

RESEARCH ARTICLE

Brand Videos among Orthopedic Surgery Residency Programs

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Abstract

Objectives: The use of brand videos has provided residency programs with another platform to showcase themselves and attract potential applicants. Despite the rise in brand videos following the COVID-19 pandemic, not all orthopedic surgery residency programs have developed one. This study aimed to determine the prevalence of brand videos on orthopedic surgery residency program websites and evaluate their contents.

Methods: This was a cross-sectional analysis of all orthopedic surgery residencies participating in the National Resident Matching Program (NRMP) in November 2022. The presence of a brand video was reviewed on each program's website and data was collected from the contents of existing videos.

Results: Forty-seven percent (90/192) of programs had a brand video with an average length of 6 minutes and 13 seconds. The top two program qualities highlighted were a family friendly atmosphere with camaraderie (83%; 75/90) and early hands-on surgical experience (72%; 65/90). Despite brand videos being tailored to an audience of prospective residents, only 9% (8/90) of programs noted qualities they look for in prospective residents. Furthermore, only 19% (17/90) of programs displayed a closing slide containing contact information or links to social media accounts.

Conclusion: Only 47% of orthopedic surgery residency programs have established a brand video. The absence of a brand video may be due to programs not perceiving them as important, shortage of resources, or unfamiliarity with video marketing. Based on our findings, we propose recommendations to assist programs in their development of a brand video.

Level of evidence: IV

Keywords: Brand video, Orthopedic surgery residency, Residency video, Residency website

Introduction

There are 195 orthopedic surgery residency programs of which medical school applicants can apply to via the National Resident Matching Program (NRMP). Consequently, applicants spend a significant amount of time and resources gathering information about these programs.¹⁻⁵ Since the COVID-19 pandemic and subsequent restrictions on in-person medical student opportunities there has been an increased utilization of websites and social media platforms to portray a residency program's strengths. Majority of orthopedic surgery residency programs have a website

that can be accessed to obtain more detailed information. Furthermore, studies have shown that applicants heavily rely on these websites when selecting sub-internship rotations, interviews, and even program ranking.⁶⁻¹³

The term *brand*, defined by Kapferer, is a sign certifying the origin of a product or service and differentiating it from the competition.¹⁴ Branding is performed by all residency programs, whether it be intentional or not.⁶ A residency program's brand is not only made up by an outsider's perception of a program's uniqueness, but, also an amalgamation of individual concepts such as its reputation,

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curriculum, faculty, resources, and overall culture.¹⁵ A brand video allows for residency programs to communicate their resources, uniqueness, and culture to provide a more authentic portrayal of their program in a time where web-based platforms are heavily relied upon.⁶

Shatanofy et al. reported that orthopedic surgery residency programs were more likely to add a brand video to their website over a four-month period when the COVID-19 pandemic limited applicants to predominantly virtual experiences.¹⁶ Despite the recent rise in brand videos following the COVID-19 pandemic, not all orthopedic surgery residency programs have established a brand video. This may be due to programs not perceiving them as important, shortage of resources, or unfamiliarity with video marketing.

The purpose of our study was to determine the prevalence of brand videos found on orthopedic surgery residency program websites and to describe specific program factors associated with the presence of a brand video. Our secondary purpose was to assess the contents of existing brand videos as a means to assist programs in their development.

Materials and Methods

This was a cross-sectional analysis of all orthopedic surgery residencies participating in the NRMP in November 2022. A list of orthopedic surgery residency programs participating in the NRMP was obtained from the Electronic Residency Application Service (ERAS). All allopathic and osteopathic programs were included. Military programs were excluded, given the inherent differences in their recruitment processes.

Orthopedic surgery residency program websites were identified from the ERAS website, and a hyperlink to each program's website was collected. Programs without a functional hyperlink were identified via Google search for the program name or affiliation. Programs were included if they had a serviceable website open to the general public and excluded if they did not have a serviceable website open to the general public. Details of each program were recorded: geographic location (Northeast, Southeast, Midwest, Southwest, or West), type of community (Urban, Suburban, Rural), type of program (University-Based, Community-Based University Affiliated, or Community-Based), presence of majority allopathic versus osteopathic residents, and the numbers of residents in the program.

