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RESEARCH ARTICLE
Health Sciences

Assesing the Usage of YouTube as A Health Information Source About Mitral Valve Prolapse

Mitral Valv Prolabsusu Hakkında Sağlık Bilgi Kaynağı Olarak YouTube Kullanımının Değerlendirilmesi

Onur Aslan[1]

ABSTRACT

YouTube is the largest media sharing site with more than a billion active users monthly. YouTube videos are using for many subjects and health information is popular one of these subjects. In this study, we aim to examine and analyse a common mitral valve disease such as MVP videos on YouTube, which can be used on researching health problem, can contribute how and in what extend to inform patients and healthcare professionals.

All cookies on the computer were cleared and the term "mitral valve prolapse" was entered in YouTube's search bar. Search was made by selecting sorting criteria "number of views", type "general", loading date "any time" and time "all" among filter options. 40 videos which considered appropriate were watched by two independent observers. The number of views, duration, who uploaded, like and dislike numbers of the videos were recorded in the form that prepared beforehand. GQS, JAMA, Discern and VPI scores were calculated. The averages of the values recorded by the two observers were recorded on the form.

Of the 40 videos within the scope of the study, 23 (57.5%) were informative and the remaining 17 (42.5%) were educational. The mean VPI of videos included in the study was found to be 0.91±0.11. Informative videos had more views and higher like ratios. Educational videos had higher mean GQS, JAMA, DISCERN, and VPI scores. These differences were not statistically significant. But the mean VPI of videos presented for patients was higher compared to the videos presented for healthcare professionals in a statistically significant.

Although it was not statistically significant, the number of views and likes of the informative videos were higher than educational videos, but the average of the GQS, JAMA, DISCERN, and VPI scores of the educational videos were higher in our study. On the other hand, the number of views and likes of the videos for patients were higher, this difference was not statistically significant. The VPI average was statistically significantly higher in the videos targeting to patients than the videos targeting to health professionals.

Keywords: Mitral Valve Prolapse, Youtube Health, Valve Disease

ÖZET

YouTube aylık bir milyar kişi aktif kullanıcı sayısıyla en büyük video paylaşım sitesidir. Pek çok konuyla ilgili kullanılmaktadır ki sağlık bilgisi bunların en popüler olanlarından biridir. Amacımız mitral valv prolapsusu gibi sağlık problemlerini araştırırken kullanabilecek olan YouTube sitesindeki içeriklerin hasta veya sağlık personeli bilgilendirilmesine ne düzeyde ve şekilde katkı sağlayabileceği ile ilgili olarak MVP videolarının incelenmesi ve analiz edilmesidir.

Bilgisayardaki tüm çerezler temizlenerek YouTube'un arama çubuğuna "mitral valve prolapse" terimi girildi. Filtre seçeneklerinden sıralama ölçütü "görüntülenme sayısı", tür "genel", yüklenme tarihi "herhangi bir zaman" ve süre "tümü" seçilerek arama yapıldı. Uygun görülen 40 video bağımsız iki çalışmacı tarafından izlendi. Videoların görüntülenme sayısı, süresi, kim tarafından yüklendiği, beğenilme ve beğenilmeme sayıları önceden hazırlanan forma kaydedildi. GQS, JAMA, Discern ve VPI skorları hesaplandı. İki gözlemcinin kaydettiği değerlerin ortalamaları alınarak forma kaydedildi.

Çalışma kapsamına alınan 40 videonun 23 (%57,5)'ü bilgilendirici, 17 (%42,5)'si eğitici özellikteydi. Dahil edilen videoların VPI ortalaması 0,91±0,11 olarak bulunmuştur. Bilgilendirici videolar daha yüksek görüntülenme ve beğeni oranına sahipti. Eğitici videolar daha yüksek ortalama GQS, JAMA, DISCERN, and VPI skorlarına sahipti. Bu farklar istatistiksel olarak anlamlı değildi. Hastalar için sunulan videolar sağlık profesyonelleri için sunulan videolara göre daha yüksek VPI ortalamasına sahipti ve bu fark istatistiksel olarak anlamlıydı.

