

Evaluation of the Quality and Reliability of Youtube Videos on Pelvic Pain in Pregnancy

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ABSTRACT

OBJECTIVES: Pelvic pain in pregnancy is a problem that cannot be underestimated. A growing number of people use social media to access health-related information. Like many people, pregnant women search YouTube for guidance on pelvic pain. However, the quality of the content of YouTube videos is controversial. In this study, we aimed to evaluate the quality and reliability of medical information on videos considering pelvic pain in pregnancy shared on YouTube.

STUDY DESIGN: In April 2024, this cross-sectional study was carried out with a search conducted on YouTube with “pelvic pain in pregnant women” and “pelvic pain in pregnancy” as keywords. From a total of 100 videos, following review and exclusion, the remaining 55 videos’ characteristics were recorded. The video’s reliability was evaluated by the DISCERN questionnaire, quality by the Global Quality Scale, and content accuracy by The Journal of the American Medical Association Benchmark Scoring System.

RESULTS: A total of 100 videos were analyzed, and 55 were included. Regarding the video sources, 12 were uploaded by physicians, 23 by non-physician healthcare professionals, and 20 by nonprofessionals (fitness trainers, pilates instructors, influencers, and patients sharing their personal experiences). There were no significant differences ($p>0.05$) among video sources in terms of descriptive characteristics. Among all analyzed videos, only those uploaded by physicians and non-physician healthcare professionals were of high quality, accounting for 22% of the total. There was a positive correlation between the DISCERN questionnaire, The Journal of the American Medical Association Score, and Global Quality Scale scores. All three of these scores were significantly higher in the videos uploaded by physicians and non-physician healthcare professionals than those in the nonprofessional group.

CONCLUSION: On the whole, the majority of videos available on YouTube may be of poor quality. Health professionals should be aware that YouTube videos do not contain comprehensive, sufficient, up-to-date, and accurate information for patients.

Keywords: Pelvic pain; pregnancy; Quality; YouTube

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Introduction

Most pregnant women experience pelvic pain during daily activities like walking, sitting, or standing. It is a common and serious problem with significant physical, psychological, and socioeconomic implications. Peripartum pelvic pain is thought to be a combination of ligament strain, hormonal impacts, muscular weakness, maternal weight gain, postural changes, and the weight of the fetus, which causes tension on the ligaments in the pelvis and lower spine. In addition to the physical discomfort, this pain often leads to significant psychological effects, including anxiety, depression, and stress, which may worsen the pain. Although this condition is believed to be reversible and self-limiting, it may continue in the postpartum period (1). The persistence of pain can result in sleep disturbances, reduced mobility, and difficulty performing daily activities, all of which can lower the quality of life. Diagnosis is made by a thorough history, clinical evaluation, examination based on the pain characteristics, and positive pain provocation tests. Other critical medical problems should be excluded.

Clinical guidelines emphasize a comprehensive, patient-centered approach to managing pelvic pain during pregnancy.

Conservative treatment options, such as patient education, physical therapy, exercises, transcutaneous electrical nerve stimulation, acupuncture, and pharmacotherapy, have been shown to provide significant benefits. These guidelines recommend combining non-invasive therapies like physical therapy and education with pharmacological interventions when necessary while prioritizing the safety of both the mother and fetus. Furthermore, individualized care plans that consider the severity of symptoms, the patient's medical history, and any contraindications are essential for ensuring effective treatment and safeguarding fetal well-being (2).

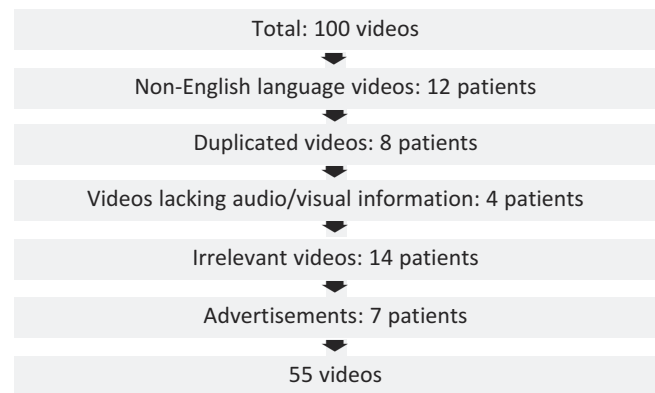
With the increasing accessibility of recording and data technologies, self-publishing video websites such as YouTube have grown in popularity globally. These websites provide a potential data source for users about different fields, anywhere and anytime (3). Easy and free-of-access, user-friendly interface that allows users to interact and socialize, people prefer YouTube day by day. YouTube's global users are expected to reach 2.85 billion by 2025 (4). Patients, including pregnant women, dealing with their illnesses are increasingly using online tools. Patients now commonly apply the internet to seek information and advice about healthcare. Seventy-five percent of these individuals made treatment decisions based on information gleaned from health-related internet searches (5). The nature of social media platforms lacks a regulatory system to control and review content reliability and quality. This leads to the spread of false or misleading data as well as accurate and useful information (6).