The orthopedic surgery residency program websites were then reviewed for the presence of a brand video. If a brand video was present, the contents were thoroughly analyzed for further data collection. General brand video data collected included the following: brand video platform (YouTube, Vimeo, Brightcove, Kaltura, Warpwire, Unknown), length of the brand video, presence of more than

one brand video, inclusion of hospital and facilities footage, use of background audio, description of aspired prospective resident qualities, and the presence of a closing slide containing contact information or social media links. Featured speakers (program director, faculty, residents and their respective year in training) and their attire worn were recorded. Additionally, gender of the featured residents were noted. Specific residency program qualities highlighted in each video were recorded and designated into one of the following categories: family friendly atmosphere and resident camaraderie, early hands-on surgical experience, radiograph interpretation skills, program curriculum, research, social life and hobbies, facilities covered, access to laboratory facilities (sawbones, cadavers, simulation arthroscopy, virtual reality), diversity, preparation for competitive fellowships, mentorship program, splinting and casting skills, sports team coverage, emphasis on female education, and program updates.

Descriptive statistics of the data were run to summarize the study data. All statistical analyses were performed using R Studio (Version 3.5.1, Vienna, Austria). To compare groups, chi-square tests were used for categorical data and independent samples t-tests were used for continuous data. If needed, Mann-Whitney U-tests were used for continuous variables that had non-normal distributions. Categorical variables were presented as counts and percentages. Continuous variables were presented as averages. Significance was set at $p < 0.05$.

Results

A total of 195 orthopedic surgery residency programs participating in the NRMP were identified from the ERAS database. Three programs were excluded from our study (2 military programs and 1 program with a private video) leaving 192 orthopedic surgery residency programs for inclusion in our dataset.

Brand Video Data

Forty-seven percent (90/192) of programs had a brand video. Amongst programs with a brand video, the Northeast/Southeast/Midwest regions had the highest percentage of programs with a brand video (27%; 24/90) while the Southwest had the lowest (9%; 8/90). Further breakdown by geographic location reveals Southeast programs had the highest percentage of programs with a brand video (59%; 24/41) while the Northeast programs had the lowest (42%; 24/57). Programs that were larger (average residents 24.7(10.7) vs. 20.1 (8.01); $p=0.002$), university-based ($p=0.032$), or allopathic ($p=0.034$) were more likely to have a brand video [Table 1].

Table 1. Breakdown of Orthopedic Residency Programs Demographics Categorized By The Presence Of A Brand Video

Percentage (#) of Programs With A Brand Video	46.9% (90/192)	53.1% (102/192)	
	Programs with Brand Video (n=90)	Programs without Brand Video (n=102)	P Value
Geographic Location			0.605
Northeast	24 (26.7%)	33 (32.4%)	
Southeast	24 (26.7%)	17 (16.7%)	

Table 1. Continued

<i>Midwest</i>	24 (26.7%)	29 (28.4%)	
<i>Southwest</i>	8 (8.89%)	10 (9.80%)	
<i>West</i>	10 (11.1%)	13 (12.7%)	
<i>Type of Community</i>			<i>0.702</i>
<i>Urban</i>	83 (92.2%)	90 (88.2%)	
<i>Suburban</i>	6 (6.67%)	10 (9.80%)	
<i>Rural</i>	1 (1.11%)	2 (1.96%)	
<i>Type of Program</i>			<i>0.032</i>
<i>University-Based</i>	56 (62.2%)	44 (43.1%)	
<i>Community-Based University</i> <i>Affiliated</i>	25 (27.8%)	41 (40.2%)	
<i>Community-Based</i>	9 (10.0%)	17 (16.7%)	
<i>Majority Allopathic or Osteopathic Residents</i>			<i>0.034</i>
<i>Allopathic (MD)</i>	78 (86.7%)	74 (72.5%)	
<i>Osteopathic (DO)</i>	12 (13.3%)	28 (27.5%)	
<i>Number of Residents in Program</i>	24.7 (10.7)	20.1 (8.01)	<i>0.002</i>

Majority (71%; 64/90) of programs utilized YouTube as the platform for their brand video [Table 2]. The average length of time of brand videos was 6 minutes and 13 seconds (range: 0:53 – 23:05). Of the programs with a brand video, 23% (21/90) had more than one brand video. The majority of brand videos included footage of the hospital and facilities (80%; 72/90) as well as background audio (92%; 83/90).

Despite brand videos being tailored to an audience of prospective residents, only 9% (8/90) of programs described qualities they look for in prospective residents. Only 19% (17/90) of programs displayed a closing slide containing contact information or links to social media accounts [Table 2].