İstatistiksel olarak anlamlı olmasa da bilgilendirici videoların görüntülenme sayısı ve beğenilme oranı fazla olmasına rağmen eğitici videoların GQS, JAMA, DISCERN ve VPI skorlarının ortalamaları daha yüksek bulunmuştur. Hastalara yönelik videoların görüntülenme sayısı ve beğenilme oranı daha yüksek olmasına rağmen bu fark istatistiksel olarak anlamlı değildi. VPI ortalaması ise hastalara hitap eden videolarda sağlık profesyonellerine hitap eden videolara göre istatistiksel olarak anlamlı oranda yüksekti.

Anahtar kelimeler: Mitral kapak prolapsusu, YouTube sağlık, Kapak hastalığı

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INTRODUCTION

Mitral valve prolapse is a common valvular disease that is associated with myxomatous degeneration of mitral valve apparatus and increased mucopolysaccharide density and defined as bulging of sectors of one or two of the mitral flaps (leaflets) into the left atrium by passing through annular line in systole. Its prevalence in the overall population is around 3% to 6% (Bonow,1998:1486-1588). The disease is also known as a systolic click-murmur syndrome or Barlow Syndrome. Many patients are asymptomatic and it is notable that this disease, which is

[1] M.D. Tarsus State Hospital, Division of Cardiology, Mersin, Turkey. ORCID:0000-0001-6451-2900

diagnosed with echocardiography, is an important topic for questions and search for patients in the clinical examinations.

The internet has quickly become the leading and most widespread source of information and studies show that people utilize the internet to get information about health (Alhamdi, 2012:363-373, Griffiths, 2012:2233-2241). People with chronic diseases make up 80% of all people who access online information available on the internet on health (Madathil, 2015:173-194). According to the literature, currently, the internet is the first medical information source for patients who have concerns about their diseases. In some articles, it was stated that people use the internet to obtain more information about the disease itself, and secondly to learn about the experiences of people who have the same health concerns or even to purchase online medicines or medical treatment (Powell, 2011:20, Van Uden Kraan, 2009:61-69, Atkinson, 2009:4).

Currently, YouTube is the biggest media-sharing platform with more than one billion active monthly users. Thirty million active users view around 5 billion YouTube videos every day. Furthermore, every minute a total of 300 hours long content is uploaded on YouTube (https://www.omnicoreagency.com/youtube-statistics). YouTube is valuable when used suitably by both healthcare professionals and people. Making the medical information available to such a wide audience can cause certain dangers as such this informations may be misleading or even harmful. Therefore, it is crucial to determine the quality and the content. Recently, the quality and the accuracy of the videos on patient education have become a popular topic. Most patients believe that the information on the internet about health available is equal to or better than the information provided by their doctors and most patients do not inform their doctors about the information they found out on the internet about their diseases/conditions (Diaz, 2002:180-185).

Our purpose in this study is to scrutinize and analyze at what level and how the content available on YouTube which can be utilized when trying to get information about mitral valve prolapse can contribute in terms of providing information to both patients and healthcare professionals.

MATERIALS AND METHODS

All cookies in the computer were cleaned and the term “mitral valve prolapse” was typed into the search bar of YouTube (YouTube, www.youtube.com YouTube LLC, San Bruno, CA, USA) on 26/04/2020. The search was conducted by choosing “View count” in sort by criterion, “General” under type criterion, “Any time” under upload date, and “All” under duration. Irrelevant videos (n:68), videos with two or more instances (n:3), and videos that are not in English language (n:1) were excluded from the study’s scope. 40 videos were watched by two independent researchers. The view counts, durations, uploaders, likes, and dislikes were recorded in a readily-prepared form. GQS (Table 1), JAMA (Table 2), Discern (Table 3) and VPI scores were calculated. The average of the two values recorded by two observers was calculated and recorded in the form.

GQS (Global Quality Score): A scoring method defined by Bernard et al. (Bernard, 2007:2070-2077) to evaluate the informativeness of a video for patients.

JAMA (Journal of the American Medical Association): A comparison of transparency and publishing information of each video according to JAMA comparison criteria, as recommended by Silberg et al. (Silberg, 1997:53-55).

DISCERN (Quality Criteria for Consumer Health Information): The criteria developed by the healthcare professionals at Oxford University, UK to determine the quality of information obtained in questionnaires and the treatment options provided (Rees, 2002:273-275).