Several studies have analyzed the efficacy of YouTube videos about different medical and health issues. However, no published studies can be found investigating YouTube videos about pelvic pain in pregnancy. The primary aim of this study was to evaluate the quality of YouTube videos for pelvic pain in pregnancy.

Material and Method

This cross-sectional study was carried out in April 2024. To preserve objectivity and integrity, researchers cleared all internet browser cookies and search history before conducting an unbiased search in incognito mode. This approach prevented personalized results or past data from influencing the study's conclusions (7). Data were collected using the search terms "pelvic pain in pregnant women" and "pelvic pain in pregnancy" on YouTube (<https://www.youtube.be/>).

A total of 100 videos were reviewed and recorded. The videos were independently evaluated and analyzed by two expert doctors for their usefulness, quality, and reliability. When there was disagreement, a third consensus was obtained. The exclusion criteria included non-English language videos, duplicate videos, videos lacking audio or visual information, irrelevant videos, and advertisements. After applying the exclusion criteria, a total of 55 videos were included in the study.



The duration of the video (minutes), the time range from the date the video was uploaded (days), the number of views, the number of likes and dislikes, the number of comments, like ratio (LR) [$\text{like} / (\text{like} + \text{dislike}) * 100$], viewing rate (VR) (number of views/days), and video power index (VPI) [$(\text{like ratio} * \text{view ratio}) / 100$] were calculated and recorded. The following categories were used to classify the video sources: physicians, non-physician healthcare professionals (like physiotherapists and nurses), and nonprofessionals, such as fitness trainers, pilates instructors, influencers, and patients sharing their personal experiences.

The Journal of the American Medical Association (JAMA) Benchmark Scoring System is used to assess the health-related information obtained from online sources and videos. It evaluates the accuracy and reliability of videos based on four different subtitles: authorship, attribution, explanation, and currency. One point is given for each specified criterion in the video, resulting in a final score ranging from 0 to 4, and four points represent strong quality (8).

The DISCERN tool was used to evaluate the reliability and quality of videos. It consists of 16 total questions, each answered as "yes" (1 point) or "no" (0 points), with higher scores indicating higher video quality (9).

The Global Quality Scale (GQS) is a score consisting of five descriptions. On this scale, videos are classified according to their quality, information features, and flow. 1 (minimum score) points out the poorest quality and flow; 5 (maximum score) points out excellent quality and flow. 1 provides missing information to patients, while 5 provides very beneficial information for patients. Videos with a score of 1 or 2 are placed in the low-quality category; 3 are considered moderate quality; and 4 or 5 are considered high-quality on this scale (10).

The study involved no human or animal participants, and therefore, approval from an ethics committee was not required. Since there were no human participants, informed consent and a statement of compliance with the Declaration of Helsinki are not necessary.

Descriptive and inferential analyses were conducted using Jamovi 2.3.2. Shapiro-Wilk test was used to determine nor-

mality. For the descriptive statistic, mean ± standard deviation (SD) and median (minimum-maximum) were used. Kruskal-Wallis test was used for comparisons involving more than two groups with non-normally distributed data, followed by pairwise Mann-Whitney U tests with Bonferroni correction. For correlation analysis, Pearson's correlation test was applied to normally distributed data, while Spearman's correlation test was used for non-normally distributed data. Statistical significance was determined at a 95% confidence interval, with p<0.005 considered statistically significant.

Results

After searching on YouTube with the keywords "pelvic pain in pregnant women/pelvic pain in pregnancy," the first 100 videos were evaluated. 7 non-English videos, 9 duplicates, 5 advertisements, and 24 unrelated videos were excluded. A total of 55 remaining videos were analyzed. Regarding the video sources, 12 videos were uploaded by physicians, 23 videos were uploaded by non-physician healthcare professionals, and 20 videos were uploaded by nonprofessionals.

