



Original Research / Orijinal Araştırma

Correct Information About Herpes Zoster Vaccination: Are YouTube Videos Sufficient? Herpes Zoster Aşılması Hakkında Doğru Bilgiye Ulaşmak: YouTube Videoları Yeterli mi?

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Abstract

Objective: This study aims to evaluate the reliability and accuracy of YouTube videos as an informational source regarding herpes zoster vaccination.

Methods: A search was conducted on YouTube using the keywords “herpes zoster vaccine,” “zoster vaccine brand name,” and “shingles vaccine” in English. The Video Power Index (VPI) was used to measure video popularity, the modified DISCERN scale was applied to assess video quality, and the Global Quality Scale (GQS) was utilized to evaluate reliability. Videos uploaded between 2017 and 2024 were included. Statistical analysis was performed by using IBM SPSS Statistics for Windows, Version 23.0.

Results: A total of 170 English-language videos related to herpes zoster vaccination on YouTube were analyzed. The mean VPI was 12.83, the mean GQS score was 2.91±0.94, and the mean M-DISCERN score was 3.16±1.41. According to the GQS, 30.6% of the videos were classified as low quality, 45.3% as moderate, and 24.1% as high quality. High-quality content was found in 51.6% of physician-produced videos, compared to 40% by non-physician professionals, and 5.7% by independent users. Statistically significant differences were observed between professionals and independent users ($p < 0.001$), but not between physicians and other health professionals ($p > 0.05$).

Conclusion: Although the majority of videos were produced by independent users, those created by healthcare professionals were of significantly higher quality. Immunization through vaccination is a crucial public health issue, and we advocate for more reliable video content in this domain.

Key words: social media, YouTube, Vaccine, Herpes Zoster Vaccine

Özet

Amaç: Herpes zoster aşılması hakkında YouTube videolarının bir bilgi kaynağı olarak ne kadar güvenilir ve doğru olduğunu değerlendirmektir.

Yöntem: YouTube sitesinde “herpes zoster aşısı,” “zoster aşısının ticari ismi” ve “zona aşısı” anahtar kelimelerle İngilizce dilinde arama yapılmıştır. Videoların popülerliğini ölçmek için Video Power Index (VPI) değeri, sağlık konusunda kalitesini değerlendirmek amacıyla modifiye DISCERN ölçeği, videoların güvenilirliğini değerlendirmek için Global Quality Scale (GQS) kullanılmıştır. 2017 ile 2024 yılları arasında yüklenmiş videolar çalışmaya dahil edilmiştir. İstatistiksel analiz için IBM SPSS Statistics for Windows, Version 23.0 kullanılmıştır.

Bulgular: Çalışmamızda YouTube’da İngilizce dilinde yayınlanan toplam 170 video incelendi. Videoların, VPI ortalaması 12,83 olarak, GQS puanı ortalaması 2,91±0,94, M-DISCERN puanı ortalaması 3,16±1,41 olarak saptanmıştır. GQS’e göre videoların %30,6’sının düşük, %45,3’ünün orta, %24,1’inin yüksek kalitede olduğu belirlenmiştir. Videolar içerik üreticilerine göre analiz edildiğinde, doktor kullanıcılar tarafınca hazırlanan videoların %51,6’sının, doktor dışı sağlık profesyonelleri tarafınca hazırlanan videoların %40’ının yüksek kalitede olduğu bağımsız İnternet kullanıcıları tarafınca hazırlanan videoların %5,7’sinin yüksek kalitede olduğu belirlenmiştir. Doktorlar ve bağımsız kullanıcılar ile sağlık profesyonelleri ve bağımsız kullanıcılar arasında anlamlı fark saptanırken ($p < 0,001$), doktorlar ile diğer sağlık profesyonelleri arasında fark bulunmamıştır ($p > 0,05$).

Sonuç: Çalışmamızda bağımsız kullanıcılar tarafınca üretilen videoların daha yüksek oranda olduğu; ancak sağlık profesyonelleri tarafınca üretilen videoların daha yüksek kaliteye sahip olduğu belirlenmiştir. Aşı ile bağışıklama, toplum sağlığı için önemli bir konu olup bu alanda daha güvenilir video içeriklerinin bulunması gerektiğini savunmaktayız.

