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## Exploring TikTok's influence on surgical patient education

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## ARTICLE INFO

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## ABSTRACT

Handling editor: D.G. Healy Introduction: Social media platforms, especially rapidly growing ones like TikTok, are increasingly used to disseminate health information. Its interactive features promote user participation, allowing for the sharing of experiences and raising awareness about specific medical conditions, while also simplifying complex procedures. This study aimed to explore the possible influence of TikTok short-video application on the education of surgical Social media in healthcare patients. Surgical education Methods: A systematic search was performed in compliance with the PRISMA checklist. The research protocol was Patient education registered with the PROSPERO register (CRD42024551646). A search was performed in the PubMed and Sci-Public health awareness enceDirect databases from inception to 2024. The search terms used were "TikTok AND Surgery," "TikTok AND Misinformation in healthcare Surgical Education," and "TikTok AND surgery AND patient." Surgeon-patient communication Results: The present systematic search resulted in 697 citations, of which 50 relevant citations were included. The search revealed that TikTok has widely used among patients from different surgical specialties and has an influence on their education. The platform facilitates public health awareness, allowing surgeons to share educational content, including surgical techniques and patient-oriented information. Conclusion: As one of the rapidly growing social media platforms, TikTok is increasingly utilised to disseminate health information. It has been adopted across various surgical specialties. While the platform presents a great

opportunity to improve the education of surgical patients, it presents challenges related to the accuracy of information, potential misinformation, and lack of regulation. Surgeons and healthcare professionals should actively participate in creating accurate, evidence-based content that enhances patient education and promotes public health awareness.

## 1. Introduction

The rise of short-form mobile video content on platforms is one of the most significant trends in the world of online video, with millions of users worldwide. While these short-form video applications are used for entertainment, they can offer educational contents for patients and healthcare professions. These videos provide a convenient, accessible way to share important health information, ranging from medical tutorials to simple tips, making complex medical topics sometimes more understandable and engaging [1].

Social media platforms, especially rapidly growing ones like TikTok, are increasingly used to disseminate health information especially as the healthcare community shifts online, patients increasingly rely on the Internet for health-related information [1]. While these platforms offer significant potential for health education, challenges remain, including the lack of peer review, limited supervision, and the prevalence of

misinformation [1,2]. Given that video-sharing platforms prioritise entertainment, medical content must be carefully assessed for quality. Promoting expert-driven content is essential to ensuring that patients receive accurate and reliable health information [3].

TikTok has emerged as a powerful platform for public health and medical information dissemination, with over 6 billion lifetime downloads. By using short, engaging videos, it reaches a wide audience with diverse content [4]. Particularly popular among younger users, TikTok enables content creation, editing, and sharing, making it a valuable tool for patient education [5]. With over a billion active users, TikTok has highlighted the growing role of social media in healthcare, especially during the COVID-19 pandemic, where it both supported vulnerable groups and contributed to the spread of misinformation. [2,3].

This study aimed to explore the possible influence of TikTok shortvideo application on the education of surgical patients.

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### 2. Methods

### 2.1. Data search

A systematic search was performed in compliance with The PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) checklist [6]. The research protocol was registered with PROSPERO register for systematic reviews (CRD42024551646).

Search was performed in PubMed and ScienceDirect databases from inception to February 2024. The search terms used were "TikTok AND Surgery" and "TikTok AND Surgical Education" and "TikTok AND surgery AND patient".

#### 2.2. Inclusion and exclusion criteria

We included citations about the education of surgical patients with focus on the use of TikTok application. We excluded reviews, conference abstracts, semi-structured interviews, commentaries, letters to the editor, and studies on TikTok's use in non-surgical specialties or other short-form video apps. Additionally, we excluded articles that did not specifically examine TikTok's role in educating surgical patients. Articles in languages other than English were also excluded.

A detailed literature search was conducted by screening titles, abstracts, and reading the full text of the relevant papers. The revealed citations were assessed against pre-determined inclusion and exclusion criteria, with full-text reviews performed to evaluate quality and minimise the risk of bias. However, risk of bias among studies was not specifically examined due to the aims and nature of this study.

## 2.3. Analysis

Data were extracted and analysed using Excel 2021 (Microsoft Corporation, Redmond, CA, USA). Information collected for each citation included citations description (title, authors, year of publication, Journal) surgical specialty, aims and main findings.