The mean duration of the videos was 8.55 minutes (min 0.22, max 28.16, SD: 7.42), video age was 1379 days (min 210, max 2947, SD: 741.68), the mean number of views was 137464.5 (min 90, max 2268169, SD: 340424.92), the mean of likes was 1584.71 (min 0, max 18000, SD: 3792.02), the mean of dislikes was 49.26 (min 0, max 1100, SD: 156.76), and the

mean of comments was 63.88 (min 0, max 707, SD: 123.73). The mean LR was 95.32 (min 0, max 100, SD: 13.88), the mean VR was 95.06 (min 0.11, max 1037.59, SD: 183.35), and the mean VPI was 91.64 (min 0, max 980, SD: 176.08) (Table I). No significant differences were observed (p>0.05) between video sources in terms of the parameters evaluated in Table I.

The average DISCERN score was 32.34 (min 15, max 54, SD: 10.05), the average JAMA score was 1.67 (min 1, max 3, SD: 0.66), and the GQS score was 2.23 (min 1, max 5, SD: 1.30) (Table II). While no significant difference was observed between physicians and non-physician healthcare professionals, videos that were uploaded by both physicians and non-physician healthcare professionals were found to have significantly higher DISCERN (p=0.001, p=0.001), JAMA (p=0.002, p<0.001), and GQS (p<0.001, p<0.001) scores than nonprofessionals' videos.

Table II: DISCERN, JAMA, GQS Scores

	Mean ± SD	Median (min-max)
DISCERN Score	32.34 ± 10.05	31 (15-54)
JAMA Score	1.67 ± 0.66	2 (1-3)
GQS Sore	2.23 ± 1.30	2 (1-5)

SD: Standard deviation, JAMA: The Journal of the American medical association, GQS: Global quali-ty scale

Figure 1 presents the percentages of video qualities based on video sources. A total of 22% of the videos were classified as high quality, all of which were uploaded by physicians and

Table I: Descriptive characteristics of the videos

	Mean ± SD	Median (min-max)
Video Duration (minute)	8.55 ± 7.42	6.00 (0.22- 28.16)
Video Age (day)	1379 ± 741.68	1200 (210- 2947)
Views	137464.50 ± 340424.92	36528 (90- 2268169)
Likes	1584.71 ± 3792.02	424.50 (0- 19000)
Dislikes	49.26 ± 156.76	12 (0- 1100)
Comments	63.88 ± 123.73	28 (0-707)
Like Ratio	95.32 ± 13.88	98.22 (0-100)
Viewing ratio	95.06 ± 183.35	28.49 (0.11- 1037.59)
Video power index	91.64 ± 176.08	24.79 (0- 980)

SD: standard deviation

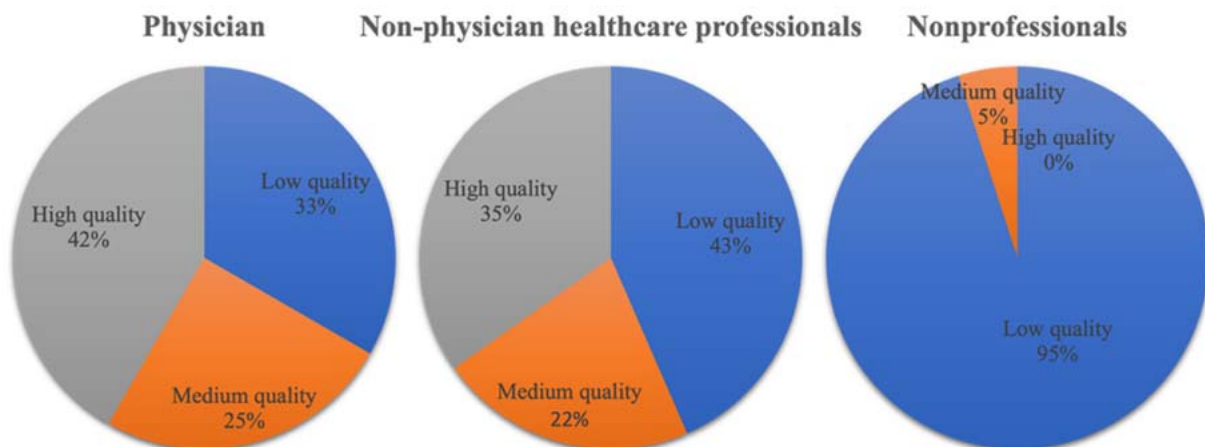


Figure 1: Percentages of video qualities of each group

non-physician healthcare professionals. In contrast, 62% of the videos were categorized as low quality, with 55% of these produced by nonprofessionals.

