ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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YouTube as a Source of Information on Intracavernosal Injection: A Quality and Reliability Analysis

İntrakavernosal Enjeksiyon Hakkında Bilgi Kaynağı Olarak YouTube: Bir Kalite ve Güvenilirlik Analizi

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ABSTRACT Objective: This study aims to evaluate and classify the most frequently watched videos on intracavernosal injection on YouTube according to scientific criteria and clarify whether these resources should be recommended to patients by physicians. **Material and Methods:** YouTube search was performed using the keywords "penile injection", "trimix injection", "intracavernosal injection", "papaverine injection". The videos were classified according to their utility as useful information, useful patient opinion, misleading information and misleading patient opinion. Global Quality Scale and DISCERN tool were used to judge quality, reliability and comprehensiveness. **Results:** A total of 156 videos were included in the study. Thirty five videos were classified as useful information, 24 videos as misleading information, 37 videos as useful patient opinion, and 60 videos as misleading patient opinion. Comparison of these groups revealed that the groups were not different in terms of video views, length, number of likes, dislikes, or comments (p>0.05). Useful information and useful patient opinion videos were found to have significantly higher reliability, comprehensiveness and Global Quality Scale scores (p=0.01). **Conclusion:** Although more than half of YouTube videos on intracavernosal injection include misleading information, there are also a substantial number of videos that contain reliable and comprehensive information. Physicians can identify these videos containing reliable information and guide their patients. More quality content needs to be created by reliable sources.

Keywords: Internet; injections; erectile dysfunction

ÖZET Amaç: Bu çalışmada, YouTube üzerinde intrakavernozal enjeksiyon konusunda en sık izlenen videoları bilimsel kriterlere göre değerlendirmek ve sınıflamak amaçlandı. Bu kaynakların hekimler tarafından hastalara tavsiye edilip edilemeyeceğini anlaşılmak istendi. **Gereç ve Yöntemler:** YouTube üzerinde "penile injection", "trimix injection", "intracavernosal injection", "papaverine injection" kelimeleri ile arama yapıldı. Yararlılığına göre "faydalı bilgi", "faydalı hasta düşüncesi", "yanıltıcı bilgi" ve "yanıltıcı hasta düşüncesi" olarak sınıflandırıldı. Kalite değerlendirmesinde Global Kalite Skalası (GKS), güvenilirlik ve kapsamlılık değerlendirmesinde DISCERN skala kullanıldı. **Bulgular:** Yüz elli altı video çalışmaya dâhil edildi. Otuz beş (%22,4) video "faydalı bilgi", 24 (%15,3) video "yanıltıcı bilgi", 37 (%23,7) video "faydalı hasta düşüncesi", 60 (%38,4) video "yanıltıcı hasta düşüncesi" olarak sınıflandırıldı. Yapılan karşılaştırmada; video görüntülenme sayısı, uzunluğu, "beğenme", "beğenmeme", yorum sayıları arasında gruplar arası anlamlı fark görülmedi (p>0,05). "Güvenilirlik", "kapsamlılık" ve GKS skorlarında "faydalı bilgi" ve "faydalı hasta düşüncesi" grubu diğer gruplara göre anlamlı olarak daha üstün bulundu (p=0,01). **Sonuç:** İntrakavernozal enjeksiyon konusunda, YouTube videolarının yarısından fazlası yanıltıcı bilgiler içerse de azımsanmayacak kadar güvenilir ve kapsamlı videolar da mevcuttur. Hekimlerin internet üzerindeki doğru ve eğitici videoları belirleyip hastalarına kılavuzluk etmeleri, intrakavernozal enjeksiyon tedavisine yardımcı olabilir. Güvenilir kaynaklar tarafından daha fazla kaliteli içerik oluşturulması gerekir.

