Evaluation of YouTube videos on HIV/AIDS: a critical analysis of content quality and reliability

Avaliação de vídeos do YouTube sobre HIV/AIDS: uma análise crítica da qualidade e da confiabilidade do conteúdo

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ABSTRACT

Introduction: HIV and AIDS remain as significant global health issues, with misinformation and stigma surrounding the diseases still being prevalent. Accurate and reliable information is crucial for promoting prevention, early detection, and effective management of the disease. YouTube has emerged as a popular platform for sharing and consuming health-related content, but the quality and reliability of its videos on various health topics have been questioned. **Objective:** This study aims to systematically review and evaluate the quality and reliability of YouTube videos on HIV/AIDS. **Methods:** We searched for videos on YouTube using two search terms, "HIV" and "AIDS," and evaluated the top 100 videos for each search term. We recorded video features such as length, likes, comments, views, and upload date. Two independent evaluators assessed the videos' quality and reliability using the Global Quality Scale and the modified DISCERN tool. We classified the videos into two groups based on the source that uploaded the video, professional and non-professional, and analyzed the data using statistical methods. **Results:** Of the 159 videos evaluated, the most common content categories were HIV transmission routes, basic information and definition of HIV, and HIV/AIDS activism and awareness. Non-professional videos tended to be shorter, but there were no significant differences in views, likes, and likes per day counts. Comments were significantly higher in non-professional videos. Professional videos had higher quality and reliability scores than non-professional videos. **Conclusion:** Accurate and reliable information on HIV/AIDS is critical for promoting prevention, early detection, and effective management of the disease. YouTube has the potential to disseminate this information, but the quality and reliability of its videos must be improved. Our study highlights the need to prioritize professional, high-quality, and reliable video content on HIV/AIDS on YouTube to improve the public health outcome.

Keywords: HIV. Acquired immunodeficiency syndrome. Health Literacy. Education..

RESUMO

Introdução: O HIV e a AIDS continuam a ser problemas significativos de saúde global, e a desinformação e o estigma em torno dessas doenças ainda prevalecem. Informações precisas e confiáveis são cruciais para promover a prevenção, a detecção precoce e o gerenciamento eficaz da doença. O YouTube surgiu como uma plataforma popular para compartilhar e consumir conteúdo relacionado à saúde, mas a qualidade e a confiabilidade de seus vídeos sobre vários tópicos de saúde têm sido questionadas. **Objetivo:** Este estudo tem como objetivo revisar e avaliar sistematicamente a qualidade e a confiabilidade dos vídeos do YouTube sobre HIV/AIDS. **Métodos:** Pesquisamos vídeos no YouTube usando dois termos de pesquisa, "HIV" e "AIDS", e avaliamos os cem principais vídeos para cada termo de pesquisa. Registramos os recursos do vídeo, como duração, curtidas, comentários, visualizações e data de *upload*. Dois avaliadores independentes avaliaram a qualidade e a confiabilidade dos vídeos usando a Escala de Qualidade Global e a ferramenta DISCERN modificada. Classificamos os vídeos em dois grupos com base na fonte que fez o upload do vídeo, profissional e não profissional, e analisamos os dados usando métodos estatísticos. **Resultados:** Dos 159 vídeos avaliados, as categorias de conteúdo mais comuns foram rotas de transmissão do HIV, informações básicas e definição de HIV e ativismo e conscientização sobre HIV/AIDS. Os vídeos não profissionais tenderam a ser mais curtos, mas não houve diferenças significativas nas contagens de visualizações, curtidas e curtidas por dia. Os comentários foram significativamente maiores nos vídeos não profissionais. Os vídeos profissionais tiveram pontuações de qualidade e confiabilidade mais altas do que os vídeos não profissionais. **Conclusão:** Informações precisas e confiáveis sobre HIV/AIDS são essenciais para promover a prevenção, a detecção precoce e o gerenciamento eficaz da doença. O YouTube tem o potencial de disseminar essas informações, mas a qualidade e a confiabilidade de seus vídeos devem ser aprimoradas. Nosso estudo destaca a necessidade de priorizar conteúdo de vídeo profissional, de alta qualidade e confiável sobre HIV/AIDS no YouTube para melhorar o resultado da saúde pública.

