IS YOUTUBE REALLY A SOURCE OF INFORMATION ON MRI GUIDED PROSTATE BIOPSY?

MR Eşliğinde Prostat Biyopsisi Konusunda Youtube Bilgi Kaynağı mı?

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ABSTRACT

Objective: The purpose of this review was to evaluate the overall quality of the information in YouTube™ videos about prostate MRI-guided biopsy and whether it describes the procedure.

Material and Methods: The terms " MRI-guided biopsy of the prostate" and "MRI targeted prostate biopsy" were searched on YouTube. The first 118 videos of the results were selected, and the written information of the British Association of Urological Surgeons for transrectal ultrasound-guided MRI fusion biopsy was performed. For MRI-guided prostate biopsy, four more questions were added to the MRI-guided prostate biopsy criteria and reviewed by two authors.. The reliability and quality of the content of these videos included in the study were evaluated using JAMA and GQS scores.

Results: A total of 118 videos were reviewed; 3 videos were rated "excellent" and 56 videos were rated "very poor". 91 of the videos (77%) were prepared for physicians, and the remaining videos were prepared by non-physicians. The average duration of the videos was 9.8 minutes, and the average number of daily views was 14.3. The number of views varied between 19 and 710,399 (average: 21). While the average of likes was 62.5, the average of comments was 4.3. The average number of views was 4.3. The score was found to be 3.54 ± 0.5 out of 5. The GQS average was calculated as 4.42 ± 0.56 out of 5. When the videos uploaded by physicians and non-physicians were compared, no statistically significant difference was found in terms of the average duration of the videos, JAMA scores, or number of comments. The number of daily views, number of likes, total number of views, GQS, and scoring criteria were statistically higher in the videos prepared by non-physicians.

Conclusion: Information about MRI-guided prostate biopsies on YouTube is not of a high enough standard to allow patients to make informed decisions. Therefore, healthcare professionals must produce high-quality, informative, patient-focused medical YouTube videos.

Keywords: *Image-Guided Biyopsy; Magentic Rezonans Imaging; Prostate Neoplasms*

ÖZET

Amaç: Bu incelemenin amacı, prostat MR füzyon biyopsi ile ilgili YouTube™ videolarındaki bilgilerin genel olarak kalitesi ve işlem prosedürlerini anlatıp anlatmadığını değerlendirmekti.

Gereç ve Yöntemler: YouTube'da "mrı-guided biopsy of the prostate " ve "mri targeted prostate biopsy'' terimleri arandı. Videolar, sonuçların ilk 118 video seçildi ve transrektal ultrason eşliğinde mrı füzyon biyopsi için İngiliz Ürolojik Cerrahlar Derneği'nin yazılı bilgilerine dayalı kriterlerine, MR-guided prostat biyopsi için de 4 soru daha eklenerek iki yazar tarafından incelendi.. Çalışmaya dahil edilen bu videoların içeriğinin güvenilirliği ve kalitesi ise JAMA ve GQS skorları kullanılarak değerlendirdi.

Bulgular: Toplam 118 video incelendi, 3 video "mükemmel" olarak derecelendirildi, 56 video ise "çok zayıf" olarak derecelendirildi. Videoların 91'sinin (%77) hekimler için hazırlandığını,geri kalan videolar ise hekim olmayanlar tarafından hazırlanmıştır. Videoların ortalama süresi 9,8 dakika olup, günlük gösterim ortalama sayısı 14,3 olarak bulundu.Görüntülenme sayısı 19 ila 710 399(ort:21) arasında değişmektedir. Hekimler ve hekim olmayanların yükledikleri videolar karşılaştırıldığında videoların ortalama süreleri ,JAMA skorları ve yorum sayıları açısından istatistiksel olalarak anlamlı farklılık saptanmadı.Günlük gösterim sayısı, Beğeni sayısı,toplam izlenme sayısı, GQS ve skorlama kriterleri hekim olmayanların hazırladığı videolarda istatistiksel olarak daha yüksekti.

Sonuç: YouTube'da MR füzyon biyopsisine ilişkin bilgiler hastaların karar vermesini sağlayacak düzeyde olmadığı anlaşılmaktadır. Bu sebeple sağlıkçıların kaliteli,bilgilendirici, hasta odaklı YouTube videoları üretmeleri gerekmektedir.