According to video quality, no differences were observed in video duration, age, views, likes, comments, VR, or VPI between groups. JAMA and DISCERN scores showed significant differences. In post hoc analysis, high-quality videos were observed greater JAMA scores than moderate- and low-quality groups. DISCERN scores between all three groups showed significant differences. Videos with higher quality levels had better DISCERN scores (Table III).

The results, according to the correlation analysis, showed

that there was a positive correlation between DISCERN, JAMA, and GQS scores. It will also find that videos long durations and more liked videos indicate higher DISCERNs scores (Table IV).

Discussion

With the advancement of technology, knowledge is now more easily accessible in every field. The expanding reach of the internet has led to an increase in searches for medical issues. A study found that 70% of Canadians looked up information on the internet about their health condition before visiting healthcare professionals (11).

Table III: Comparison of video parameters based on video quality

	Low Quality (n=34) Median(min-max)	Moderate Quality (n=9) Median(min-max)	High Quality (n=12) Median(min-max)	p
Video Duration (minu-te)	3.86 (0.22-28.16)	6 (1.39-19.33)	12.25 (1.22-19.23)	0.091
Video Age (days)	1231 (210-2947)	1260 (555-2536)	1118 (430-2947)	0.992
Views	41444 (90-660689)	42903 (611- 464267)	20476 (1507-2268169)	0.709
Likes	539 (0-12000)	141 (5-17000)	418 (15-19000)	0.609
Comments	29 (0-347)	23 (0-444)	15 (0-707)	0.817
Viewing ratio	46.77 (0.11-604.38)	19.77 (1.10-315.40)	28.3 (3.5-1037.59)	0.554
Video power index	44.84 (0.11-598.87)	19.56 (1.10-312.73)	27.79 (3.5 – 980.81)	0.431
JAMA Score	1 (1-3)	1 (1-2)	2 (1-3)	<0.001
DISCERN Score	27,5 (15-39)	36 (27-47)	49 (36-54)	<0.001

Table IV: Correlation analysis between video parameters and scoring systems

	p or r value	DISCERN Score	JAMA Score	GQS
DISCERN Score	r	*	0.343	0.743
	p		0.10	<0.001
JAMA Score	r	0.343	*	0.581
	p	0.010		<0.001
GQS Score	r	0.743	0.581	*
	p	<0.001	<0.001	
Video Duration (minute)	r	0.451	0.196	0.248
	p	0.001	0.153	0.068
Video Age (day)	r	-0.78	0.093	0.05
	p	0.574	0.499	0.719
Views	r	0.237	-0.007	0.52
	p	0.082	0.961	0.708
Likes	r	0.332	-0.22	-0.25
	p	0.016	0.875	0.859
Comments	r	0.303	0.103	0.28
	p	0.29	0.469	0.844
Like ratio	r	-0.011	-0.063	-0.014
	p	0.941	0.660	0.921
View ratio	r	0.259	-0.28	-0.92
	p	0.056	0.839	0.556

YouTube is an open-access video-sharing website that gains more users every day. It also has a lot of videos that provide information on medical illness prevention, causes, symptoms, and treatment. Misinformation or biased videos may be available on YouTube due to the wide range of sources available, a lack of guidelines, and inadequate regulation. Previous studies have assessed the reliability and accuracy of YouTube videos on disorders from various disciplines of medicine (12,13). However, no studies have been conducted to evaluate pelvic pain during pregnancy, which is a very common medical issue.

Pregnancy has long been a popular topic on the Internet, with primarily young pregnant women searching for information. In their study, Lagan et al. conducted a web-based survey of 613 women from 24 countries to reveal why and how pregnant women use the Internet as a source of health information and its general impact on decision-making processes. Almost all women (97%) used the Internet both to access a variety of pregnancy-related information and for pregnancy-related social networking and support. Almost 94 percent of women used the Internet to complement information already provided by health professionals. Dissatisfaction with the information provided by healthcare professionals (48.6%) and lack of time to ask health professionals questions (46.5%) were two main reasons for this situation. Although 68.7% of women thought online information could be wrong, 83% used it to influence their pregnancy decision-making (14). All healthcare professionals need to be aware that online information must be understandable, informative, and scientifically validated. This makes it easier for patients who have access to accurate information to cope with their illness.