Table 2. General Brand Video Data

Brand Video Platform	Percentage (#) of Programs (n = 90)
<i>YouTube</i>	71.1% (64)
<i>Vimeo</i>	11.1% (10)
<i>Brightcove</i>	4.44% (4)
<i>Kaltura</i>	1.11% (1)
<i>Warpwire</i>	1.11% (1)
<i>Unknown</i>	11.1% (10)
Average Length of Brand Video (Min:Sec)	6:13
Percentage (#) of Programs With More Than One Brand Video	23.3% (21)
Percentage (#) Of Programs With Footage Of The Hospital & Facilities In Brand Video	80.0 % (72)
Percentage (#) Of Programs With Background Audio In Brand Video	92.2% (83)
Percentage (#) Of Programs With A Closing Slide Containing Contact Information Or Links To Social Media Accounts In Brand Video	18.9% (17)
Percentage (#) Of Programs That Described Qualities And Attributes They Seek For In A Prospective Resident	8.89% (8)

Brand Video Featured Speakers

Seventy-four percent (67/90) of programs had a brand video involving their program director providing an overview of their program, and the most common attire worn by the program director was dress clothes without a white coat (n=33, 49.3%). Fifty-two percent (47/90) of

programs involved an additional faculty member who spoke on behalf of the program. The majority of program videos (84%, 76/90) included at least one resident describing their residency experience, and the most common attire worn by these residents was a mixture of scrubs or dress clothes paired with a white coat. The most common level resident

depicted was Post Graduate Level (PGY)-5. Sixty-one percent (55/90) of programs involved a female resident in their brand video. The average number of residents involved in a

brand video was four. Sixty-seven percent (60/90) of programs involved a group of residents [Table 3].

Table 3. Brand Video Featured Speakers

	Percentage (#) of Programs (n=90)
Program Director	74.4% (67)
Faculty Members	52.2% (47)
Isolated Resident	84.4% (76)
PGY-1	16.7% (15)
PGY-2	21.1% (19)
PGY-3	24.4% (22)
PGY-4	32.2% (29)
PGY-5	41.1% (37)
PGY Level Not Specified	43.3% (39)
Female Resident Featured in Brand Video	61.1% (55)
Average Number of Isolated Residents Talking	4
Group of Residents Interacting	66.7% (60)
Program Director Attire
Scrubs Only	8.96% (6)
Scrubs & White Coat	16.4% (11)
Dress Clothes Only	49.3% (33)
Dress Clothes & White Coat	23.9% (16)
Scrubs & Residency Jacket Fleece	1.49% (1)
Isolated Resident Attire
Scrubs Only	5.26% (4)
Scrubs & White Coat	5.26% (4)
Dress Clothes Only	21.1% (16)
Dress Clothes & White Coat	21.1% (16)
Scrubs or Dress Clothes	13.2% (10)
Scrubs or Dress Clothes & White Coat	26.3% (20)
Scrubs & Residency Jacket Fleece	2.63% (2)
Combination Of Above	5.26% (4)

Brand Video Contents

The most common specific residency program strengths highlighted throughout the videos were family friendly atmosphere with camaraderie (83%; 75/90) and early hands-on surgical experience (72%; 65/90). Of note, content

featuring an emphasis and support for diversity or females in orthopaedics was seen in only 32% (29/90) and 11% (10/90) of brand videos, respectively [Table 4].

Table 4. Brand Video Contents: Program Qualities Highlighted

Contents of Brand Video	Definitions and Examples	Percentage (#) of Programs (n = 90)
<i>Family friendly atmosphere and camaraderie</i>	Emphasis on families becoming life-long friends, outside work events/dinners,	83.3% (75)
<i>Surgical experience</i>	Scrubbed into operating room, utilizing surgical instruments, intra-operative fluoroscopy, mention of early hands on experience in operating room	72.2% (65)
<i>Radiograph interpretation</i>	Analyzing radiographs and advanced imaging on the computer	68.9% (62)