## 3. Results

#### 3.1. Citation selection and characteristics

The present systematic search resulted in 697 citations (PubMed 160 and ScienceDirect 537) out of which relevant citations were extracted after assessing their titles and abstracts (Fig. 1). The inclusion and exclusion criteria were applied and duplicated citations were excluded. A final list of 50 citations were included in this study [7–10], [10-20], [21-30], [31-40], [41-50], [51-56].

Tabular analysis of included citations including aims and findings, the sample size of the included studies and specialties are presented in Table 1.



Fig. 1. PRISMA flow diagram of the systematic search.

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## Table 1

Tabular analysis of included citations.

First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings
Om et al. [7]	Aesthetic Surgery Journal	200 videos	Plastic and cosmetic surgery	To analyse the source and quality of certain cosmetic procedure videos on TikTok.	There is possibility of patient misinformation on social media. It is important to encourage medical providers to be involved in creating quality information and educate patients about misinformation to best support health literacy.
Rossi et al. [8]	American Journal of Otolaryngology	1798 public social posts	Otolaryngology	To identify who is primary posting sinus surgery content, the types of posts shared, the overall portrayal of sinus surgery, and to compare content across various social media platforms.	Patients mostly posted during the perioperative or postoperative periods, while physicians shared intraoperative educational posts. The lowest number of posts was found on TikTok compared to Instagram and Facebook.
Chiang et al. [9]	Journal of Pediatric Orthopaedics	256 physicians and health care practitioners answered the survey	Orthopaedic surgery	To analyse current social media usage, trends in Instagram and TikTok content posted, and perceptions of social media among pediatric orthopaedic surgeons.	TikTok and Twitter had negative perceptions with TikTok's content receiving the least favourable feedback. Perceptions vary across different social media platforms and physicians may need to update their usage strategies accordingly to improve patient education
O'Sullivan et al. [10]	Journal of Pediatric Urology	27 videos	Urology	To assess the accuracy of information shared on TikTok about common pediatric urological conditions against current guidelines from the European Association of Urology (EAU).	Only 22.2 % of assessed TikTok videos contain information aligned with EAU guidelines. Misinformation lacking scientific evidence on TikTok are reported which poses challenge for non-medical individuals verifying and trusting social media posts.
Song et al. [11]	Plastic and Reconstructive Surgery. Global open.	55 TikTok videos	Plastic and Reconstructive Surgery	To evaluate the quality and reliability of YouTube and TikTok videos related to gender- affirming surgery.	Videos from healthcare professionals and academic institutions were the most reliable in quality, while those from patients were the least reliable. Healthcare professionals, particularly plastic surgeons, should produce high-quality social media videos to educate transgender patients which can enhance knowledge, influencing health behaviours, promoting evidence-based medicine, and easing real-time patient anxiety.
Cheng et al. [12]	Ophthalmic Plastic and Reconstructive Surgery	386 videos	Ophthalmology	To analyse source and quality of Oculoplastic-related content on TikTok.	Physician-created content showed significantly better understandability and actionability. Physicians are crucial in sharing evidence-based medicine on social media.
Basch et al. [13]	JMIR Cancer	100 videos	Breast surgery	To focus on describing TikTok videos under the hashtag #breastcancer, assessing content related to breast cancer support, coping, cancer education, and raising awareness about early detection, prevention, and treatment of breast cancer.	Using videos to depict health journeys can engage patients, family, and loved ones seeking information on challenging conditions. Professional societies and advocacy groups focusing on breast cancer can leverage TikTok's popularity among young women, integrating study findings to enhance their campaigns
McBriar et al. [14]	World Neurosurgery	100 videos	Neurosurgery	To characterise the qualities of popular TikTok videos related to neurosurgery, or assessed biases in the content of these videos.	Entertainment videos are more popular on TikTok, while neurosurgical lifestyle content shows lower popularity and higher bias overall. Viewers should prioritise trusted sources like universities and scientific societies for accurate neurosurgical information.
Gussner et al. [15]	Journal of Pediatric Orthopaedics	The top 3 related hashtags had over 4 million total views, with 3.9 million, 17,000, and 5989 collective views	Pediatric Orthopaedic surgery	To analyse social media content on Osteochondritis dissecans to measure the reach of information shared and themes of discussion surrounding this condition.	Social media offers a supportive community for sharing and receiving advice, but the quality of information shared in these groups is a concern. Physician engagement and awareness on social media can enhance the accuracy of information available to

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patients.