Anahtar Kelimeler: İnternet; enjeksiyonlar; erektil disfonksiyon

Erectile dysfunction (ED) is the state of not being able to get and maintain an erection sufficient for sexual activity. ED is currently a common health issue and affects the quality of life for both sexes. The prevalence of ED increases proportionally with advanced age.[1] The first-line treatment includes phosphodiesterase type 5 (PDE5) enzyme inhibitors. In some cases, patients cannot benefit from PDE5 inhibitors. This may result from damage to the cavernosal nerves, veno-occlusive dysfunction, unre-

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sponsiveness to PDE5, and drug-related side effects.[2] In such cases, the second-line treatment consists of intracavernosal injection (ICI). This method has been used in the treatment of ED for approximately 40 years.[3] The injection of vasoactive agents into the corpus cavernosum with a needle increases the adenosine monophosphate concentration and decreases intracellular Ca^{+}. This causes the relaxation of smooth muscles and helps achieve erection.[3,4] Studies have shown this method to have a 78.3% success rate in the treatment of ED.[5]

Despite its widespread use, patients have reservations against the ICI method in the early stages of treatment. This is majorly because most of these patients do not have any experience with this method. They are anxious about the notion of "sticking a needle into the penis". In addition, the procedure is associated with side effects such as priapism, cavernosal fibrosis, penile hematoma, infection, and hypotension.[6] Some patients refuse to get adequate information regarding the application of procedure from their doctor or nurse due to hesitation and shyness. The patients need a visual source that they can see the procedure and can access at any time. At this point, alternatives such as guidelines, books, and the internet come into prominence as sources of information for the patients.

In the current age and time, the internet is the most convenient way to access information. YouTube (Google, California, USA) is an online video-sharing website, where people can upload and watch videos. Hundred hours of video are uploaded to YouTube every minute and the website is visited by 1 billion users every month.[7] Both explaining and learning about ICI require experience and time. It is a private matter for the patient. At this point, the internet can be a very effective tool. It enables the patient to access this information without breaching their privacy. However, what is important here is that the patient can access correct information. It is not possible for the patients to evaluate the scientific accuracy or quality of YouTube content. A video containing false information can do more harm than good. That is why it is important to thoroughly analyze ICI-related videos.

There is not adequate or comprehensive information about the quality of ICI-related videos available on YouTube. In our study, we aimed to evaluate ICI-related YouTube videos created in the English language to determine their quality, comprehensiveness, and reliability, and to compare and classify the videos according to their sources of information. We believe that the comprehensive analysis of ICI-related YouTube videos will guide physicians and patients to access accurate and useful content on the internet.

MATERIAL AND METHODS

RESEARCH STRATEGY AND DATA COLLECTION

The search keywords were determined as "penile injection", "trimix injection", "intracavernosal injection", and "papaverine injection" (Figure 1). On June 3, 2020, a single shot search was carried out using the aforementioned keywords at the "http://www.youtube.com" web address. All personal accounts were logged off before the search, and all search history and cookies were cleared. The United States was selected as the geographical location. Previous studies indicate that almost all internet users majorly click the results that come out on the first page.[8,9] Based on these studies, the first 60 videos that came up after each search were recorded.[10] Among the 240 videos, 72 duplicate videos, 3 videos without sound, and 5 videos that were not in English were excluded from the study. Eight videos that made up parts of video series were evaluated as a total of 4 videos. A total of 156 videos were included in the study (Figure 1).

All of the videos included in the study were evaluated by two independent authors (EK, MS). The videos were categorized according to the classification system indicated below. The authors compared results and came into an agreement. In case of disagreement, the conflict was resolved by asking for the opinion of a urologist other than the authors (MB).

VIDEO PARAMETERS AND SCORING SYSTEM

The duration of each video was individually recorded. The total number of views was recorded. The number of views per day was calculated according to the number of days that the video had been available online.

The numbers of likes, dislikes, and comments were recorded (Table 1).

The videos were classified into 4 groups in order to evaluate accuracy: useful information, misleading information, useful patient opinion, and misleading patient opinion.