Palavras-chave: HIV. AIDS. Letramento em Saúde. Educação.

INTRODUCTION

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) continue to be significant global health issues, affecting millions of people worldwide[1]. Despite the advancements in antiretroviral therapy and greater understanding of the disease, misinformation and stigma surrounding HIV/AIDS persist[2]. It is crucial to disseminate accurate and reliable information about HIV/AIDS to promote prevention, early detection, and effective management of the disease[3].

The Internet has become a primary source of health information for many individuals[4]. In particular, YouTube has emerged as a popular platform for sharing and consuming health-related content[5]. However, the quality and reliability of YouTube videos on various health topics have been questioned, with many studies revealing substantial gaps in the accuracy and comprehensiveness of the information presented[6,7].

Given the critical role that accurate information plays in HIV/AIDS prevention and management, evaluating the quality and reliability of YouTube videos on this subject is essential. Previous research has analyzed YouTube content on various health topics, such as vaccination[8], diabetes[9], and cancer[10]. However, to our knowledge, limited research explicitly addresses the quality and reliability of YouTube videos on HIV/AIDS.

OBJECTIVE

This study aims to fill this gap by systematically reviewing and evaluating YouTube videos' content quality and reliability regarding

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HIV/AIDS. The findings of this research will help identify potential areas for improvement in disseminating accurate and reliable information on HIV/AIDS through this popular platform, ultimately contributing to better public health outcomes.

METHODS

In this descriptive study, we searched for videos on YouTube (www.youtube.com) about HIV/AIDS on March 15, 2022, using two different search terms: "HIV" and "AIDS." To ensure that the search results were not affected by previous search history or cookies, the browsing history and cookies were cleared before each search. The search results were ordered by relevance. The top 100 videos were ranked and recorded for each search term, as internet research shows that users tend to focus on the first pages of the results, with 97.5% of internet users looking only at the first ten pages[11].

We included the videos that were obtained in both searches once. For both search terms, 100 videos were listed. Forty-one videos found to be the same were eliminated. The remaining 159 videos were evaluated. Parameters such as video length, likes, comments, number of views, and video upload date were recorded. The videos were saved in a file, and two independent evaluators assessed their information quality and reliability. In cases of disagreement, the evaluators met and reached a consensus. We calculated the inter-rater reliability value. The values for daily views and likes were calculated according to the time between the video upload date and the date we retrieved the videos.

Measuring tools

1. Global Quality Scale (GQS): The GQS, designed by Bernard et al. [12], was used to assess the quality of the videos on the YouTube platform. The GQS score ranges from 1 to 5 points, with a score of 4 or 5 points considered high quality, 3 points intermediate quality, and 1 or 2 points low quality. Previous studies in the literature have applied this method[3,2].
2. Modified DISCERN tool: The modified DISCERN tool, adapted by Singh et al.[7], was used to assess the reliability of the videos. The DISCERN scale contains five items, with each "yes" response scoring 1 point, providing a total score ranging from 0 to 5 points.

Videos were evaluated in terms of quality and reliability according to the source that published the video (e.g., a doctor, news agency, etc.) and the target audience (health professionals or patients). All videos were classified into two groups according to the source who uploaded the video as professional and non-professional videos. Professional videos were uploaded by professional healthcare workers and legal health institutions, and non-professional videos included videos shared by patients, patient relatives, and news agencies

Statistical Analysis

The Statistical Package for the Social Sciences version 25 (SPSS IBM Corp., Armonk, NY, USA) program was used for statistical analysis. The normal distribution of the variables was analyzed by the Shapiro-Wilk test. Independent Student-t test was used to compare normally distributed variables, and Mann–Whitney U test was used to assess non-normally distributed data. Quantitative data are presented as mean±standard deviations. Categorical variables were compared using the χ^2 test. The data were analyzed at 95% confidence level, and $p<0.05$ was accepted as statistically significant.

RESULTS

The study aimed to evaluate the quality and reliability of the videos. **Table 1** shows video content distribution across different categories based on the analysis of 159 YouTube videos related to HIV/AIDS. It was found that the most common video contents were associated with HIV transmission routes (13.7%), basic information and definition of HIV (13.0%), and HIV/AIDS activism and awareness (13.0%). On the other hand, only a small proportion of videos were related to HIV research and developments (3.7%) and the social impacts of HIV (4.3%).