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First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings
Gussner et al. [16]	Journal of the Pediatric Orthopaedic Society of North America	Evaluated the top 4 hashtags with a total of over 64 million views	Pediatric Orthopaedic surgery	To investigate the content related to pediatric Anterior cruciate ligament injury (ACL) tears across various social media platforms including Facebook, Instagram, YouTube, and TikTok.	Communities on social media platforms offer support and shared experiences for paediatric ACL injury patients, but lack physician oversight and medical information validation. Physicians should engage on social media to provide accurate medical information and support informed decision-making for paediatric ACL
Chen et al. [17]	Frontiers of Public Health	62 videos on TikTok	General surgery	To evaluate and compare the quality of anal fissure-related videos on TikTok and YouTube.	injury patients and their caregivers. YouTube offers more diverse and higher-quality anal fissure videos than TikTok, but both platforms still require improvements in video quality. Improved collaboration between health professionals and social media can enhance anal fissure education, helping timely patient awareness and treatment-seeking behaviours.
Hu et al. [18]	BMC Public Health	240 videos	Gastrointestinal Surgery	To evaluate the quality, accuracy, and completeness of videos for gastric cancer on TikTok and Douyin.	TikTok's potential for health education is hindered by short, insufficiently informative videos and challenges in verifying source credibility, despite its broad reach. TikTok in English and Japanese may not fully meet public needs for gastric cancer information
Sun et al. [19]	Journal of Medical Internet Research	100 gallstone-related videos	Hepatobiliary and Pancreatic Surgery	To analyse sources, content, and features of gallstone disease videos on TikTok, evaluating factors influencing video quality	Most TikTok videos about gallstones, despite being created by doctors, are of low quality in terms of content. Longer videos correlated positively with quality but received less attention, while popular videos tended to be lower in quality.
Lahooti et al. [20]	Obesity Surgery	150 videos	General surgery and Gastroenterology	To determine the quality of videos regarding weight loss procedures.	Assessing TikTok's impact as a medical information tool reveals poor quality in weight loss procedure videos, with higher popularity correlating with lower quality. Physicians must critically evaluate social media content and create videos to ensure accurate information on weight loss procedures reaches patients effectively.
Knoedler et al. [21]	The Journal of Craniofacial Surgery	3565 posts on TikTok	Plastic surgery	To study the growth of facial palsy information on social media platforms and factors influencing user engagement with content.	TikTok experienced substantial growth in likes, comments, shares, and reaches, with a steep upward trend in user interactions. Engagement rates for Facial Palsy Awareness Week 2021 were highest on TikTok. Compared to other SoMe, Instagram contains more evidence- based content
Bharat et al. [22]	Cureus	126 patients and analysed the 20 most-liked videos	Otolaryngology	To asssess outpatient visit and tonsillectomy rates for tonsil stones at our institution and analyse related TikTok videos.	TikTok's popularity may influence patient decisions and treatment patterns for tonsil stones, as evidenced by a rise in related videos and an increase in patients seeking tonsillectomy and pre-visit remedies at our institution. TikTok videos on tonsil stones are popular and may influence patient awareness and treatment decisions, highlighting the need for practitioners to stay informed about social media trends
Long et al. [23]	Plastic and Reconstructive Surgery	top 376 trending videos on	Plastic Surgery	To analyse trending plastic surgery videos and the dynamics of the #PlasticSurgery conversation on TikTok.	affecting patient behaviour. Educational plastic surgery videos by board-certified surgeons perform exceptionally well on TikTok. TikTok offers plastic surgeons a platform to educate patients about procedures and showcase as board certified surgeons.