This classification was based on similar previous studies that were conducted using YouTube that

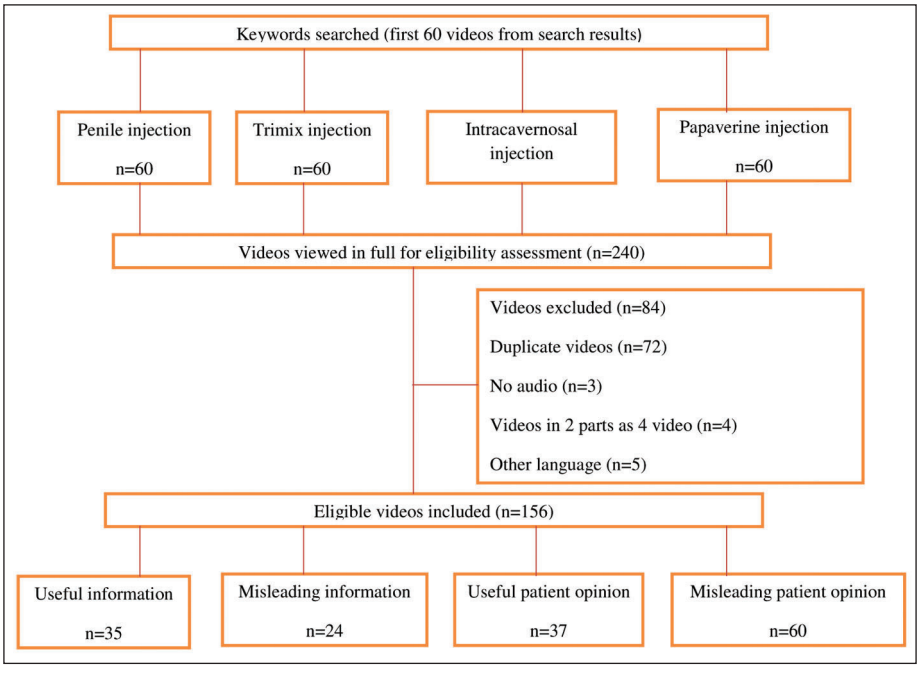

FIGURE 1: Flowchart of the study.

TABLE 1: Analyses of video characteristics by usefulness category.

Characteristic	Useful information	Misleading information	Useful patient opinion	Misleading patient opinion	p value
Video number	35 (22.4%)	24 (15.3%)	37 (23.7%)	60 (38.4%)	
Audience interaction parameters					
Number of views*	74,988±41,735	72,394±46,118	67,227±43,051	72,785±36,534	0.878†
Video length (sec)*	160±73	163±81	167±80	179±127	0.984†
Duration on YouTube (month)*	27.4±18.9	29.3±14.2	27.1±23.3	26.3±15.6	0.717†
Views per day*	274±527	113±152	386±1069	289±722	0.790†
Likes*	63.4±81.9	39.6±26.9	47.6±28.9	49.2±31.8	0.509†
Dislikes*	22.4±15.5	27.3±17.2	27.3±13.5	22.7±14.5	0.253†
Comments*	5.3±4.9	8.9±5.4	8.5±6.1	6.8±6.3	0.063†
Reliability score*	4.5±0.6	2.3±0.7	3.5±0.6	1.8±0.8	**0.001**†
Comprehensiveness score*	4.1±0.8	2.4±0.9	3.5±0.9	1.3±1.1	**0.001**†
GQS score*	4.3±0.6	2.1±0.9	3.7±0.8	1.4±0.7	**0.001**†
Source of upload					**0.001**‡
Universities/professional organizations/non-profit physician/physician groups	20 (57.1%)	-	-	-	
Standalone health information websites	9 (25.7%)	6 (25.0%)	11 (29.7%)	6 (10.0%)	
Medical advertisements/for profit-companies	4 (11.4%)	8 (33.3%)	7 (18.9%)	17 (28.3%)	
Patient/individual	2 (5.7%)	10 (41.7%)	19 (51.4%)	37 (61.7%)	

*Mean±standard deviation; †Independent sample t-test; ‡ Fisher's exact test; Values of p<0.05 was accepted as significant and marked bold; GQS: Global Quality Scale.

were available in the literature.[10,11] Details about the groups are presented below.

