

Integrating Social Media and Anterior Cruciate Ligament Surgery: An Analysis of Patient, Surgeon, and Hospital Use

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Purpose: The purpose of this observational study of social media in sports medicine was to investigate and analyze the presence and shared content of anterior cruciate ligament (ACL) patients, sports surgeons, and top orthopaedic hospitals on popular social media streams. **Methods:** A search of 2 public domains (Instagram and Twitter) was performed over a 6-month period. ACL surgery (“#aclsurgery”) was selected for the Instagram-based patient analysis after exclusion of veterinary ACL operations. A binary scoring system was used for media format, time (preoperatively or postoperatively), perioperative period (within 1 week of surgery), tone (positive or negative), return-to-work reference, return-to-play reference, rehabilitation reference, surgical-site reference, satisfaction reference, and dissatisfaction reference; perspective of the media was noted as well. A sample of 97 National Football League team surgeons was used for analysis of physician use in social media outlets and quantified by the number of posts. Hospital analysis categorized a sample of the top 50 orthopaedic hospitals by average number of posts and monthly posting rates with regard to orthopaedics, research, education, and personnel focus. **Results:** In the patient analysis, 3,145 public posts of human subjects were shared on Instagram. Of these, 92% were personal recovery stories, with an emphasis on postoperative photographs (93%) with a positive tone (88%) more than 1 week after surgery (73%). Posts focused on surgical site (25%), return to play (30%), and postoperative rehabilitation (37%). Of the physicians, 16% had Twitter accounts, with an average of 94 posts per surgeon; none had Instagram accounts. Of the hospitals, 96% had Twitter accounts and 32% had Instagram accounts. Most of the hospital-based Instagram content in the sample was centered on patients or celebrities. **Conclusions:** Orthopaedic surgery has a large social media presence. Patients emphasize wound appearance, the rehabilitation process, and return to play. Ninety-six percent of hospitals are represented in social media outlets, whereas physicians are relatively under-represented. **Clinical Relevance:** Social media offers a unique window into what truly matters to patients after surgery and may help us better manage expectations, enhance health care delivery, and improve marketing strategies.

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Social media is a relatively recent phenomenon that has changed the way people interact with the world.¹ Sophisticated platforms such as Facebook, Twitter, and Instagram have become powerful tools for dissemination of information instantaneously and to huge audiences.²⁻⁴ More than 77% of Fortune 500 organizations have teams dedicated to managing their social media footprint.⁴ In most business models, social media is not only well accepted but considered an instrumental resource for marketing and customer engagement.⁵⁻⁷

Social media in the context of orthopaedic surgery serves a timely and mutually beneficial role that satisfies the needs of stakeholders from hospitals and surgeons to the patients themselves.^{8,9} This is especially

important in fields that provide primarily elective procedures,⁹ given recent consolidation of health care markets and increased competition.¹⁰ People under age 35 years spend nearly 4 hours on social media every day.¹¹ Patients can send and receive real-time information to and from a broad-based audience that includes not only friends and family but others recovering from the same injury, as well as the surgeons and hospitals who provide such care.⁹ The advent of the hashtag (#) has permitted the vast quantity of media posts exchanged to be organized thematically and serves as a unique method of data scouring. Twitter data showed that health care had the largest boom of any industry, with a 132% growth in user tweets aimed at brand and service handles for customer service.¹¹

Although the advantages of social media are clear in most industries, broadly publicizing health care information raises concern especially as it pertains to privacy.^{9,12-15} Therefore, navigating social media within the confines of regulatory legislation, ethical boundaries, and professional standards remains relatively uncharted territory.¹²⁻¹⁵ Unlike other fields, orthopaedic surgery patients are uniquely visible (e.g., crutches, knee braces, or splints) and thus uniquely sharable through social media platforms. Social media is of growing importance and has the capability to be leveraged in an ever-changing health care ecosystem.

The purpose of this observational study of social media in sports medicine was to investigate and analyze the presence and shared content of anterior cruciate ligament (ACL) patients, sports surgeons, and top orthopaedic hospitals on popular social media streams. We hypothesized patients would primarily share media with a positive tone centered on rehabilitation and therapy after surgery; we also hypothesized the adoption of social media among surgeons would lag behind hospital organizations with teams dedicated to marketing and social media.

Methods

A search of the public domains of Instagram (San Francisco, CA) and Twitter (San Francisco, CA) was performed on October 11, 2015, to include posts occurring during the 6-month period from April 11 to October 10, 2015. A third-party application (Gramfeed, San Francisco, CA) was used to analyze the mobile-based Instagram database on a web-based platform. Searches were repeated with another third-party web application of Instagram (Iconosquare, Limoges, France) in an attempt to improve accuracy. The selection of the National Football League (NFL) Physicians Society over the National Basketball Association or other professional sports was arbitrary; the NFL Physicians Society data were readily available, up to date, and consolidated in one central site. All data analysis was performed using Microsoft Excel (Redmond, WA).

Patient Use of Instagram

Search. A search for posts on Instagram with “#acl-surgery” was performed using the Instagram database during the aforementioned 6-month period. Search terms associated with “#aclsurgery” and the count of their respective posts were noted. Results of the search were catalogued and analyzed by 3 separate reviewers (P.N.R., T.L., and E.F.). Inter-reviewer variability was resolved by means of original media review and discussion to achieve consensus. In the case of persistent disagreement, the post was excluded.

Inclusion and Exclusion Criteria. All posts with “#acl-surgery” that (1) related to ACL reconstruction surgery and (2) featured human subjects were included. All languages were accepted for analysis and translated using the in-app feature.

Analysis. The primary outcome variable studied was the content of the posts, analyzed using a binary scoring system: media format (photograph or video), time (preoperatively or postoperatively), perioperative period (within 1 week of surgery or <1 week before surgery or <1 week after surgery), tone (positive or negative), return-to-work (RTW) reference (presence or absence), return-to-play (RTP) reference (presence or absence), rehabilitation reference (presence or absence), surgical-site reference (presence or absence), satisfaction reference (presence or absence), and dissatisfaction reference (presence or absence). When each media post was assessed for satisfaction or dissatisfaction, the following inclusion criteria were applied: (1) explicit reference to the knee, (2) explicit reference to patient performance of sports activity or activities of daily living, and (3) explicitly positive (satisfaction) or negative (dissatisfaction) tone.¹⁶ The perspective (patient, family member or friend of patient, support group) of the media was noted as well. The secondary outcome variable was the total count and monthly rate for the included posts.

Physician Use of Instagram and Twitter

Search. The 97 orthopaedic surgeons from the NFL Physicians Society were sampled for analysis because of their relatively high profile. Each surgeon was cross-checked on Instagram and Twitter to determine if social media profiles had been created.

Inclusion and Exclusion Criteria. Of the surgeons with active Instagram and Twitter accounts, all were included for analysis. All posts from each surgeon account were included during the 6-month period without exception.

Analysis. The range and average of media from the available accounts for each social media platform were reported. All posts referencing ACL surgery were noted.

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