Table 4. Continued

<i>Program curriculum</i>	Mentions residency curriculum and/or "outside" rotations	55.6% (50)
<i>Research</i>	Emphasizing research at program, easily available research resources/department, laboratory facilities on site, research funding	54.4% (49)
<i>Social life and hobbies</i>	Work-life balance, perks of the location/city, restaurants, beach/hiking trails, golf, nearby airports	48.9% (44)
<i>Facilities covered</i>	Explaining what hospitals are covered/where they are located and discussing the patient population/demographics at particular locations	48.9% (44)
<i>Access to laboratory facilities</i>	Utilizing sawbones, cadavers, simulation arthroscopy, and virtual reality	44.4% (20)
<i>Diversity</i>	Highlighting emphasis and support for diversity in orthopaedics	32.2% (29)
<i>Fellowship preparation</i>	Emphasis on strong preparation for getting competitive fellowship	30.0% (27)
<i>Mentorship program</i>	Refers to a mentorship program within the residency	25.6% (23)
<i>Splinting/casting skills</i>	Applying splints/casts, utilizing cast saw	22.2% (20)
<i>Sports team coverage</i>	Highlights sports coverage with local sports team	16.7% (15)
<i>Females in orthopaedics</i>	Specific emphasis is addressed for females in orthopaedics	11.1% (10)
<i>Program updates</i>	Highlights recent updates the program has made	4.44% (4)

Discussion

Our cross-sectional study highlighted the use of brand videos by orthopedic surgery residency programs as a means of promoting themselves to potential medical student applicants. We found 47% of orthopedic surgery residency programs had a brand video with an average length of time of 6 minutes and 13 seconds. Further details regarding brand video data, featured speakers, and contents are depicted in the following paragraphs. Lastly, we conclude by proposing recommendations for orthopedic surgery residency programs to keep in mind if developing a brand video.

Brand Video Data

Our study revealed that the prevalence of brand videos among orthopedic surgery residency programs is lower than anticipated. Despite the drastic increase in virtual interfaces following the COVID-19 pandemic, less than half of the orthopedic surgery residency programs have a brand video. This is shockingly low compared to the results from Bixby et al. who studied orthopaedic surgery residency programs' Instagram presence and reported 72% of programs had an active Instagram account.¹⁷ These differences may be due to programs not perceiving them as important, shortage of resources, or unfamiliarity with video marketing. We anticipate that the adoption of brand videos will align with the prevailing trend on Instagram, becoming a standard practice for applicants when choosing sub-internship rotations and programs to showcase themselves.

Programs that were larger, university-based, and allopathic tended to have a higher prevalence of brand videos. Similarly, Shatanofy et al. studied orthopedic surgery residency program website content during the COVID-19 pandemic and reported programs with more than five residents per year were more likely to have a brand video.⁸ Stelzer et al had similar findings in their study and noted that programs in the top quartile in Doximity Reputation ranking had a larger social media following.¹⁸ These findings suggest that community-based programs with less residents may be less

likely to allocate resources towards the development of a brand video placing them at a potential disadvantage to highlight their strengths and attract prospective residents.

The most commonly used platform for orthopedic surgery residency programs brand video was YouTube (71%), likely due to the ease of accessibility as it is the second largest search engine and most popular video platform used.^{19,20} Brand videos need to communicate a focused message over a short time frame in order to retain viewers' attention as long videos risk viewers losing focus.¹⁹ Our study found the average brand video length of time was 6 minutes and 13 seconds, with a range of 0:57 – 23:05. Sell et al. studied the use of video-based education for general surgery residents and reported the length of video being the second most important factor with majority of residents preferring a video of 5-10 minutes in length.²¹ Another method to avoid losing viewers' interest involves the use of several short length videos, each focusing on one particular theme. Guo et al. found that breaking a longer video into multiple shorter segments kept the viewer more engaged as each segment provided a new opportunity to capture one's attention.²² Interestingly, only 23% of programs utilized more than one brand video.

In order to optimize the effectiveness of brand videos, creators utilized different strategies to capture the viewer. Two common themes noted throughout our study included featuring visual footage of the hospital and facilities (80%) as well as background audio (92%). By leveraging visually appealing scenery, a program can become more engaging.²³ Furthermore, background audio can set the tone and keep viewers engaged.⁶ Gupta et al. studied successful factors for YouTube advertisements and reported increased views in advertisements with visually appealing content and background audio.²⁴

Including a closing slide containing contact information and links to social media accounts is an important component in making a video impactful as it provides applicants with a

clear and convenient way to stay connected with the program. Program director and program coordinator contact information allows for ease of communication. Furthermore, links to social media accounts allows viewers to informally follow major events and receive updates in real-time. Surprisingly, we report only 19% of programs displayed a closing slide containing either the program director or program coordinator contact information, email address or phone number, or further links to social media accounts.