1) Useful information: Provides objective and correct information about the subject. Video helps in understanding and the application of the procedure. The main purpose is to provide information. ICI is intended to be performed on one's self. The video does not contain misleading information.

2) Misleading information: Provides objective and correct information about the subject. However, some of the information is misleading or false. Videos containing partially correct and partially incorrect information were also included in this group.

3) Useful patient opinion: It focuses more on the subject's opinions and experiences than objective information. The purpose of the video is to teach the viewer how to perform self-ICI. The patient's own experiences are used as reference instead of objective information. It also aims to convey the patients' own gains and concerns about the subject. It does not contain false information.

4) Misleading patient opinion: It reflects the patients' personal experiences. It does not contain accurate information or useful personal experience related to the application. It does not intend to inform about injection. The focus of the video has completely deviated from its original purpose. It is not useful in the context of the subject.

The videos were categorized in 4 different classes according to their sources of information. University/professional organisations/non-profit-physician/physician groups (Source 1), standalone health information websites (Source 2), medical advertisements/for-profit-companies, (Source 3), patients/individuals (Source 4).

Reliability was evaluated using to the modified DISCERN table prepared by Singh et al. (Table 2).[12] One point was assigned to each item in the 5-item table (adapted from the original DISCERN tool for assessment of written health information by Charnock et al.).[13] The comprehensiveness of the videos was also assessed using a 5-point scale that evaluates ICI instructions. The videos were assigned 1 point for each item that was included in their content (Table 2).

TABLE 2: Assessment tools for reliability, comprehensiveness and Global Quality Scale of intracavernosal injection videos on YouTube.

Reliability (1 point per question answered yes)
1. Is the video clear, concise, and understandable?
2. Are valid sources cited? (from valid studies, urologists or andrologists)
3. Is the information provided balanced and unbiased?
4. Are additional sources of information listed for patient reference?
5. Does the video address areas of controversy/uncertainty?
Comprehensiveness (1 point per each contained in video)
1. Prepare pen/syringe and supplies (alcohol swab, cotton ball or gauze patch, sharps container)
2. Select an injection area and clean with alcohol swab
3. Show injection (attention to the superficial and deep dorsal vein/nerve, urethra)
4. Throw away the pen/syringe into a sharps container
5. Press the cotton ball or gauze patch on injection site
Global Quality Scale
1. Poor quality, poor flow, most information missing, not helpful for patients
2. Generally poor, some information given but of limited use to patients
3. Moderate quality, some important information is adequately discussed
4. Good quality good flow, most relevant information is covered, useful for patients
5. Excellent quality and excellent flow, very useful for patients

The overall quality of the videos was assessed using the Global Quality Scale (GQS). This evaluation form was created as a result of previous internet research and analysis. A large number of similar studies have been carried out using this table (Table 2).[9,10,14]

STATISTICAL ANALYSIS

The SPSS version 22 (SPSS IBM Corp.; Armonk, NY, USA) program was used in the analysis of the data. Independent sample t-test was used to compare independent groups, Pearson correlation test to examine the relationship between variables and chi-square tests were used to compare categorical data. Post hoc test was used to compute pairwise comparisons. Inter-rater agreement was determined using Cohen's kappa score. Interobserver reliability was quantified by calculating the intraclass correlation coefficient. Quantitative data were expressed as mean±standard deviation values in the tables. Categorical data were written as n (frequency) and percentages (%). The data were analyzed at 95% confidence level and it was considered statistically significant if the p value was less than 0.05.