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First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings
Bethell et al. [24]	JAAOS Global Research & Reviews	109 videos	Orthopaedic Surgery	To evaluate the quality, reliability, and educational value of TikTok videos on shoulder instability exercises.	Despite slightly better video quality from healthcare professionals, the overall educational value on TikTok is poor. Healthcare providers should acknowledge the widespread distribution and numerous videos on TikTok while also raising awareness about its limitations as a source for
Wang et al. [25]	Journal of Plastic, Reconstructive and Aesthetic Surgery: JPRAS	429 videos	Plastic Surgery	To evaluate the effect of TikTok on the transgender population, which may be more likely to seek information from non-traditional sources because of high medical mistrust.	educational medical information. Most TikTok content was created by patients themselves. Non-physician content creators receiving more likes and comments than physicians; however, physician-created educational videos were rated more reliable. Non-physician creators tend to provide lower-quality information, highlighting the importance of physicians consistently contributing high-quality content on TikTok to overcome the dangers of
Firmalinoet al. [26]	Journal of Oral and Maxillofacial Surgery	426 videos	Oral and Maxillofacial Surgery	To assess the prevalence and popularity of oral and maxillofacial surgery content on social media platforms, evaluate its usefulness, and compare video quality among different content producers.	misinformation on social media. Laypersons, who mostly create anecdotal content, have a greater presence, while health professionals, who are more popular based on likes, tend to create more educational videos. Health professional videos were more popular, indicating space for more informative content
Ziltzer et al. [27]	Facial Plastic surgery and aesthetic medicine	100 videos	Plastic surgery	To assess the quality of facial feminization surgery (FFS) content on TikTok and YouTube.	TikTok content primarily came from patients and focused on sharing personal experiences, whereas YouTube content was more often educational and produced by physicians. TikTok videos on FFS are less reliable and actionable than YouTube videos but attract higher viewership, highlighting a need for more educational and reliable content in this area
Kim et al. [28]	Laryngoscope Investigative Otolaryngology	228 videos	Otolaryngology- Head & Neck Surgery	To evaluate the quality of thyroidectomy-related posts on TikTok, the fastest-growing social media platform worldwide.	TikTok posts on thyroidectomy are poor in quality and reliability but vary based on authorship, subject type, and video characteristics. TikTok's popularity could influence patient perceptions of thyroidectomy, offering an educational opportunity.
Olsson et al. [29]	Laryngoscope Investigative Otolaryngology	47 accounts	Otolaryngology	To analyse the quality and quantity of otolaryngology- related TikTok content.	TikTok's otolaryngology-related content, primarily from English- speaking users in the US, focusing on facial plastics and reconstruction, with educational content often mixed with advertising. Otolaryngology- related TikTok accounts gained followers steadily throughout the study, highlighting their growing audience and educational potential. This underscores the need for scrutiny of content accuracy and its impact.
Subramanian et al. [30]	Neurospine	150 videos	Spine Surgery	To assess the quality of spine surgery content TikTok from providers and patients.	#Spinalfusion videos had higher engagement and likes compared to #spinaldecompression and #scoliosissurgery. #Spinaldecompression scored highest in educational quality, likely due to more Musculoskeletal professional involvement. Spine surgery videos on TikTok lack quality; musculoskeletal providers should contribute high-quality content to shape public information consumption.

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First author	Journal	Sample size (No. of videos/	Speciality	Aims	Summary of findings
		posts/participants)			
Kolade et al. [31]	Cureus	120 posts	Orthopaedic surgery	To evaluate the accuracy and popularity of content on common orthopaedic pathology on TikTok and Instagram.	The study revealed poor information quality on these platforms, with physician-created posts proving to be more reliable and accurate. Experts must disseminate correct information to educate patients about orthopedic conditions and help manage their expectations.
Freiberger et al. [32]	Arthroscopy, Sports Medicine, and Rehabilitation	159 patient responses	Orthopaedic Surgery (Sports Medicine)	To identify which sports medicine patients are most influenced by healthcare providers on social media, and to determine their preferences regarding social media platforms and content.	TikTok was the least popular social media platform among survey participants, with significantly fewer users compared to Facebook, YouTube, and Instagram. Patients expressed a high level of interest in both educational videos and medical facts on TikTok along with Facebook and Instagram. Sports medicine patients especially elderly prefer educational videos and medical facts from surgeons.
Rossi et al. [33]	Otology & Neurotology	542 posts on TikTok	Otolaryngology	To analyse authors posting about cochlear implants (CIs) on Instagram and TikTok, depict post content, and identify factors to improve patient education by surgeons.	Most posts about CIs on Instagram and TikTok were authored by patients and companies. Educational content was limited, with patients and their families being the primary creators. Potential for misinformation due to lack of regulation. Otolaryngologists can promote CI use and provide accurate educational information on social media
Anastasio et al. [34]	Foot & Ankle Orthopaedics	100 videos	Orthopaedic surgery	To assess the quality and educational benefits of ankle sprain-related TikTok videos.	General users had a higher proportion of "very poor" quality videos compared to health care professionals. Videos lacked detailed exercise descriptions, safety considerations, and proper citations. Younger users show higher competency in using social media for health information. TikTok content on ankle sprain related is poor in quality and requires the need for better information from health care professionals on social media.
Tabarestani et al. [35]	Foot and Ankle Surgery	100 videos	Orthopaedic Surgery	To assess the quality and educational benefits of Achilles tendinopathy-related TikTok videos.	Healthcare professionals uploaded slightly more videos than general users but had a higher proportion rated as "very poor" and fewer rated as "fair." TikTok's Achilles tendinopathy exercise videos were of poor educational quality, indicating a need for healthcare professionals to be cautious about the platform's low- quality information. Lack of direct social media intervention from health professionals can lead to improper exercise execution and potential iniury.
Zheng et al. [36]	Journal of Medical Internet Research	200 videos	Hepatobiliary and Pancreatic Surgery	To assess the quality of the information in Chinese short videos on liver cancer shared on the TikTok and Bilibili short video-sharing platforms.	Healthcare professional's videos on Bilibili and TikTok provide and can be considered as reliable, quality content on liver cancer amidst generally poor quality of health information videos overall. Viewers should critically assess the scientific reliability of medical information in short videos on TikTok and Bilibili before making healthcare decisions
Yang et al. [37]	Endocrine	100 videos	General Surgery	To evaluate the quality of thyroid cancer-related videos on TikTok.	Most videos were by surgeons, followed by traditional Chinese medicine and nuclear medicine physicians; the latter had lower engagement, shorter videos with