Anahtar Kelimeler: *Görüntüleme Eşliğinde Biyopsi; Magmetik Rezonans Görüntüleme; Prostat Neoplazmları*

INTRODUCTION

Currently, an estimated one million prostate biopsies are done annually in the US to identify cancer (1). The transrectal ultrasound-guided approach, first described around 25 years ago by Hodge and colleagues, is used for almost all of these biopsies (2). Under ultrasound guidance, tissue cores are methodically extracted from the prostate using this approach. Prostate cancer (PCa) is currently the only major cancer that is routinely identified by a blind biopsy of the organ, thanks to the widespread use of this systematic procedure.

On the other hand, up to 35% of first biopsies may result in false-negative results, meaning that significant cancers remain undiscovered (3). There will be no more PCa instances than PCa this year, despite the fact that up to 50% of cases of PCa that have been discovered so far are not clinically important (4). It is anticipated that 28,000 deaths will occur; therefore, early identification of clinically significant PCa will probably save many lives. Clinically significant PCa can be identified by prostate magnetic resonance imaging (MRI), particularly when multiparametric imaging is used (5).

The prostate is imaged by the operator utilizing ultrasound during an MRI-TRUS fusion biopsy. This method of imaging the prostate combines real-time ultrasound with a computerized overlay of a previously completed and stored magnetic resonance image of the prostate to image the target or targets that have been previously identified by a radiologists. Through fusion, a three-dimensional reconstruction of the prostate is produced, and the reconstructed model allows for the tracking and targeting of biopsy sites. This method's drawbacks include its indirectness, the need for an extra device, and the need for specialized operator training. Its advantage is that it can be done under local anesthetic in a few minutes in an outpatient clinic using decades-old techniques. The fusion device yielded really encouraging results.

YouTube videos can be a useful tool for raising patient awareness because they can break down certain barriers to health literacy by providing information in a way that is visually appealing (6). YouTube™, presently regarded as one of the most popular video websites globally, is being utilized more frequently as a medium for health-related messaging (7-8). On the other hand, a lack of expert evaluation and a heterogeneity of video content have resulted from anyone's ability to submit videos (9). As a result, assessing the caliber of the information offered is crucial. As far as we are aware, no prior research has looked into the potential of YouTube™ as a video-based educational tool for MRI -guided biopsy. Thus, in order to raise the caliber of the video site, this study attempts to comprehensively assess YouTube™ videos about prostate MRI fusion biopsy.

MATERIALS AND METHODS

The terms "MRI-guided biopsy of the prostate" and "MRI targeted prostate biopsy were used to search YouTube on May 17, 2022. Approval is obtained from the local ethics committee (decision no: E-96317027-10-247342464; decision date: 01/07/2024)Videos about nerve blocks, transperineal biopsies, TRUS, transrectal ultrasonography, trans-abdominal ultrasound, prostate biopsies, patient testimonies, and those lacking verbal audio were excluded from consideration. Only English-language documents were included in the search, and there were no duration restrictions. Out of the top ten pages of search results, 118 videos were chosen. Information about the total views and likes was gathered. Two writers (M.Ş.Ö., H.,Ö) then independently reviewed and assessed the videos using the pre-established criteria shown in Table 1. Patients having a TRUS biopsy can refer to written information provided by the Association of Urological Surgeons (BAUS). After four additional things were included, it was modified for an MRI fusion biopsy and was deemed to have all the information that a perfect movie ought to have (Table 1) (10). A qualitative evaluation was assigned according to the rater's score, with a total of 28 points available: 0–5 for "very poor," 6–10 for "poor," 11–15 for "acceptable," 16–20 for "good," and 21–28 for "excellent." Next, the reviews from critics were contrasted. All information was entered, examined, and evaluated using Fleiss-Kappa statistics and Microsoft Excel. Intraclass correlation coefficients were also computed.

Furthermore, data was kept regarding who uploaded the videos (doctor, patient, or YouTuber), the intended viewership (doctor or patient), the length of the video, the date of posting, the daily and overall views, as well

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as the likes and comments.

Using JAMA and GQS scores, the dependability and caliber of the material in these study-included movies were assessed. The Global Quality Scale (GQS), which is used for all kinds of videos, is one of the quality analysis scales. The video's GQS quality and usefulness are rated on a 5-point scale from 1 to 5. This scale states that 1 or 2 points correspond to low quality, 3 to medium quality, and 4 or 5 to high quality (11).