RESULTS

A YouTube search was performed using the keywords "penile injection", "trimix injection", "intracavernosal injection", and "papaverine injection", and the first 60 videos that came up for each keyword were evaluated. Seventy two duplicate videos, 3 videos without sound, and 5 videos that were not in English were excluded from the study. Eight videos that made up parts of video series were evaluated as a total of 4 videos. The 156 videos totaled 4398.5 minutes and had a total of 11,216,517 views. The results of the 2 authors regarding the classification of the videos according to utility had good agreement (kappa coefficient: 0.911). Thirty five videos were determined to contain useful information, 24 videos contained misleading information, 37 videos contained useful patient opinion, and 60 videos contained misleading patient opinion (Figure 1). The statistical comparison of these groups revealed that the groups were not different in terms of video views, length, or the number of likes, dislikes, or comments (p>0.05). However, there was a significant difference between the groups in terms of reliability, comprehensiveness, and GQS scores (p=0.001) (Table 1). The pairwise comparison of the 2 groups revealed that the results of useful information and useful patient opinion groups were significantly better (p=0.01) (Table 3).

The videos were categorized into 4 different classes according to their sources of information: patient/individual (n=68), universities, professional organisations, non-profit physicians, or physician groups (n=20), standalone health information websites (n=32), and for-profit companies or medical advertisements (n=36) (Table 4). The statistical comparison of these groups revealed that the groups were not different in terms of video views, length, or the number of likes, dislikes, or comments (p>0.05). However, there was a significant difference between the groups in terms of reliability, comprehensiveness, and GQS scores (p=0.001) (Table 4). The groups were compared in pairs. The videos prepared by professional healthcare workers or organizations were found to be superior to those prepared by standalone health information websites in reliability, comprehensiveness, and GQS scores (p=0.015, p=0.054, p=0.007, respectively). Also, the videos prepared by professional healthcare workers or organizations were found to be superior to those prepared by for-profit companies or as medical advertisements and the videos prepared by patients/individuals in terms of reliability, comprehensiveness, and GQS scores (p=0.01) (Table 5).

DISCUSSION

The internet has revolutionized all areas of life in recent years. It offers a fast and practical way to access information as an alternative to encyclopedias, newspapers, and magazines. However, the general problem is that there is no mechanism by which this information can be monitored. That is why the reliability of the information, particularly medical information, accessed over the internet is crucial. According to a study, more than half of all patients obtain information on medical issues through the internet. The majority of these patients use the internet as a first-line resource, even before they seek a doctor's opinion.[15,16] Therefore, physicians of today do not have the luxury of ignoring the reality of the internet.

TABLE 3: Pairwise comparisons of video groups according to usefulness.

	p value					
Characteristics	**Group 1 vs 2**	**Group 1 vs 3**	**Group 1 vs 4**	**Group 2 vs 3**	**Group 2 vs 4**	**Group 3 vs 4**
Reliability score	**0.001**	**0.036**	**0.001**	**0.001**	0.517	**0.001**
Comprehensiveness score	**0.001**	0.388	**0.001**	**0.031**	**0.015**	**0.001**
GQS score	**0.001**	0.361	**0.001**	**0.001**	0.249	**0.001**
Source of upload	**0.001**	**0.001**	**0.001**	0.442	0.131	**0.042**

Values of p<0.05 was accepted as significant and marked bold; GQS: Global Quality Scale.

TABLE 4: Characteristics of intracavernosal injection videos stratified by source.

Characteristics	Universities/professional organizations/non-profit physician/physician groups	Standalone health information websites	Medical advertisements/ for profit-companies	Patient/Individual	p value
Video number	20	32	36	68	
Audience interaction parameters					
Number of views*	77,185±41,039	66,269±48,752	68,194±37,146	74,959±38,320	0.645†
Video length (sec)*	160±71	156±71	176±93	175±120	0.876†
Duration on YouTube (month)*	26.9±20.7	27.0±17.9	26.5±16.5	27.8±18.6	0.954†
Views per day*	288±555	275±560	219±372	316±962	0.756†
Likes*	46.1±26.0	59.7±86.9	45.8±30.8	49.9±29.8	0.925†
Dislikes*	22.3±14.6	26.6±16.1	26.9±14.8	22.6±14.6	0.406†
Comments*	3.9±4.6	8.0±5.3	7.2±5.9	7.7±6.4	0.077†
Reliability score*	4.4±0.6	3.3±1.2	2.6±1.1	2.4±1.2	**0.001†**
Comprehensiveness score*	4.1±0.8	3.0±1.4	2.3±1.4	2.1±1.5	**0.001†**
GQS score*	4.3±0.6	2.9±1.4	2.3±1.4	2.3±1.4	0.001†

*Mean±standard deviation; †Independent sample t-test; Values of p<0.05 was accepted as significant and marked bold; GQS: Global Quality Scale.