VPI (Video Power Index) values were calculated with the following formula in order to determine the popularity of the videos: [(like count/dislike count + like count) x 100)]

Statistical analysis

The data was recorded in the SPSS 17.0 package program. Continuous variables were expressed as average ± standard deviation, and categoric variables were expressed in numbers and percentages. The significance of the difference between the averages of the groups in the continuous variables was calculated using the Mann-Whitney-U test in the groups without normal distribution. P value lower than 0.05 were considered statistically significant.

RESULTS

Of the 40 videos within the scope of the study, 23 (57.5%) were informative and the remaining 17 (42.5%) were educational. Of these videos, 21 (52.5%) were for patients and the remaining 19 (47.5%) were for healthcare professionals. 26 (65%) videos were created by healthcare professionals (Figure 1).

When the properties of the 40 videos included in the study are examined, it was determined that one video had a JAMA score of 4, and 5 videos had a GQS score of 5. Averages of scores achieved by all videos on quality criteria are presented in Table 4. The mean VPI of videos included in the study was found to be 0.91±0.11.

Informative videos had more views and higher like ratios. On the other hand, educational videos had higher mean GQS, JAMA, DISCERN, and VPI scores. However, these differences were not statistically significant (Table 5).

When the mean GQS, JAMA and DISCERN scores of the videos for patients and healthcare professionals were compared, no statistically significant difference was found (Table 6). Although view and like ratios of videos presented for patients were higher, this difference was not statistically significant (Table 6). On the other hand, the mean VPI of videos presented for patients was higher compared to the videos presented for healthcare professionals in a statistically significant manner (p=0.002) (Table 6).

DISCUSSION

Websites that using widely as YouTube, could be very beneficial to people who want to gain information about their health problems. Nevertheless, it is clear that a standardization and attention of healthcare professionals is necessary about this manner. Another important point to emphasise is low points of videos on a cruial subject such as health, according to objective assessment scales. Definitely, this could cause wrong perceptions about health problems. Although medical explanations are provided to patients after diagnosis in diseases such as mitral valve prolapse, it is not possible to conduct meetings of sufficient quality to prevent confusion and worries about the disease. Therefore, websites such as YouTube are regarded as commonly preferred sources mostly by patients, and at times by healthcare professionals. In 2019, YouTube ranked 2nd among the most visited websites in Turkey. All over the world, YouTube is the most popular video-sharing site on the internet (Vance, 2009:133-136, https://www.alexa.com/topsites). In our study where we evaluate the quality and the level of videos and information provided by such a popular source on health, and the level of interest and appreciation towards such content, we scrutinized the topic of mitral valve prolapse.

Previously, many analyses were conducted on the topic such as those on myocardial infarction (Pant, 2012:281-285), implantable cardiac devices (Hayes, 2014:291-294), aorta stenosis (Khalil, 2019:371-378), medical videos (Desai, 2013:e82469). In several previous studies, it is emphasized that social media platforms, including YouTube, may provide benefits and be valuable in terms of creating a preferable learning atmosphere (Ashraf, 2015:343-352, Moran, 2011:32). In some studies, it was concluded that integration of social media tools into the curriculum increases students opportunities for learning and forms means and skills that might be helpful in areas such as problemsolving, cooperation (George, 2011:429-434). Although the results of our study partially confirm these suggestions, it seems that achieving standardization in terms of video quality will take time.

In our study, we examined the contents, likes, and comments of the videos. It was remarkable that videos published by healthcare professionals with easier to understand content got more likes compared to videos with richer content with more theoretical approach. However, even though there are satisfactory contents aimed at healthcare professionals, occasionally some videos had contents with very brief information including visuals and sounds.

It is worth noting that some patients compare the level of information provided in YouTube videos to the level of information provided by their doctors. This might indicate that these videos are considered to be very important by patients.

Another remarkable aspect is that the search for “mitral valve prolapse” yielded results with many videos on various diseases such as mitral valve regurgitation which may be medically related to mitral valve prolapse (MVP). Different health problems which are more severe than the intended search topic are displayed under the same search heading might be very confusing for patients and may cause unnecessary concerns.

