



## UTILIZATION OF YOUTUBE AS A POTENTIAL TOOL TO ASSESS PATIENT'S PERCEPTIONS REGARDING ABLATION FOR WOLFF-PARKINSON-WHITE SYNDROME

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### ABSTRACT

**Background:** The online presence of YouTube as a broad means for video information sharing may have an influential role on the public's understanding of ablation techniques in treatment of Wolff-Parkinson-White Syndrome (WPW) syndrome. This project was designed to collect and analyze available video information on YouTube regarding WPW ablation

**Methods:** Researchers searched YouTube under the tag, "WPW Ablation" to poll available media from the first 10 pages on YouTube. Two separate observers analyzed and categorized these videos by topic, number of views, average views per topic, and average likes and dislikes per topic.

**Results:** In total, 128 videos were categorized; 45 videos under patient's testimonials, 33 videos aimed at educating healthcare professionals, 27 videos as patient education, 8 videos as advertisements, 8 videos aimed at raising public awareness of WPW syndrome ablation, 6 intraoperative videos, and 1 video from a public event. Patient testimonials generated the maximum number of videos, with videos on healthcare education generating maximum number of likes (731 likes). Videos on patient education generated the maximum number of views (251,492 of 1,048,642 total views).

**Conclusion:** YouTube provides a wide range of health-related information, however, there is no oversight or quality control of the content of these videos. The available information for WPW ablation could be improved if experts in the field compiled and standardized educational videos for patients.

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### INTRODUCTION

Since its inception, the Internet has evolved as an essential tool for dissemination of information. In the recent era, ease of access, broad content, and the attractive video format of YouTube have provided an easy source for individuals to both find and disseminate information. Since the advent of these technologies, numerous studies have demonstrated the growing use of the internet to obtain health related information (1). Prior surveys have shown that up to 53% of adults accessed the internet for health related issues in United States, a number which has significantly risen to 71% over 2 years (2). YouTube is a free online video-sharing website that was established in 2005 and owned by Google since 2006 (3), where users can upload, and share videos and is consistently ranked third amongst the most visited websites across the globe (4). According to a press release in 2012, nearly 4

billion videos are streamed daily (a number which has doubled since 2010) (5). With the advent of smart phones, 35% of smartphone users have accessed YouTube either through smart phone application or directly through the internet website (6). YouTube provides an enormous amount of information and has been useful both for social and educational purposes. Both private individuals (7) and companies (8) have used YouTube as a potential tool to grow audiences. The website is intuitive, easy to use and it allows users to register their opinions regarding like or dislike of a particular video. The website also possesses the capability of generating how many times a particular videos is viewed. YouTube has not only created a social impact, but is also being used as forum for healthcare education via discussions about health information, medical breakthroughs, updates in the field of medicine, and video articles for both the layperson as well

as health care providers. However, due to the free and unregulated nature of information available on the Internet, is a potential “double-edged sword” and could provide a possible source of misinformation. Since many patients resort to these web based portals for further details, health professionals should be aware of how public would perceive online healthcare related information. This study was designed to review and explore information available on YouTube regarding ablation for WPW syndrome.

## **MATERIALS AND METHODS**

The YouTube search engine was queried on January 5<sup>th</sup>, 2016 with the search term “WPW ablation”. The results were organized into an Excel spreadsheet and 2 independent researchers (JG and VE) reviewed the available videos from the first 10 pages of search results on the same day. All videos in languages other than English, or videos beyond the ten-page analysis were excluded. Each video was categorized into one of eight categories based on their content: patient education, advertisements, intraoperative videos, personal patient testimonials, public events, healthcare provider education, and public awareness (figure 1, 2). For each video, we recorded the number of views, total likes, and total dislikes (figures 3-5).

## **RESULTS**

In total, 128 videos were reviewed. ‘Patient’s testimonials’ generated the maximum number of videos. Nearly 35% (n=45) of all videos were categorized in this manner. These videos were created by the patients or by their family members and typically described their perspectives regarding pre-operative and post-operative care. The mean number of views for videos in this section was 3,778 with 13.20 average likes and 0.44 average dislikes. Twenty six percent (n=33) of the videos were classified as ‘healthcare provider education’ generating the second highest number of videos following the section ‘patient’s testimonials’. The aim of these videos was to educate nurses, residents, fellows and staff physicians. This category also generated maximum number of total likes (731 likes). Mean views in this section were 6,370 with 22.15 average likes and 1.00 average dislikes.

Twenty two percent of the videos (n=27) were aimed primarily at ‘patient education’. These videos were created by various professional societies, hospitals, government agencies, and physicians; with the intention to educate patients regarding ablation of WPW. This category generated the maximum number of views (251,492 of 1,048,642 total views). There were 9,314 average views generating average of 14.04 likes and 0.93 dislikes. ‘Advertisements’ comprised a total of 8 videos (6.25 %). All of these videos were created by hospitals promoting their safe ablation approaches in their respective institutions. There were 24,284 average views generating average of 14.50 likes and 1.13 dislikes. Only 4.6 % (n=6) videos were categorized as ‘intra-procedural videos’. These videos were recorded in electrophysiology laboratories during the actual WPW ablation procedures. These generated a total 128,049 views with 28.3 average likes and 3.83 average dislikes.

Lastly, 6.25% (n=8) and 0.7% (n=1) videos were classified in the section for ‘public awareness’ and ‘public event’ respectively. The public event section generated the least number of views and least number of total likes. Public awareness was aimed to create awareness amongst high school

and college graduates. None of those videos aimed towards educating athletes.