Being the most popular video hosting website, over one billion hours of YouTube content is watched by its users every day.[7] However, it is impossible to confirm the accuracy or reliability of this content according to scientific data.

ICI is a commonly used method for the treatment of ED. Even though physicians provide detailed information regarding the subject, the 5-year follow-ups reveal that more than 50% of these patients discontinued treatment. Among the reasons for this are the unwillingness of the patients to apply the treatment and needle phobia.[17] It is not always possible to get detailed information about penile injections. It is certain that urological diseases are more sensitive subjects. That said, studies indicate that patients with urological conditions have been increasingly referring to online resources.[18] It is clear that reliable and comprehensive visual resources where the patients can observe how to perform the procedure will be beneficial. In this study, we evaluated 4398.5 minutes of ICI-related YouTube content.

After evaluating the videos, we determined 35 (22.4%) videos to contain useful information. We found that the reliability, comprehensiveness, and GQS scores of the videos in this group were higher compared to other groups. They were found to be significantly superior to the videos in 2 of the remaining groups. Videos containing useful information should be primarily recommended to the patients in order for them to have access to correct and comprehensive information. Of course, these videos do not have a sufficient majority yet. Thirty-seven (23.7%) videos were determined to contain useful patient opinions. The evaluation revealed that the reliability, comprehensiveness, and GQS scores of these videos were lower compared to the useful information group. Also, the results of this group were significantly different than those of misleading information and misleading patient opinion groups. Hence, it is improper to approach videos created by patients with prejudice. Although these videos are not scientifically comprehensive, they can provide useful information to patients. They can be expected to help increase treatment motivation for the disease by providing empathy and emotional support.

TABLE 5: Pairwise comparisons of video sources.

	p value					
Characteristics	**Group 1 vs 2**	**Group 1 vs 3**	**Group 1 vs 4**	**Group 2 vs 3**	**Group 2 vs 4**	**Group 3 vs 4**
Reliability score	**0.015**	**0.001**	**0.001**	0.184	**0.005**	1.000
Comprehensiveness score	0.054	**0.001**	**0.001**	0.189	**0.035**	1.000
GQS score	**0.007**	**0.001**	**0.001**	0.368	0.203	1.000

Values of p<0.05 was accepted as significant and marked bold; GQS: Global Quality Scale.

Twenty four (15.3%) videos were determined to contain misleading information and 60 (38.4%) videos, misleading patient opinion. It can be said that more than half of all videos provide incorrect or incomplete information. In a similar study, Tolu et al. evaluated YouTube videos on subcutaneous anti-tumour necrosis factor injections.[10] They found that 50% of the videos that they evaluated contained misleading information or misleading patient opinions. The statistical comparison of these groups revealed that the groups were not different in terms of video views, length, or the number of likes, dislikes, or comments. Hence, it can be said that the users cannot adequately evaluate content quality as per scientific criteria. However, this does not indicate that the internet is just a source of incomplete and false information. At this point, physicians need to step in and provide proper guidance.

The reliability, comprehensiveness, and GQS scores of the videos prepared by universities or professional organizations were significantly higher compared to the other groups. These scores were lower for videos prepared by standalone health information websites and medical advertisement companies, respectively. The videos prepared by patients/individuals had the lowest scores. However, the pairwise comparison of the scores of these 3 groups revealed that the lengths of the videos, the number of views per day, and the number of likes, dislikes, and comments were similar. Kocyigit et al. studied videos concerning ankylosing spondylitis exercises and classified these videos into 3 as low-, moderate-, and high-quality videos. They found that 72% of the videos prepared by universities or professional organizations were high-quality. Also, the DISCERN score was significantly higher for high-quality videos compared to other groups. The number of views per day, and the number of likes and comments were similar for the videos. Only the number of dislikes was significantly different between the groups.[11] Considering all these, we can say that physicians should primarily recommend videos prepared by universities and professional organizations.