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First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings
Kini et al. [38]	The Laryngoscope	361 patients	Otolaryngology	To determine factors associated	exaggerated titles, and lacked depth. TikTok lacks adequate, high-quality thyroid cancer information, highlighting the need for improved educational content on short-video platforms. Patients use social media beyond
				with social media usage for finding a doctor or seeking medical advice among otolaryngology patients.	socialising to engage in medical care. Female gender and daily use of social media, particularly Facebook, correlated with awareness of using social media for medical advice; Instagram and TikTok also showed potential associations.
Kanner et al. [39]	Urology practice	136 TikTok videos	Urology	To assess the quality, understandability, actionability, and diversity of speakers in videos on TikTok and YouTube regarding overactive bladder.	TikTok and YouTube videos on overactive bladder were generally low in actionability, understandability, and quality. TikTok videos have more views and likes on average than YouTube but TikTok has lower scoring in quality & actionability overall compared to YouTube
Feng et al. [40]	Cureus	95 videos	Otolaryngology	To explore and analysis of content pertaining to cochlear implantation on a popular social media platform.	Videos predominantly featured CI users or their families sharing patient experiences, with limited quality and reliability.
Du et al. [41]	Helicobacter	93 TikTok videos	General surgery and Gastroenterology	To assess and compare the content and quality of H. pylori- related videos on TikTok and Bilibili.	TikTok featured more health professional-produced videos and better engagement metrics despite shorter video lengths, while Bilibili had more for-profit content and longer videos. H. pylori videos on both TikTok and Bilibili often covered topics like transmission and eradication but generally scored poorly in content and quality, suggesting improvements for accuracy and reliability.
Hong et al. [42]	Cureus	100 TikTok videos	Orthopaedic Surgery	To assess knee osteoarthritis content on TikTok by identifying the creators behind this content and examining the connection between the reach of the videos and the strength of the medical recommendations provided.	Most knee osteoarthritis TikTok videos are uploaded by medical professionals. TikTok often features unreliable knee osteoarthritis treatment information, frequently from non-physicians, with medical treatments lacking strong supporting evidence.
Wada et al. [43]	International Journal of Urology	300 people who or whose families were visiting the urological department regularly	Urology	To survey the utilization of social media (SoMe) in patients with urological disease and their families.	TikTok had the lowest user rate, with minimal account holders and was not a major or preferred platform for accessing medical content compared to YouTube or Twitter. Knowing who uses different social media platforms helps medical professionals and societies share information more effectively with patients and families with urological diseases.
Li et al.[44]	JGH Open: An Open Access Journal of Gastroenterology and Hepatology	78 Chinese, 38 English, and 25 Japanese videos	Gastrointestinal Surgery	To assess the quality and content of videos on Douyin and TikTok for their educational role on early screening of rectal cancer.	Chinese Douyin videos outperform English and Japanese TikTok videos in quality and content scores, identifying potential for enhancing their overall anneal of Chinese videos
Bethell et al. [45]	Orthopaedic Journal of Sports Medicine	111 videos	Orthopaedic Surgery	To analyse the quality, reliability, and educational value of TikTok videos among the patient population for ACL injury	There was no significant quality differences observed between videos posted by healthcare professionals and the general public. TikTok's ACL rehabilitation exercise videos have very low educational value, highlighting the platform's limitations for medical education, which healthcare professionals

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should address.