Anahtar sözcükler: Sosyal medya, Youtube, Aşı, Herpes Zoster aşısı

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Introduction

Varicella zoster virus (VZV) is a double-stranded DNA virus that remains latent in the cranial nerve ganglia or dorsal root ganglia following a primary varicella (chickenpox) infection. Herpes zoster occurs when the virus reactivates due to immune system suppression, leading to radicular pain and typically unilateral vesicular eruptions in a single dermatome.¹ Serious complications include postherpetic neuralgia, transverse myelitis, Bell's palsy, hearing loss, and herpes zoster ophthalmicus.² Herpes zoster is a disease with an increasing incidence in individuals aged 50 and older, with the lifetime risk reaching up to 50% by the age of 85.² Complications associated with herpes zoster contribute to significant morbidity, particularly in immunocompromised and elderly individuals. In addition to early diagnosis and treatment, vaccination plays a critical role in prevention.

There are two vaccines available against herpes zoster: the live attenuated zoster vaccine derived from the "Oka" strain and the recombinant zoster vaccine, which contains the VZV glycoprotein E combined with the AS01 adjuvant, demonstrating superior efficacy in recent studies.² The live zoster vaccine, administered as a single subcutaneous dose in the upper arm, was approved by the U.S. Food and Drug Administration (FDA) in 2006. The recombinant zoster vaccine (RZV) was approved by the FDA in 2017 for individuals aged 50 and older, as well as immunocompromised individuals, and is administered intramuscularly in two doses, spaced 2 to 6 months apart.²

Recently, Internet-based social media platforms have become increasingly popular sources of health-related information.³ YouTube, a widely used online platform where users can freely upload and access videos, hosts a wide range of health-related content.⁴ However, the absence of a regulatory mechanism to ensure the accuracy and quality of videos on YouTube raises concerns among public health authorities and healthcare professionals.⁵

A review of the literature revealed that no prior studies have assessed the quality and accuracy of YouTube videos regarding herpes zoster vaccination. This study aims to evaluate the effectiveness, reliability, and accuracy of YouTube videos as an informational resource on herpes zoster vaccination.

Methods

Data Collection

A YouTube search was performed using the keywords "herpes zoster vaccine," "zoster vaccine brand name", and "shingles vaccine." Videos were initially filtered by relevance and then sorted by upload date in descending order. Of the 328 videos reviewed, non-English, duplicate, and non-eligible content were excluded. A total of 170 unique videos meeting the inclusion criteria were analyzed. Two family medicine specialists independently evaluated the videos using a double-blind method over 15 days. Inter-rater reliability was assessed using Cohen's Kappa, yielding a coefficient of 0.78 ($\kappa = 0.78$), indicating substantial agreement.

For each video, the following data were recorded: duration (in seconds), view count, number of likes and comments, and upload date. Videos were categorized by source (doctors, other health professionals, independent Internet users) and by target audience (public or healthcare professionals). Content was evaluated for the presence of information on herpes zoster, complications, risk groups (particularly those aged ≥ 50), vaccine types and dosages, and potential adverse effects.

Assessment Tools

Video popularity was measured by using the Video Power Index (VPI).⁶ Video quality and reliability were assessed using two validated instruments: the Modified DISCERN and the Global Quality Scale (GQS). M-DISCERN is a five-item tool measuring the reliability and accuracy of health-related video content; higher scores indicate greater reliability.^{5,6} GQS is a five-point Likert scale assessing overall quality, reliability, and usefulness, with scores of 1–2 considered "low", 3 "moderate", and 4–5 "high quality".^{5,7,8}

Statistical Analysis

All analyses were conducted by using IBM SPSS Statistics for Windows, Version 23.0. Descriptive data were presented as frequencies (%), medians, and ranges. Normality was assessed by using the Kolmogorov–Smirnov test. Non-normally distributed variables were analyzed with the Kruskal–Wallis and Mann–Whitney U tests. Categorical data were compared by using the chi-square test. Associations between quality scores (GQS and M-DISCERN) and video characteristics were evaluated using the Kruskal–Wallis test and Pearson correlation. A p-value < 0.05 was considered statistically significant.

Ethical Considerations

As the study involved no human or animal subjects and used publicly available data, ethical approval was not required. The study adhered to the principles of the Declaration of Helsinki.