During the analysis of the videos, it was observed that artificial penis models were used for ICI demonstration. These models were evaluated as useful as they demonstrate the anatomy of the penis in detail. In addition, some videos show transverse sections of the penis and visuals indicating the anatomical location of the urethra and dorsal vessels and nerves at 6 and 12 o'clock positions. This information emphasizes that these regions should be avoided when making injections. They can help patients learn more quickly and effectively. As a matter of fact, in a previous study on methotrexate-self injections, it was observed that the injection training time provided by the nurses decreased by 25% in patients who watched the relevant instructional video.[19]

ICI is currently used as second-line therapy for patients who do not benefit from or tolerate oral therapy. ICI is associated with complications such as priapism, penile hematoma, infection, needle fracture, and hypotension.[20] The available high-quality content describes these complications using visuals and explains the procedure. It is clear that high-quality content can help patients in the management of complications. In addition, the high-quality useful patient opinion videos do not only inform their viewers but patients that have already undergone ICI treatment express their opinions. This may appeal to the viewers' feelings of empathy and help patients better adapt to the treatment. Useful patient opinion videos may be help cultivate

emotional motivation in ICI patients. Further studies are needed to verify this notion.

Certain videos from the medical advertisements and for profit-companies group refer patients to alternative treatment methods for ED. These include food supplements, herbal teas, ointments, and pills. The majority of these products are unlicensed and illegal commercial products. The patient that consumes these non-regulated products will likely suffer from severe medical consequences. It will be beneficial for YouTube to administer a self-audit mechanism, particularly for these types of videos. It has recently become possible for YouTube users to open "YouTube channels" where they can collect all the videos that they submit. This allows all the content uploaded by one user to be pooled and be visible to viewers on the same page. A patient that seeks information on any subject can do a single shot search and discover these channels to access numerous helpful content. This can be an excellent way for patients to access reliable sources of information. Therefore, it would be beneficial for national or international andrology associations to lead physicians in this regard.

To the best of our knowledge, this is the first study concerning this subject in the literature. However, our study has several limitations. Results from a single shot search were evaluated for the study. The view numbers and order of the videos constantly change. The numbers of likes, dislikes, and comments also change. This is due to the dynamic structure of YouTube. Only videos in English were included in the study. The research outcomes may be different for different localizations and languages. In addition, there is not a consensus regarding the scientific evaluation of visual contents. In this study, we utilized the common approaches from previous studies available in the literature.[9,10,12,14] The study does not evaluate the positive or negative effects of the videos on the patients.

CONCLUSION

ICI is widely used in the treatment of ED. YouTube can be a useful tool in allowing patients to reach the visual resources they require for education. Although nearly half of the videos contain misleading information, high-quality content is also available. The physicians' determining these contents and guiding patients will contribute to the treatment. Health professionals and andrology associations and organizations should be encouraged to upload YouTube videos or to start YouTube channels. This will enable patients to access more reliable and comprehensive content.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Emre Kandemir;* ***Design:*** *Metin Savun;* ***Control/Supervision:*** *Muammer Bozkurt;* ***Data Collection and/or Processing:*** *Emre Kandemir, Metin Savun;* ***Analysis and/or Interpretation:*** *Muammer Bozkurt, Metin Savun;* ***Literature Review:*** *Emre Kandemir, Muammer Bozkurt, Metin Savun;* ***Writing the Article:*** *Emre Kandemir, Metin Savun, Muammer Bozkurt;* ***Critical Review:*** *Muammer Bozkurt;* ***References and Fundings:*** *Emre Kandemir, Metin Savun.*

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