The Journal of the American Medical Association (JAMA) standards are an additional grading scheme for online content quality assessment. The four criteria are as follows: description (disclosing video ownership, funding, and advertising), attribution (noting all copyright information, references for all content listed), authorship (authors with links and relevant credentials), and currency (posting and updating dates as indicated). The maximum score is 4, with 1 point awarded for each criterion (12).

IBM Inc.'s (USA) SPSS 22.0 (Statistical Package for Social Sciences) was used to analyze the study's data. For continuous variables, the outcomes were noted as the minimum, maximum, mean, median, and standard deviation values. Numbers and percentages were used to record categorical variables. The Kolmogorov-Smirnov (KS) test was used to determine the normal distribution of JAMA and GQS scores. It was applied to examine the normality of the distribution of the variables. For these variables that were not normally distributed, the Mann-Whitney U test was employed. P values less than 0.05 were regarded as statistically significant.

RESULTS

Based on reviewer average scores, 3 of 118 videos achieved an "excellent" rating; 56 of the videos were rated as "very poor" (Table 2). 91 of the videos (77%) were prepared for physicians, and the remaining videos were prepared by non-physicians. The average duration of the videos is 9.8 ± 10.6 minutes, and the

Table 1. Scoring criteria for videos, based on British Association of Urological Surgeons written information. The lesion in the Procedure MRI fusion section has been modified and added for MRI guided biopsy.

Information topic	Points awarded	Maximum available	Score
Procedure: MRI fusion	Scanning MRI, MRI evaluation, MRI and ultrasonography image fusion, General anesthesia when necessary	4	
Alternatives to TRUS	Ultrasound/MRI-guided, transperineal Repeat PSA without biopsy	1	
Preparation for procedure	Eat and drink normally on day Nose swab for MRSA If not under local anaesthetic: preoperative assessment Stopping Warfarin	4	
Procedure: TRUS	Lay on side with knees drawn up to chest Insertion of ultrasound probe Duration 20 minutes Prophylactic antibiotics	4	
Procedure: Biopsy	Local anaesthetic around prostate Needle inserted through probe may cause discomfort Series of samples, 10e18 taken	3	
Side effects	Common: haematuria for 2e3 days, blood in semen for 6 weeks, blood in stool, discomfort Uncommon: septicaemia, haemorrhage, failure to detect significant cancer, need to repeat procedure	6	
Recovering	Antibiotics for 3 days postprocedure Day case if local, 1 day if general anaesthetic Rest for 48 h afterwards, avoid physically demanding activities	3	
Signposting	Fever or shivering, lots of bleeding in urine or back passage with clots	1	
Results	14e21 days for biopsy results to become available MDT discussion, possible further investigations such as bone scintigraphy, CT or MRI	2	
Further information	Where can the patient get further information	1	
Total			

TRUS: transrectal ultrasound; PSA: prostate-specific antigen; CT: computed tomography; MRI: magnetic resonance imaging; MDT: multidisciplinary team.

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average number of daily views is 14.3 ± 61.7. The number of views varies between 19 and 710 399 (mean: 21 383 ± 86 193). The average number of likes is 62.5 ± 167, the average comment was 4.3 ± 13.9 (Table 3).

The average JAMA score of the videos was 3.54 ± 0.5 out of 5. The GQS average was calculated as 4.42 ± 0.56 out of 5 (Table 4).

When the videos uploaded by physicians and non-physicians were compared, no statistically significant difference was found in terms of the average duration of the videos, JAMA scores, or number of comments. The number of daily views, number of likes, total number of views, GQS, and scoring criteria were statistically higher in the videos prepared by non-physicians (Table 5).

DISCUSSION

People are accessing social media, especially YouTube, more frequently to find information about their health. Although there are many videos on YouTube about prostate cancer, studies examining the accuracy or reliability of these videos are limited. There was only one study in the literature examining the reliability of prostate biopsy videos on YouTube, but MRI fusion biopsy was not mentioned in this study (13). This study is about an MRI fusion prostate biopsy on YouTube. It is the first study to show whether there is reliable information.

