a community in what could be an isolating experience. Many individuals with autoimmune disease report feeling isolated and misunderstood. Raising awareness and building a better understanding of the disease can help create a more supportive environment for those with autoimmune disease.[4]

Interestingly, engagement metrics, such as views, likes, and shares, showed no significant differences based on the purpose of the videos or the type of creator (p=0.355, p=0.330, p=0.855) **[Tables 2 and 3]**. Additionally, engage-

ment was not correlated with video duration or DISCERN scores, suggesting that factors like reliability, author credibility, or video length are not the primary drivers of viewer interaction. Instead, TikTok viewers may prioritize relatability, entertainment, or perceived relevance to their current circumstances.

A positive correlation was observed between video length and quality (as measured by DISCERN scores), indicating that longer videos were more comprehensive and reliable. However, the typically short length of TikTok videos presents a challenge, as most users may not have the bandwidth or interest to engage with longer, high-quality videos. To address this, "medical influencers" aiming to share reliable medical information should focus on maximizing educational delivery within shorter video formats to align with TikTok's engagement patterns. This should be accomplished while keeping the quality and reliability of videos in mind, as many people are now using platforms like TikTok to access important medical information.

While this analysis provides insight into the engagement of viewers with TikTok videos about RA, it did not account for the date that the video was posted. Additionally, the initial search for TikTok videos was "rheumatoid arthritis" rather than "rheumatoid arthritis treatment". This, more general, search may have limited the use of the DISCERN criteria. To best use the DISCERN criteria for this analysis, the total DISCERN score was analyzed in terms of its reliability and treatment components. Thus, further studies can be done to assess the information that is posted regarding RA treatment or other chronic conditions.

CONCLUSION

In conclusion, this study's assessment of TikTok videos about rheumatoid arthritis shows that physicians provided the most accurate and reliable content based on DISCERN criteria. The widely ranging reliability scores highlight the importance of verifying the source of information. While TikTok is a valuable platform for individuals around the world to share experiences, it can also spread misinformation and should not serve as a primary source for health information. This study found no significant differences in engagement based on content creator type or video purpose, suggesting that other factors, such as personal relevance, influence interest. Additionally, medical influencers face the challenge of balancing brevity and accuracy, as longer videos tend to demonstrate higher reliability scores. Ultimately, TikTok remains a widely used social media channel but should be approached with caution and always supplemented with evidence-based guidelines when learning about rheumatoid arthritis.

DECLARATION OF CONFLICT OF INTEREST

The authors do NOT have any potential conflicts of interest for this manuscript.

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DECLARATION OF ETHICAL APPROVAL FOR STUDY

This study does NOT require ethical approval.

DECLARATION OF INFORMED CONSENT

There is no information (names, initials, hospital identification numbers, or photographs) in the submitted manuscript that can be used to identify patients.

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