Brand Video Featured Speakers

The individuals speaking in the orthopedic surgery residency brand video play a critical role in shaping the overall perception of the program. These individuals range from program director, faculty members, to residents. Each individual provides a unique perspective about the program by sharing their personal experiences, allowing prospective residents to gain a comprehensive understanding of what to expect during their training. Lastly, the program director can highlight the program's mission statement and strengths that help their program stand out. Our study reports 77% of programs had their program director speaking in the brand video with the most commonly worn attire being dress clothes without a white coat.

Senior level residents (PGY-5) have developed years of experience throughout residency and can offer insights into the practical aspects of the residency. In addition, senior residents highlight the program's commitment to fostering the next generation of orthopedic surgeons. Our study reports 41% of programs had residents with seniority speaking in the brand video with the most commonly worn attire being a mixture of scrubs or dress clothes paired with a white coat.

Brand Video Content

Our study found that there was a wide variation in the content and program qualities highlighted within an orthopedic surgery residency program brand video. We report the top program quality highlighted in brand videos was a family friendly atmosphere with camaraderie (83%). This aligns with Huntington et al. who surveyed orthopedic surgery applicants and found the most important factor for applicant rank list was perceived happiness/quality of life of current residents and resident camaraderie.²⁵ the next top quality emphasized in the videos was early hands-on surgical experience (72%). Prospective residents in orthopedic surgery programs often place a strong emphasis on early hands-on surgical experience when evaluating residency programs as it can be invaluable in helping residents refine their skills and prepare for the demands of their future careers.²⁶

Surprisingly, only 9% of programs discussed the qualities they are seeking in prospective residents within their brand video. Since these brand videos are developed as a tool to recruit prospective residents, they should also communicate future resident attributes. This lack of information can make it difficult for prospective residents to determine if the program is a good match for them and their career goals.

The recent focus on diversity in the field of orthopedic

surgery has been driven by the growing recognition on the importance of promoting equality within the profession.²⁷ In the past, orthopedic surgery has been criticized for being a homogeneous field, with a limited representation of females and other underrepresented minorities.²⁵ However, of recent, there has been a growing movement to increase awareness, address this disparity, and promote diversity.^{28,29} Despite this heightened awareness, our study highlights there still remains room for improvement to address longstanding disparities. We found only 32% of programs promoted diversity on their brand video and only 11% of programs emphasized the presence of females in orthopaedics. These findings are echoed by Shatanofy et al. who assessed orthopedic surgery residency websites and noted less than 25% of programs promoted racial and/or gender diversity.⁵ However, although we found residency brand videos appeared to lack emphasis on diversity, it is important to note that 61% of programs featured a female

Suggestions for Future Work

There are several areas for future work and research. One suggestion is to survey prospective residents in order to evaluate what content is most beneficial in brand videos. Additionally, another survey-based study involving programs without a brand video can be performed in order to discover the roadblocks to the development of a brand video. Lastly, analyzing the most effective marketing techniques used in other medical residency programs, as well as in other industries, could provide valuable ideas and inspiration for future orthopedic surgery residency brand videos.

Study Limitations

Our study is not without limitations. First, this is a cross-sectional study; and therefore only provides information at a snapshot in time. Second, programs tend to intentionally omit information that could be received as negative, and the information obtained from brand videos should be viewed with skepticism. Lastly, we were unable to truly assess the impact these brand videos may have on the decision-making process of potential applicants to either rotate or apply for the program.

Conclusion

Brand videos allow orthopedic surgery residency programs to communicate their resources, uniqueness, and culture in order to provide a more authentic portrayal of their program. Despite the recent rise in brand videos following the COVID-19 pandemic, only 47% of orthopedic surgery residency programs have established a brand video. The absence of a brand video was more common in smaller, community-based, and osteopathic programs. This may be due to programs not perceiving them as important, shortage of resources, or unfamiliarity with video marketing.

We propose the following recommendations as a means for orthopedic surgery residency programs to develop a brand video. Brand videos should consist of a clear and concise 5-10-minute YouTube video displaying the footage of the hospital and facilities with background audio to

captivate viewers' attention. Featured speakers should overview of the program followed by highlights of the qualities and attributes they seek in prospective residents. Additionally, senior level residents should comment on their personal experience in a residency program and highlight the program's emphasis on family friendly atmosphere with camaraderie and opportunities for early hands-on surgical experience. Lastly, a closing slide containing contact information and links to social media accounts should be included to provide prospective residents with a convenient way to stay connected with the program.

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