Table 2 provides more detailed results of the video features analysis. The results showed that non-professional videos tended to be shorter than professional videos. However, the two groups had no significant differences in views counts, likes counts, and likes per day counts. Comments counts were significantly higher in non-professional videos. Professional videos had higher quality and reliability scores than non-professional videos. The target audience varied among the video sources, with patient-focused videos being more common in non-profit and non-governmental organizations and YouTubers and content producers. Videos from health organizations and hospitals had the highest scores in quality and reliability. The United States had the highest number of videos (24.5%), followed by the United Kingdom (10.1%) and India (10.1%).

DISCUSSION

The findings of this study are in line with those from previous studies that have also reported educational and awareness-raising videos on HIV transmission routes, basic information and definition of HIV, and HIV/AIDS activism and awareness as the most common video contents[13,14]. These results underscore

Table 1. Distribution of the video contents.

Video contents	n (%)
Basic information and definition of HIV	21 (13.0)
Discovery and history of HIV and AIDS	0 (0)
Early and late signs of HIV/AIDS	20 (12.4)
HIV transmission routes	22 (13.7)
HIV tests	10 (6.2)
HIV prevention strategies	11 (6.8)
HIV treatment	13 (8.1)
HIV/AIDS activism and awareness	21 (13.0)
HIV and pregnancy	8 (5.0)
HIV and stigma	14 (8.7)
Living with HIV	20 (12.4)
HIV and LGBTQ+	7 (4.3)
Social impacts of HIV	7 (4.3)
HIV research and developments	6 (3.7)

Table 2. Detailed characteristics of YouTube videos Analysis of video features by category.

	Total (n=159)	Professional videos (n=106)	Non-professional videos (n=53)	p-value
Video length, (min), mean±SD	9.48±6.85	10.38±6.1	7.67±7.83	<0.001
Views counts, mean±SD	475059±314843	462263±315991	497753±316487	0.592
Views/day counts, mean±SD	604±1189	534.24±539.31	749.94±1924.3	0.284
Likes counts, mean±SD	2271±6061	1555±2228	3172±8934	0.534
Likes/day counts, mean±SD	2.66±8.56	1.96±4.59	3.84±13.3	0.192
Comments counts, mean±SD	295±275	288±209	301±374	0.025
Quality and reliability scores				
• GQS	3.41±1.23	4.02±0.6	2.1±1.21	<0.001
• DISCERN	3.31±1.28	4.03±0.6	1.89±1.0	<0.001
Taget audience				
• Healthcare Professionals n (%)	24 (15.1)	24 (22.6)	0 (0)	<0.001
• Patient n (%)	61 (38.4)	21 (19.8)	40 (75.5)	<0.001
• Both n (%)	74 (46.5)	61 (57.5)	13 (24.5)	<0.001
Video source				
• Health organisations and hospitals, n (%)	31 (19.5)	30 (28.3)	1 (1.9)	<0.001
• Research and training centres n (%)	3 (1.9)	3 (2.8)	0 (0)	0.216
• Non-profit and non-governmental organisations, n (%)	33 (20.8)	31 (29.2)	2 (3.8)	<0.001
• Government agencies, n (%)	5 (3.1)	5 (4.7)	0 (0)	0.108
• Doctors and health professionals, n (%)	33 (20.8)	33 (31.1)	0 (0)	<0.001
• Activists and life coaches, n (%)	21 (13.2)	0 (0)	21 (39.6)	<0.001
• Documentary filmmakers and journalists, n (%)	22 (13.8)	3 (2.8)	19 (35.8)	<0.001
• YouTubers and content producers, n (%)	11 (6.9)	1 (0.9)	10 (18.9)	<0.001
Country				
• USA, n (%)	39 (24.5)	27 (25.5)	12 (22.6)	0.696
• United Kingdom, n (%)	16 (10.1)	15 (14.2)	1 (1.9)	0.015
• India, n (%)	16 (10.1)	11 (10.4)	5 (9.4)	0.852
• Turkey, n (%)	16 (10.1)	10 (9.4)	6 (11.3)	0.709
• Canada, n (%)	12 (7.5)	10 (9.4)	2 (3.8)	0.203
• Australia, n (%)	14 (8.8)	12 (11.3)	2 (3.8)	0.113
• South Africa, n (%)	8 (5.0)	3 (2.8)	5 (9.4)	0.073
• Nigeria, n (%)	7 (4.4)	0 (0)	7 (13.2)	<0.001
• Brazil, n (%)	6 (3.8)	1 (0.9)	5 (9.4)	0.008
• Others, n (%)	25 (15.7)	17 (16.0)	8 (15.1)	0.878