Results

In this study, a total of 170 English-language videos published on YouTube were analyzed. The average video duration was 6.45 ± 0.44 minutes, and the mean view count of 14,810.71. Video durations ranged from 1 to 102 minutes. The average number of likes was 289.85, while the number of dislikes was minimal, indicating that most content was positively received. Additionally, the average number of comments was 71.85, ranging from 0 and 3151.

Regarding video popularity, the mean VPI was determined to be 12.83. The mean GQS score was 2.91 ± 0.94 , while the mean M-DISCERN score was 3.16 ± 1.41 . According to the GQS score, 30.6% of the videos were classified as low quality, 45.3% as moderate, and 24.1% as high quality. When examining the GQS subcategories, 44.7% of the videos lacked coverage of important content. According to the M-DISCERN scale, 31.7% of the videos scored 3 points, while 7.1% received a score of 0.

An analysis of upload dates revealed that the highest proportion of videos (28.8%) were published in 2024. When videos were grouped by quality and year, 2024 was found to contain the highest percentage (30.17%) of moderate- and high-quality videos according to the GQS. Additionally, 41% of the videos that scored 4 points and 25% of those that scored 5 points on the M-DISCERN scale were from 2024.

Content analysis showed that 80.6% of the videos included general information about herpes zoster, 39.4% discussed complications, and 41.2% addressed risk groups. Furthermore, 71.7% included information on vaccine recommendations for individuals aged 50 years and older. Different vaccine types were discussed in 52.4% of the videos, 49.4% included dosage information, and 30.6% addressed potential vaccine-related adverse effects.

An analysis of the accounts sharing the videos revealed that the lowest proportion of content creators were doctors (18.2%), while the highest proportion consisted of independent internet users (53%). Additionally, 85.3% of the videos were determined to have been created to inform the public (Table 1).

Table 1: Distributions of Video Upload Sources and Target Audiences (Descriptive statistics and frequency tables were used)

| Category | Status | Frequency (n) | Percentage (%) |
|---------------------------|--------------------------------|---------------|----------------|
| Account sharing the video | Doctor | 31 | 18.2 |
| | Other healthcare professionals | 49 | 28.8 |
| | Independent Internet users | 90 | 53.0 |
| | Total | 170 | 100.0 |
| Target audience | Doctor | 10 | 5.9 |
| | Other healthcare professionals | 15 | 8.8 |
| | General public | 145 | 85.3 |
| | Total | 170 | 100.0 |

Furthermore, 75.9% of the included videos were classified as moderate or high quality. Among those produced by physicians, 51.6% were high quality; 40% of those by other healthcare professionals were high quality, and only 5.7% of those produced by independent users were rated as high quality.

An analysis of the M-DISCERN scale subcategories revealed that the highest proportion (81.1%) corresponded to the first item, which assesses whether the information is easily understandable to a general audience in a short period. In contrast, the lowest proportion (34.11%) was associated with the fourth item, which evaluates whether the video provides additional sources of information for patients or viewers.

Statistical analysis revealed that videos containing general disease information and complications were significantly associated with higher GQS and M-DISCERN scores ($p = 0.000$). Similarly, longer video duration was positively associated with quality scores ($p = 0.000$), whereas view count was not statistically significant ($p = 0.064$). A strong correlation was observed between GQS and M-DISCERN scores ($p < 0.01$). A weak but marginally significant correlation was found between VPI and GQS (Spearman's $\rho = 0.49$, $p = 0.086$), while a strong and significant correlation was identified between VPI and view count (Spearman's $\rho = 0.72$, $p < 0.01$), indicating that video performance is closely linked to popularity.

Upon analyzing the popularity of the videos about their quality, a positive correlation at the 10% significance level was found between VPI and GQS ($p < 0.10$). This finding indicates a statistically significant relationship between the Video Power Index and the Global Quality Scale score. A strong and significant correlation was also detected between the number of views and VPI ($p < 0.01$), suggesting that the video performance index is directly linked to the number of views, and videos with higher performance scores are viewed more frequently.