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Table 1 (continued)

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First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings
Siegal et al. [46]	Urology	36 videos	Urology	To evaluate the quality of varicoccele information on TikTok, a popular video platform that adolescent patients are now turning to as a source of medical information before visiting a doctor.	The quality of varicocele-related information on TikTok is generally poor, with healthcare professionals providing slightly better quality but still falling short of patient needs. Collaboration between urologists and platforms like TikTok is crucial by verifying medical content and linking to reliable sources to ensure accurate
AlFraih et al. [47]	Journal of Pediatric Surgery	227 responses from parents attending outpatient clinic appointments	Paediatric surgery	Aims to assess family utilization of social media for information on their child's paediatric surgical condition and to explore their perceptions of social media's role in paediatric surgery.	and rooust medical content for users. Only some parents used TikTok for information about their child's medical conditions and for seeking surgical information, in addition to more popular platforms like Twitter, Snapchat and others. Paediatric surgeons should create an online presence to educate and inform parents
Rossi et al. [48]	International Journal of pediatric Otorhinolaryngology.	1482 in total (TikTok = 682) relevant social media posts related to tonsillectomies were analysed across major platforms, including TikTok, Instagram, and Facebook	Otolaryngology	To assess the influence of social media platforms, including TikTok, Instagram, and Facebook, in shaping public perceptions about tonsillectomies and to identify the nature of the content disseminated on these platforms.	Patients, primarily contributing to social media discussions about tonsillectomies, focused on lifestyle- oriented content and personal experiences, with TikTok showing the highest engagement due to its popular video format with limited educational content. Clinicians can improve patient support by disproving myths, tackling online anecdotes and offering empathetic insights through digital health communication.
Chenet al. [49]	Journal of Orthopaedic Surgery	95 videos	Orthopaedic surgery	To evaluate the quality of online information of osteosarcoma on current video-sharing platforms in mainland China.	Videos created by certified doctors and orthopaedic surgeons, focusing on introductions, professional knowledge, treatment, and surgical techniques. TikTok osteosarcoma videos lacked professionalism for medical education but could enhance public awareness. More orthopaedic surgeon involvement and better video regulation are needed
Juliebø-Jones et al. [50]	Frontiers in Surgery	100 videos	Urology	To perform an evaluation of patient experiences and perceptions regarding kidney stone surgery on the social media platform TikTok.	TikTok shows high engagement on kidney stone surgery, with many negative videos highlighting stent symptoms and complications, potentially misinforming viewers about their severity.
D'Ambrosi et al. [51]	Orthopaedic Journal of Sports Medicine	100 videos	Orthopaedics surgery	To assess the validity and informational value of TikTok videos with regard to the ACL.	Most videos focused on patient experiences, physical therapy, injury mechanisms, anatomy, clinical tests, and surgical techniques, with generally poor-quality ratings. TikTok's impact on social media is significant, but its educational ACL videos are lacking, requiring further research.
Kini et al. [52]	European Archives of Oto- Rhino-Laryngology	372 otolaryngology patients	Otolaryngology	To determine concerns of otolaryngology patients regarding health-related social media usage.	Younger patients are more comfortable using social media, while older patients, have greater reliability, privacy concerns and misinformation risks. Otolaryngologists can improve patient care by addressing social media concerns and offering better guidance on its use.
Alter et al. [53]	Journal of Voice	146 videos	Otolaryngology- Head and Neck Surgery	To assess the quality, reliability, and accuracy of vocal health content on TikTok.	Overall TikTok videos lack quality, reliability, and accuracy. Health professional-created content showed better reliability and accuracy. Popularity on TikTok often doesn't

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align with content quality, reliability, or accuracy, potentially leading users