Anyone can readily post any kind of health-related video, unrestricted, unpaid, and unsupervised, on YouTube. Only one video—32 of which were evaluated as "very poor"—and one, which was rated as "good" were both analyzed in the one study in the literature that looked at TRUS biopsy and YouTube information films. The scoring system in this article only made use of the BAUS handbook. In addition to the modified BAUS criteria, GQS and JAMA were also scored in our investigation. In our study, out of 118, 3 videos were rated as "excellent" and 56 videos were rated as "very poor". 91 of the videos (77%) were prepared for physicians, and the remaining videos were prepared by non-physicians. The average duration of the videos is 9.8 minutes, which is relatively long.

Table 2. Video ratings based on reviewers' averaged scores

Excellent	3
Good	6
Acceptable	23
Poor	30
Very poor	56

Table 3. Characteristics of the YouTube videos

	YouTube Videos n (%)
	118 (100)
Type of Uploader	
Physicians	91 (77)
Non-physicians	27 (23)
	Mean±SD **(min-max)**
Duration (min**.)**	9.8 ± 10.6 (0.82 – 52.8)
Daily view ratio	14.3 ± 61.7 (0.1 - 465)
Number of views	21383 ± 86193 (19 – 710399)
Number of likes	62.5 ± 167 (0 – 1400)
Number of comments	4.3 ± 13.9 (0 - 123)

min: minutes, SD: standart deviation, min: minimum, max: maximum

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Table 4. JAMA, GQS and Scoring criterias based on British Association of Urological Surgeons criterias

	Total n(%)
	118 (100)
	Mean ± Std
JAMA	3.54 ± 0.5
GQS	4.42 ± 0.56
Scoring criterias*	
Procedure: MRI Fusion	2,82± .88
Alternatives to TRUS	.92 ± .29
Preparation for procedure	.26 ± .59
Procedure: TRUS	1.03 ± 1.47
Procedure: biopsy	1.13 ± 1.31
Side effects	.64 ± 1.56
Recovering	.14 ± .67
Signposting	.06 ± .271
Results	.28 ± .469
Further information	.31 ± .466
Overall	4.77 ± 4.7

GQS: Global Quality Scale Score, JAMA: Journal of the American Medical Association Criterias Score
*Scoring criteria for videos, based on British Association of Urological Surgeons written information

Table 5. Video characteristics by uploaders

	Physicians n (%)	Non-physicians n (%)	p Value**
	91 (77)	27 (23)	
	Median (IQR)	**Median (IQR)**	
Duration (min.)	6.63 (11.1)	6 (13.7)	.823
Daily view ratio	1 (3.17)	3.08 (12.7)	.002
Number of views	1 499 (5814)	6 409 (33 440)	.001
Number of comments	0 (2)	1 (3)	.287
Number of likes	8 (34)	23 (89)	.023
JAMA	4 (1)	4 (1)	.366
GQS	4 (1)	4 (1)	.048
Scoring criterias* (overall)	2 (6)	5 (6)	.033

min.: minutes GQS: Global Quality Scale Score, JAMA: Journal of the American Medical Association Criterias Score *: Scoring criteria for videos, based on British Association of Urological Surgeons written information ** mann whitney u

The quality and dependability of videos are generally influenced by the people who generate them, according to earlier research. .Films uploaded by physicians had significantly higher DISCERN and JAMA scores than films published by non-physicians, according to Ovenden et al. (14). Contrary to the literature, our investigation found no statistically significant difference in JAMA scores; nevertheless, GQS and scoring criteria were statistically higher in videos produced by non-physicians. It might have a greater bearing on a practitioner's specific work than the caliber of the medical professionals' film. Furthermore, non-physicians might have covered more detailed procedures as opposed to a narrow theme.

Our goal was to assess the value and suitability of YouTube videos for medical patients. Many of the top

results, even after using specialized searches, were not patient-centered, unrelated, or focused on the incorrect treatment. The films lacked fundamental guidance on how to do MRI fusion, deal with side effects, prepare for the surgery, and recuperate after it. The content was generally of low quality. Prior research including video content for operations like knee arthroscopy and cataract surgery demonstrated that videos improved patient satisfaction and comprehension of the procedure (15-16). It's also necessary to enhance the substance and caliber of YouTube films that explain the MRI fusion biopsy procedure.

CONCLUSION

YouTube offers a special collection of freely available, easily accessible videos, many of which explain medical procedures. Nevertheless, compared to professionally produced information leaflets, the quality of the information in these videos is often lower and the videos themselves are unedited, making it difficult for patients to make an informed decision (17).

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