When the relationship between the M- M-DISCERN score, GQS score, and the target audience of the videos was analyzed, a significant difference was found in the scale scores between videos targeting doctors and those targeting the general public ($p = 0.001$). However, there was no significant difference in scale scores between videos targeting other healthcare professionals and those targeting the general public ($p > 0.05$). When analyzing the relationship between the M- DISCERN score and GQS score and the type of account sharing the videos, a

significant difference in scale scores was found between the "Doctor" and "Independent Internet users" groups ($p = 0.000$), as well as between "Other healthcare professionals" and "Independent Internet users" ($p = 0.000$). However, no significant difference was observed between the "Doctor" and "Other healthcare professionals" groups ($p > 0.05$). These results indicate that content produced by independent Internet users received lower scores on both the GQS and the M-DISCERN scale compared to the other two groups (Table 2).

Table 2: Relationship between the uploader, target audience, VPI, Global Quality Scale score, and Modified DISCERN Scale score (ANOVA analysis)

| Dependent Variable | Independent Variable | F(2,164) | P | Post-hoc Tests |
|--------------------|-----------------------|----------|--------|---|
| VPI | Intended audience | 0.05 | 0.950 | - |
| VPI | Account that uploaded | 2.54 | 0.082 | - |
| GQS Score | Account that uploaded | 32.04 | <0.001 | Doctors> Other healthcare professionals ($P < 0.001$) Other Healthcare professionals> Independent Internet users ($P < 0.001$) |
| M-DISCERN Score | Account that uploaded | 30.71 | <0.001 | Doctors> Other healthcare professionals ($P < 0.001$) Other healthcare professionals> Independent Internet Users ($P < .001$) |
| M- DISCERN Score | Intended audience | 4.75 | 0.010 | Doctors > Public ($P = 0.009$) |
| GQS Score | Intended audience | 7.10 | 0.001 | Doctors > Public ($P = 0.001$) |

It was evaluated using the Bonferroni and Tukey HSD tests. $p < 0.05$ indicates a significant difference

VPI: Video Power Index, GQS: Global Quality Scale

A strong relationship was found between the presence of information about the recommended risk groups for herpes zoster vaccination, especially the age group of 50 years and older, the types of herpes zoster vaccines, dosages, and potential side effects, and the videos GQS and M-DISCERN scores ($p = 0.000$).

Discussion

YouTube, a digital platform that is primarily based on visual and auditory media with a widespread global user base, is commonly used by individuals worldwide to access information in various fields. However, some content on the platform lacks scientific accuracy or rigor. In our study, we identified YouTube videos containing medical information about herpes zoster and vaccination as a method of immunization. Specifically, we observed that video content related to topics such as general disease information, complications, and vaccine types was more frequently shared. These videos were more likely to be classified as moderate or high quality according to the GQS, suggesting that including these subtopics can positively impact both GQS and M-DISCERN scores.

In our study, we used the VPI to evaluate video popularity. We found that the average VPI of the videos included in our study was higher than that in the study by Uz et al., and similar to the values found in the study by Genç et al. 6,9 Additionally, herpes zoster vaccination related video uploads peaked in 2024, which we believe reflects the growing awareness and interest in herpes zoster vaccination, particularly due to the aging population in developed countries.

Our results showed that moderate and high-quality videos were mostly produced by healthcare professionals, particularly doctors. Videos produced by doctors had the highest proportion of high-quality content, which supports findings from previous studies in the literature. 10,11,12 A substantial number of videos were aimed at educating the general public. We suggest that health-related videos targeted at the public should be created by doctors, other healthcare professionals, or authorized committees, who ensure the accuracy and quality of such content before uploading it to YouTube. This aligns with findings from other studies demonstrating that healthcare professionals generated content is generally more beneficial.^{13 14 15}

When we examined the M-DISCERN scale by its subcategories, we found that the percentage of videos mentioning additional information sources for patients or viewers, as well as addressing controversial or ambiguous topics related to herpes zoster vaccination, was lower than other questions. To address these gaps, we recommend that healthcare content creators include additional information sources in the video content or its description and prioritize controversial topics when creating videos. This approach would likely result in higher-quality health-related videos on YouTube.

Our study indicates that in recent years, there has been an increase in video content about herpes zoster vaccination, with a higher percentage of medium and high-quality videos in 2024. This suggests that herpes zoster vaccination has gained increasing importance in recent years, leading to greater societal awareness and, consequently, a growing need for information about herpes zoster vaccination. In light of these findings, we believe it is important

to produce healthier, more comprehensive content by appropriate individuals on social media platforms such as YouTube to further inform the public.

One limitation of our study is that it only analyzed content produced in English. Additionally, the cross-sectional study design presents another limitation of our research.