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Table 1 (continued)						
First author	Journal	Sample size (No. of videos/ posts/participants)	Speciality	Aims	Summary of findings	
Liu et al. [54]	Frontiers in Public Health	200 videos included, 100 from TikTok	Breast and Thyroid Surgery	To evaluate the quality of the information of breast cancer- related videos on TikTok and	to engage more with lower-quality information, highlighting the need for reliable healthcare information from trusted professionals on social media to counteract misinformation. Breast cancer videos on TikTok and Bilibili lack quality, but those by medical practitioners are more	
				Bilibili video sharing platforms and factors related to video quality.	reliable, highlighting disparities in content quality. Medical practitioners should create better videos, and platforms must regulate health content to ensure reliable public health information.	
Morse et al. [55]	Otolaryngology – Head and Neck Surgery	Top 25 patient-facing posts, 273 from TikTok	Otolaryngology	To assess the readability of patient-facing educational information about the most common otolaryngology diagnoses on popular social media platforms.	Posts by medical professionals were less readable than those by laypeople, with TikTok images being more readable compared to other platforms; thus, laypeople's posts, despite potentially less accurate information, were generally more understandable. Improved readability in educational posts by healthcare providers crucial for effective patient education	
Haddad et al. [56]	Journal of Ophthalmology	100 videos	Ophthalmology	To analyse the top 100 videos related to LASIK on TikTok and to study the type of video, its creator's credentials, the content, the quality, and the reach	Most TikTok videos about LASIK are educational but of generally poor quality, with only a small proportion produced by healthcare professionals. Higher quality videos, typically longer and more engaging, received more views and interactions from viewers. To counteract misinformation and low-quality content, ophthalmologists are encouraged to create more informative videos	

## 3.1.1. Results of individual studies

TikTok has become a valuable platform for educational outreach and community engagement, hence it is widely used across various surgical specialties. TikTok promotes public health awareness by enabling surgeons to share informative videos that highlight surgical techniques and provide education to the surgical patients.

In general surgery, Chen et al. evaluated and compared the quality of anal fissure-related videos and concluded that improved collaboration between health professionals and social media can enhance anal fissure education, helping timely patient awareness and treatment-seeking behaviours [17]. Hu et al. evaluated that TikTok's health education potential is limited by short, uninformative videos and challenges in verifying credibility, particularly for gastric cancer information in English and Japanese, underscoring the need for caution and collaboration with health professionals and institutions to promote evidence-based resources [18]. Lahooti et al. analysis revealed TikTok videos on weight loss procedures are predominantly created by non-physicians and exhibit low quality, with higher popularity associated with poorer content quality, emphasising the need for improved patient education resources [20].

In Plastic surgery, Knoedler et al. determined that TikTok and Instagram are powerful platforms for raising awareness about facial palsy, and plastic surgeons should actively use social media to share evidence-based information, post reels, and engage with audiences to enhance public understanding [21]. Long et al. found that TikTok serves as an effective platform for board-certified plastic surgeons to educate the public, enhance patient safety, and combat misinformation about plastic surgery, ultimately creating a more informed patient community [23].

In Orthopaedics, Kolade et al. highlighted the poor quality of

orthopaedic content on social media including TikTok, underscoring the importance of increasing the presence of orthopaedic surgeons on social media to deliver accurate information, educate patients about their conditions, and help manage their expectations [31]. The orthopaedic surgery community is lagging behind other medical specialties in addressing the issue of inaccurate content on social media and in creating high-quality, accessible resources [34].

In Urology, videos on regarding overactive bladder generally lack sufficient quality, understandability, and actionability for effective health decision-making. Increasing diversity and representation in health-related videos is essential for ensuring equitable access to information and encouraging a broader patient base to seek care [39]. TikTok shows high engagement on kidney stone surgery, highlighting stent symptoms and complications [50]. Misinformation lacking scientific evidence on TikTok are reported which poses challenge for non-medical individuals verifying and trusting social media posts [10].

In Paediatric surgery, concluded that social media, including TikTok, is an essential resource for parents seeking information about their child's medical conditions [47]. However, TikTok usage remains low compared to more popular platforms such as Twitter, Snapchat, and Instagram. There is a need for paediatric surgeons to establish an online presence and utilise digital tools, such as QR codes and links to social media posts, to provide comprehensive information to parents [47].

In ophthalmology, Haddad et al. emphasised the urgent need for ophthalmologists to actively engage on TikTok to counter misinformation about LASIK, as current videos on the platform often present lowquality content and negative patient experiences regarding the risks and complications of the procedure [56]. Oculoplastic content created by physicians is more understandable and actionable, though videos from oculoplastic surgeons have less visibility [12]. Regardless of the

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type of surgical content type, videos created by physicians tend to offer more accurate, thorough, and understandable information for patients, though they often receive less visibility than those made by nonmedical creators. Targeted educational content based on patient preferences should be created, as patients find physicians and surgeons more credible and are more likely to engage when they see informative posts, including live questions and answers [32,41].