## **DISCUSSION**

To the best of knowledge, this is the first study to evaluate the usefulness and accuracy of YouTube as a source of information on WPW syndrome ablation. Web based learning and usefulness of YouTube has been extensively evaluated in the past on topics such as immunization (9), acute myocardial infarction (10), cardiac pacemakers (11), and cardiopulmonary resuscitation/basic life support (12). In our study, we assessed the use of YouTube as a potential educational tool regarding ablation for WPW. We found that videos from healthcare professionals had the maximum likes followed by personal patient experience. The maximum number of views was generated for patient education category, followed by health care education. This suggests that the general population as well as healthcare professionals were inquisitive to understand the clinical implications of the WPW ablation. Also, patient testimonial videos generated the maximum number of videos per category (35%) with second most liked video category. This may serve as a motivational source for the general population, as patients undergoing ablation could serve as a source of encouragement for others to undergo the procedure.

The findings in our study were in accordance with Adult Learning Theory models, which propose that adults are independent learners who continue to assimilate knowledge from their life experiences and also from the experience of others. Web based learning through YouTube is one of the best examples of Adult Learning Theory (13). It is important to note that none of the professional organizations such as the American College of Cardiology (ACC), the American Heart Association (AHA) or the Heart Rhythm Society (HRS) had YouTube videos regarding ablation for WPW.

There are important limitations to this study. As discussed earlier, health care information on YouTube varies extensively. Information posted on YouTube shifts significantly as nearly 100 hours of videos are uploaded on YouTube every minute with 800 million unique users every month (8, 14-16). Hence, it is a highly dynamic site, where it is not possible to regenerate the same data collected at one point in time. Hence, findings in our study provide only a momentary snapshot. It is likely that video optimization and analysis between 2 separate data collectors may vary. However in order to minimize this error, both data extractors collected the data simultaneously. Also, number of views does not differentiate the demographics of the population watching the videos. It is therefore difficult to know if the person watching the video is an actual patient, family member or simply browsing. Also, data collection was limited to single video sharing website and hence external validity may be limited.

Reliability of the content on YouTube is of a concern. There are currently no quality controls regarding this medical information available to general public. Also, lack of peer review process on YouTube has resulted in posting of inaccurate and misleading health information. The finding of the present study calls for quality improvement for online education. In the future, it may be useful if there is consideration for standardization of content, labeling of content by category (who creates or issues information) or professional society endorsements of these videos, as current

content may have important effect or impacts upon perceptions regarding the public health. Additionally, more longitudinal studies assessing how people are using YouTube for health related information are needed. There is a possibility to take into account patient demographics and type of devices (i.e. laptops, personal computers, tablets, or smart phones) used to access health related information. Although, we did not take into account above two variables in the current study, we however were able to determine audience responses using YouTube metrics as a surrogate.

## CONCLUSION

This is the first study portraying utilization of YouTube as a potential tool to assess patient's perceptions regarding ablation for Wolff-Parkinson-White Syndrome. It is critical to develop informed and expert commentary on the medical content that is being uploaded on the popular sites like YouTube. National and international professionally societies should be encouraged to create educational videos in order to provide medically accurate information for patients and viewers. The growing popularity of YouTube and its ability to reach and influence a worldwide audience, allows it to serve as an easy platform for web-based learning. Further research is needed to evaluate the influence of YouTube videos on patient's medical decision making.

## References

1. Vance K, Howe W, Dellavalle RP. Social internet sites as a source of public health information. *Dermatologic clinics*. 2009 Apr;27:133-6
2. Pare G MJ, Sicotte C, *et al*. Internet as a source of health information and its perceived influence on personal empowerment. *Int J Healthc Inform Syst Informat*. 2009;4:1-18.
3. Hopkins JO, 2006). "Surprise! There's a third YouTube co-founder". USA Today. Retrieved November 29, 2008.
4. Alexa Traffic Rank for YouTube (three month average)". Alexa Internet. Retrieved March 30, 2014.
5. Oreskovic AJ, 2012). "YouTube hits 4 billion daily video views". Reuters. Retrieved January 23, 2012.
6. Cooper Smith (September 5 GITFM-USABIRS, 2013.
7. Bruno AF, 2007). "YouTube stars don't always welcome record deals". Reuters. Archived from the original on January 16, 2014.
8. Tufnell NN, 2013). "The rise and fall of YouTube's celebrity pioneers". Wired UK. Archived from the original on January 13, 2014.
9. Keelan J, Pavri-Garcia V, Tomlinson G, Wilson K. YouTube as a source of information on immunization: a content analysis. *Jama*. 2007 Dec 5; 298:2482-4.
10. Pant S, Deshmukh A, Murugiah K, Kumar G, Sachdeva R, Mehta JL. Assessing the credibility of the "YouTube approach" to health information on acute myocardial infarction. *Clinical cardiology*. 2012 May;35:281-5.
11. Hayes K, Mainali P, Deshmukh A, Pant S, Badheka AO, Paydak H. Utilization of YouTube as a Tool to Assess Patient Perception Regarding Implanted Cardiac Devices. *North American journal of medical sciences*. 2014 Jul;6:291-4.
12. Murugiah K, Vallakati A, Rajput K, Sood A, Challa NR. YouTube as a source of information on cardiopulmonary resuscitation. *Resuscitation*. 2011 Mar; 82:332-4.
13. SB M. New directions for adult and continuing education. Vol 89. San Francisco CA: Jossey Bass Publisher; 2001. Andragogy and self-directed learning: Pillars of adult learning theory;pp.3-14.
14. "Statistics". YouTube Press Office. Retrieved March 23, 2014.
15. Schmidt E. Princeton Colloquium on Public & Int'l Affairs" YouTube Retrieved June 1, 2009.
16. Seabrook JJ, 2012. "Streaming Dreams". The New Yorker. Retrieved January 6, 2012.

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