Conclusion

In our study, it was found that videos produced by independent users were more prevalent; however, videos produced by doctors and, followed by non-medical health professionals, had higher quality. We believe that there should be more videos produced by health professionals. Particularly, we observed an increase in content related to herpes zoster vaccination in recent years. This indicates that there is both awareness of herpes zoster vaccination in society and a need for information on the subject. In order for accurate, impartial, and reliable YouTube content to be published, it is necessary to develop a new artificial intelligence program and establish standards with a control mechanism. Vaccination and immunization are crucial topics for public health, and we advocate for the availability of more reliable video content in this area.

Ethical Approval Statement

Our study did not involve research on human or animal subjects, and the videos analyzed were obtained from a publicly accessible platform; therefore, ethics committee approval was not required. However, the study was conducted per the principles of the Declaration of Helsinki.

AI Usage Statement

Artificial intelligence-assisted translation tools were used during the process of translating the manuscript into English.

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The authors declare that no financial support or funding was received for this study.

Conflict of Interest

The authors declare that they have no conflict of interest in the study.

References

1. Cohen, J. I. Herpes zoster. *New England Journal of Medicine*, 2013.369(3), 255-263.
2. Türk Klinik Mikrobiyoloji ve Enfeksiyon Hastalıkları Derneği. Klimik Aşı Platformu, Zona aşısı.Erişim adresi:<https://asi.klimik.org.tr/asi/zona>. Accessed January 2, 2024.
3. Fox S, Purcell K. Chronic disease and the internet. Pew Internet & American Life Project, Washington, DC, March 2010, 2-4.
4. Madathil KC, Rivera-Rodriguez AJ, Greenstein JS, Gramopadhye AK. Healthcare information on YouTube: a systematic review. *Health informatics journal*, 2015; 21(3): 173- 94.
5. Singh AG, Singh S, Singh PP. YouTube for information on rheumatoid arthritis—a wakeup call? *J Rheumatol*. 2012;39(5):899–903
6. Yücel DL, Genç DH. Evaluation of Efficiency and Reliability of Youtube Videos on Cerebrospinal Fluid Leakage and Surgery. *KBB-Forum Elektronik Kulak Burun Boğaz Ve Baş Boyun Cerrahisi Derg*. 2023;22(3).
7. Bernard A, Langille M, Hughes S, et al. A systematic review of patient inflammatory bowel disease information resources on the World Wide Web. *Am J Gastroenterol*. 2007;102:2070-7.
8. Nestor PJ, Scheltens P, Hodges JR. Advances in the early detection of Alzheimer's disease. *Nat Med*. 2004;10:34-41.
9. Uz C, Umay E. YouTube as a Source of Information on Polymyalgia Rheumatica. *Fiz Tıp Ve Rehabil Bilim Derg*. 2023;26(2):174-181.
10. Friedman DB, Laditka JN, Hunter R, et al. Getting the message out about cognitive health: a cross-cultural comparison of older adults' media awareness and communication needs on how to maintain a healthy brain. *Gerontologist*. 2009;49(1):50-60.
11. Demirtas MS, Alici N. The reliability and quality of YouTube videos as a source of breath holding spell. *Ital J Pediatr*. 2024;50:8.
12. Kiliç Kamacı G, Özücü Atar M. YouTube as a Source of Education and Information About Microprocessor Knee Prostheses. *Fiz Tıp Ve Rehabil Bilim Derg*. 2024;27(3):185-91.
13. Erdoğan A, Beyoğlu MM, Çevik L, Beyoğlu E. Dijital Kaynak Youtube; Covid-19 Aşı Reddi Videolarının Değerlendirilmesi. *GEVHER NESİBE J Med Health Sci*. 02 Temmuz 2022;7(17):1-6.
14. Friedman DB, Laditka JN, Hunter R, et al. Getting the message out about cognitive health: a cross-cultural comparison of older adults' media awareness and communication needs on how to maintain a healthy brain. *Gerontologist*. 2009;49(1):50-60.
15. Kaşıkçı MT, Yıldırım S. Alzheimer Hastalığı Bilgilendirmesinde Kaynak Olarak YouTube Videolarının İncelenmesi. *Muş Sıtkı Koçman Üniversitesi Tıp Derg*. 28 Aralık 2021;8(3):215-9.