In endocrine surgery, TikTok lacks adequate, high-quality thyroid cancer information, highlighting the need for improved educational content on short-video platforms [37]. Thyroidectomy patients are active contributors on TikTok, sharing valuable insights on their procedures and long-term effects, which helps spread important knowledge and support, highlighting the positive role of TikTok in health education [28].

#### 4. Discussion

This study highlighted the potential role of TikTok in enhancing patient education. Various studies indicated that the platform fills gaps in healthcare communication, offering quick and accessible information that encourages patient involvement in their health care. With substantial user engagement across all ages, TikTok's extensive reach makes it a powerful tool for sharing health-related content. However, the spread of misinformation presents challenges to its educational potential. As some of the educational content is generated by patients sharing personal experiences, with limited educational content available [25,30, 48].

TikTok is primarily dominated by patient-generated content, with physicians contributing educational intraoperative videos, while patients create the majority of postoperative content. The platform receives the highest number of likes per post for patient-generated content [8]. TikTok is particularly popular among teenagers and young adults [51]. Understanding the demographics of social media users is crucial for medical professionals and organisations to effectively deliver appropriate medical information on these platforms [43]. While the internet has made health information more accessible, adolescents and young adults often face challenges with health literacy, which can negatively impact their health outcomes. Despite this, these younger users are adept at using platforms like TikTok to seek information, underscoring the complexities of health literacy in the digital age and the influence of social media [24].

TikTok has limitations in health communication, such as its short video format, which makes it challenging to provide detailed citations or professional feedback. The platform's negative impact on healthcare education is noted, stemming from poor content quality, lack of oversight, and inadequate citation of sources. The short video format limits the ability to engage in comprehensive discussions, making TikTok less reliable for health education. High-quality health education videos should prioritise reliability, while balancing informative content and viewer engagement within the constraints of the platform's short time frame. [10,24,44].

The reliability of health-related content on platforms like TikTok varies, with professional videos generally being more reliable than those created by non-medical users [36]. Social media significantly influence patient's decisions regarding surgery and choice of medical provider, as they seek and share first-hand experiences of surgical management [50]. While physician-created content can provide accurate, comprehensive education, surgical procedures and care, benefiting patient understanding and management [31]. It was also noted that cosmetic surgery videos on TikTok are often of low educational quality, particularly those made by non-medical creators, underscoring the need for medical professionals to produce more accurate content [7].

On the other hand, TikTok offers superior understandability and viewer engagement, highlighting its potential as a valuable platform for physicians to share accessible, evidence-based health information [27]. It enables healthcare professionals to reach a broad audience, making

health information accessible to diverse populations [10]. Its interactive features promote user participation, allowing for the sharing of experiences and community support on health topics [27]. The platform effectively raises awareness about specific medical conditions and simplifies complex procedures, helping to reduce anxiety and misconceptions among potential patients while offering social support to those in need [22]. Additionally, healthcare providers can effectively engage and educate their audience by using creative formats with visual aids, posting regularly, incorporating relevant hashtags, and actively interacting with the viewers [25].

One of the limitations of this study is the risk of publication bias, as studies with positive outcomes are more likely to be published than those with negative or inconclusive results. Different studies may use various metrics for evaluating video quality, engagement, and educational impact, which can lead to inconsistencies in the overall assessment. While our study employed a focused and rigorous evaluation within predefined criteria, the limited sample size may affect the generalisability of our findings. Given the platform's dynamic and largescale nature, future research with broader datasets and larger sample sizes is necessary to provide a more comprehensive understanding of the social media role in the education of surgical patients.

TikTok's role in disseminating health information underscores the need for further research into viewer processing, as current findings are not generalisable to other platforms, and the authenticity of creators' claims remains unverifiable [13]. With advancements in technology, TikTok could use smart algorithms and artificial intelligence to deliver personalised content, making sure users get information that interests them while filtering out low-quality or misleading material. It was suggested that the medical community should enhance the readability of patient educational materials, particularly on social media, by the possible use of AI-assisted tools, following established guidelines for clear communication, and employing plain language and concise sentences to empower patients in their healthcare decisions [55].

## 5. Conclusion

As one of the rapidly growing social media platforms, TikTok is increasingly utilised to disseminate health information. It has been adopted across various surgical specialties. While the platform can be a great opportunity to improve the education of surgical patients, it also presents challenges related to the accuracy of information, potential misinformation, and lack of regulation. Surgeons and healthcare professionals should actively participate in creating accurate, evidencebased content which can enhance patient education and promoting public health awareness.

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## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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