Similarly, the fact that very limited presence of leading cardiology associations such as the European Society of Cardiology (ESC), American Heart Association (AHA), American College of Cardiology (ACC) on YouTube is another point that is open to debate. The fact that AHA published only a single video is a clear indication of the matter. It is numerically clear that websites such as YouTube are frequently utilized sources by patients and even by healthcare professionals. Considering the importance and reliability of scientific content of medical matters, it can be concluded that major medical entities need to pay more attention to such websites.

CONCLUSION

Consequently, our study demonstrated popular websites have a potential between being beneficial or harmful in the matter of providing information about health. Scales could be useful for the assessment of videos and our analysis point out a quite necessity to improve the quality and requirement of standardization.

In our study, it was found out that although not statistically significant, informative videos have more views and likes compared to educational videos. While educational videos have higher mean GQS, JAMA, DISCERN, and VPI scores. Although the views and like ratios of videos aimed at patients were higher, this difference was not statistically significant. On the other hand, the mean VPI of videos aimed at patients was higher compared to the videos aimed at healthcare professionals in a statistically significant manner. We hold the view that the use of social media platforms such as YouTube for informative and educational purposes will be beneficial and effective; however, there is a certain need for professional evaluation in terms of categorization and standardization.

FIGURES AND TABLES

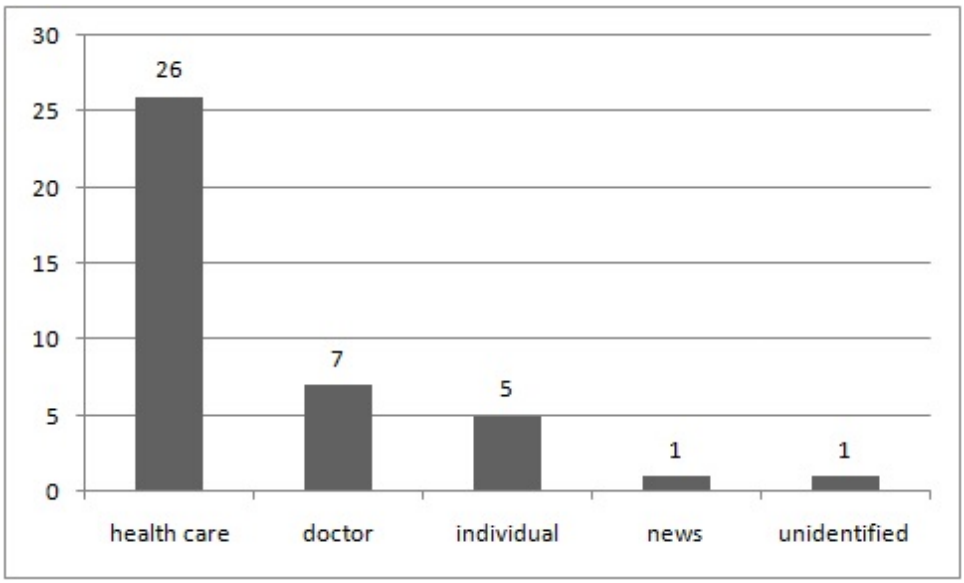

Figure 1: Distribution of videos according to upload source.

Table 1: GQS criteria

Global score	Description
1	Poor quality, poor flow of the site, most information missing, not at all useful for patients
2	Generally poor quality and poor flow, some information listed but many important topics missing, of very limited use to patients
3	Moderate quality, suboptimal flow, some important information is adequately discussed but others poorly discussed, somewhat useful for patients
4	Good quality and generally good flow. Most of the relevanti nformation is listed, but some topics not covered, useful for patients
5	Excellent quality and flow, very useful for patients

*GQS: Global QualityScore

Table 2: JAMA criteria

Authorship	Authors and contributors, their affiliations, and relevant credentials should be provided
Attribution	References and sources for all content should be listed clearly, and allr elevant copyright information should be noted
Disclosure	Website "ownership" should be prominently and fully disclosed, as should any sponsorship, advertising, underwriting, commercial funding arrangements or support, or potential conflicts of interest
Currency	Dates when content was posted and updated should be indicated