Bold numbers are statistically significant values

the importance of leveraging the power of YouTube as a platform for disseminating accurate and reliable information on HIV/AIDS, promoting healthy behaviors, and reducing stigma related to the disease. However, the study also identified a gap in the availability of videos related to HIV research and developments and the social impacts of HIV. This highlights the need for more research-based educational videos to improve public knowledge about HIV/AIDS and to address the persistent myths and misconceptions surrounding the disease.

The differences observed between professional and non-professional videos regarding video features suggest that both types of videos can serve different purposes. Non-professional videos were more patient-oriented, shorter, and had more comments, while professional videos were longer and had higher quality and reliability scores. This finding indicates that non-professional videos could be a helpful tool for reaching and educating patients, while professional videos would be a better source of information for healthcare professionals.

The study also revealed that videos from health organizations and hospitals had the highest quality and reliability scores, followed by research and training centers. This emphasizes the crucial role that these institutions can play in promoting evidence-based educational videos on HIV/AIDS. However, non-profit and non-governmental organizations, YouTubers, and content producers focused on patient-oriented videos. These findings suggest that health organizations and hospitals could be more active in partnering with these entities to promote more comprehensive HIV/AIDS education and awareness campaigns.

Lastly, the study found that the majority of the videos on HIV/AIDS were from the United States, followed by the United Kingdom and India. This highlights the need for global efforts to promote HIV/AIDS education and awareness in low- and middle-income countries, where the disease burden is high[1,15]. With YouTube being accessible worldwide, it has the potential to play a significant role in reducing the global impact of HIV/AIDS.

Despite its contributions, the present study has several limitations. First, only English-language videos were included in the analysis, which may limit the generalizability of the findings to non-English-speaking populations. Second, the study only analyzed videos available on YouTube during a specific period, and the results may not reflect the current state of YouTube videos on HIV/AIDS. Third, the study did not assess the impact of the videos on knowledge, attitudes, or behaviors related to HIV/AIDS. Finally, the study only focused on the content quality and reliability of the videos, and did

not examine other aspects, such as video engagement or audience demographics. These limitations suggest that future research should include a broader range of videos from diverse populations, assess the impact of the videos, and consider additional factors that may influence the effectiveness of the videos in promoting HIV/AIDS education and awareness.

Strengths: The study reviews HIV/AIDS-related videos on YouTube, providing valuable insights into the content and effectiveness of these materials in promoting awareness and understanding. By employing a systematic, content analysis-based method, the study ensures a more reliable and in-depth evaluation of the videos. The findings can help health organizations, educators, and policymakers create more effective HIV/AIDS prevention and awareness campaigns tailored to the YouTube audience.

Limitation: The study focuses exclusively on YouTube, which might not capture the entire landscape of online HIV/AIDS-related content. Other social media platforms or websites may have relevant materials not considered in this analysis. Time-sensitive data: The findings are subject to change as new videos are uploaded or removed from YouTube, which may affect the overall representation of HIV/AIDS-related content on the platform. Subjectivity in content analysis: Despite using a systematic approach, the content analysis may still be influenced by the researchers' subjective interpretations, which could lead to potential bias in categorizing and evaluating the videos.

CONCLUSION

In conclusion, this study provides valuable insights into the content quality and reliability of YouTube videos on HIV/AIDS. The results of this study have important implications for public health and suggest the need for more research-based educational videos and for health organizations, hospitals, non-profit and non-governmental organizations, and content producers to work collaboratively to promote more comprehensive HIV/AIDS education and awareness campaigns on YouTube. Further research could investigate the effectiveness of different types of videos in changing health behaviors and attitudes towards HIV/AIDS and the impact of videos on the general public and healthcare professionals.

Approval by the Human Research Ethics Committee

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Conflict of interest

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