*JAMA, Journal of theAmericanMedicalAssociation

Table 3:DISCERN scale

SectionQuestions		QuestionRating				
Reliability of thepublication						
1	Explicit aims	1	2	3	4	5
2	Aims achieved	1	2	3	4	5
3	Relevance to patients	1	2	3	4	5
4	Source of information	1	2	3	4	5
5	Currency (date) of information	1	2	3	4	5
6	Bias and balance	1	2	3	4	5
7	Additional sources of information	1	2	3	4	5
8	Reference to areas of uncertainty	1	2	3	4	5
Quality of information on treatmentchoices						
9	How treatment works	1	2	3	4	5
10	Benefits of treatment	1	2	3	4	5
11	Risks of treatment	1	2	3	4	5
12	No treatment options	1	2	3	4	5
13	Quality of life	1	2	3	4	5
14	Other treatment options	1	2	3	4	5
15	Shared decision making	1	2	3	4	5
Overall rating of the publication						
16	Overall quality	1	2	3	4	5

Table 4: General Characteristics of videos.

	N	Minimum	Maximum	Mean	Std. Deviation
DATE (YEAR)	40	1	13	7,35	3,25
TIME (SECOND)	40	31	1810	379,43	371,80
NUMBER OF VIEWS	40	10054	314869	73761,28	80362,92
LIKE	40	3	1500	290,05	411,82
DISLIKE	40	0	52	13,70	13,66
JAMA (1-4)*	40	1	4	2,25	0,74
GQS (1-5)**	40	1	5	3,15	1,17
DISCERN-1 (8-40)	40	8	27	16,38	6,22
DISCERN-2 (7-35)	40	7	28	15,45	7,04
DISCERN-3 (1-5)	40	1	4	2,48	1,13
DISCERN TOTAL	40	16	58	34,30	14,24
VPI***	40	0,37	1	0,91	0,11

*JAMA: Journal of theAmericanMedicalAssociation, **GQS: Global QualityScore ***VPI: Video Power Index

Table 5: Comparision of informative and educational videos

	Informative (n:23)	Educational(n:17)	p value
DATE (YEAR)	7,48±3,44	7,18±3,07	0,978
TIME (SECOND)	241,04±223,30	566,65±451,24	***0,003***
NUMBER OF VIEWS	76223±89260	70429±69036	0,774
LIKE	310,30±476,68	262,65±315,55	0,485
DISLIKE	13,78±15,21	13,59±11,68	0,691
JAMA (1-4)*	2,17±0,72	2,35±0,79	0,523
GQS (1-5)**	2,96±1,26	3,41±1,00	0,277
DISCERN-1 (8-40)	14,87±6,23	18,41±5,77	0,081
DISCERN-2 (7-35)	13,91±7,42	17,53±6,09	0,075
DISCERN-3 (1-5)	2,26±1,18	2,76±1,03	0,158
DISCERN TOTAL	31,04±14,71	38,71±12,68	0,070
VPI***	0,89±0,13	0,94±0,04	0,249

*JAMA: Journal of theAmericanMedicalAssociation, **GQS: Global QualityScore ***VPI: Video Power Index

Table 6: Comparision of videos for healthcares and patient

	For patients (n:21)	For healthcares (n:19)	p value
DATE (YEAR)	6,48±3,19	8,32±3,11	0,070
TIME (SECOND)	392,95±344,69	364,47±408,71	0,776
NUMBER OF VIEWS	82291±85459	64332±75492	0,776
LIKE	371,90±474,04	199,58±318,30	0,081
DISLIKE	10,95±10,82	16,74±15,99	0,342
JAMA (1-4)*	2,38±0,74	2,11±0,74	0,145
GQS (1-5)**	3,24±1,18	3,05±1,18	0,635
DISCERN-1 (8-40)	17,43±6,65	15,21±5,65	0,342
DISCERN-2 (7-35)	16,71±7,51	14,05±6,39	0,319
DISCERN-3 (1-5)	2,71±1,23	2,21±0,98	0,170
DISCERN TOTAL	36,86±15,25	31,47±12,84	0,335
VPI***	0,95±0,04	0,87±0,14	***0,002***

*JAMA: Journal of theAmericanMedicalAssociation, **GQS: Global QualityScore ***VPI: Video Power Index

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