To our knowledge, this is the first study to evaluate the content, quality, and reliability of YouTube videos about pelvic pain in pregnancy. Pelvic pain in pregnancy is a trendy topic on YouTube. In our study, the number of views was also high, and no difference was observed between the groups in terms of the number of views. Although pregnant women could find many videos with pelvic pain causes, symptoms, and treatment options, it was found that the best-quality videos were produced by healthcare professionals. It is similar to other studies evaluating the quality of health information on YouTube (15,16). People searching on YouTube should always consider video sources.

In this study, we analyzed videos on YouTube based on their quality level (as assessed by the total GQS) and found that the majority were of low quality. In a study, Birch et al. evaluated the quality, content, and reliability of YouTube videos about gestational diabetes. Similar to our study, they found that the majority of videos (76%) were categorized as low quality (17). In another study, Zengin et al. found that 40.1% of YouTube videos on musculoskeletal ultrasonography had low quality (18). Unlike our study, In Altun et al.

study, which aimed to investigate the reliability, sufficiency, and accuracy of YouTube videos about complex regional pain syndrome, 67% of the videos were found to be of high or intermediate quality (19). One of the reasons may be the diversity of the contents of videos. These results might also have been impacted by the year the study was conducted and the number of videos viewed.

In the present study, we observed many videos primarily focused on relieving pain without explaining the underlying cause. Karataş et al. found that while analyzing videos about back pain in pregnancy, including self-care strategies like exercises, stretching, and massage, few videos highlighted entire information about treatment options. They mentioned the importance of pregnant women making decisions about their health care by knowing all treatment options, including medication and physical therapy, as well as self-care strategies (20). The video contents should be more balanced and refer to various components of pelvic pain during pregnancy.

In this study, higher-quality videos have higher JAMA and DISCERN scores. This could be attributed to these sources adhering to evidence-based practices and prioritizing accuracy and reliability in their presentations. The length of the videos, age, views, likes, comments, VR, and VPI did not differ between the groups based on video quality. Ozcan et al. studied the reliability and quality of plantar fasciitis-related YouTube videos. Similar to our study, they found higher-quality videos more reliable (21). In another study, Zengin et al., analyzing the quality of information on YouTube videos about the side effects of biologic therapy, found that there was no significant difference between the low-quality, intermediate-quality, and high-quality groups in terms of the number of views, VPI scores, and number of likes (22). The duration of the videos, together with the number of views, likes, and comments, do not guarantee that the video content provides reliable, accurate, and quality information. It's crucial to note that the number of views or likes on a YouTube video does not indicate its quality.

In a study conducted in an online survey among 139 patients (99.3% female) and 153 healthcare professionals in obstetrics and gynecology in the Netherlands, social media users for health-related reasons were asked about their motives. Non-users for health-related reasons were asked why they do not use social media and the barriers. Patients' three main motives for health-related social media use were: increasing knowledge, social support, and exchanging advice. Health professionals' main reason for using YouTube was to enhance their knowledge. Non-users were concerned about their privacy and the unreliability of information on social media. The main reason why health professionals did not use social media was that they believed it was inefficient. Both barriers and motives were different for patients and professionals (23).

To enhance the quality of YouTube videos, healthcare pro-

professionals should embrace the latest technological advancements and create free-access, well-designed, and visually appealing videos aimed at improving patient education. Additionally, physicians should remind patients to critically evaluate the sources of these videos. This ensures that patients can more easily access accurate and reliable information.

The YouTube platform can utilize advanced artificial intelligence to implement stricter acceptance criteria and screening systems to combat harmful and misleading content. Furthermore, big data analytics can help the platform selectively promote high-quality videos and evidence-based information to target audiences. Lastly, it is essential to improve the public's ability to obtain and use internet-based knowledge dialectically, which involves striving to understand the underlying mechanisms of diseases and their scientific management.

Patient education campaigns can integrate with YouTube by creating evidence-based, engaging content in collaboration with healthcare professionals. Dedicated channels managed by trusted organizations can address common concerns, offer multilingual options, and ensure privacy through stringent data protection measures, ultimately improving public access to accurate information.

The most significant aspect of this study is that it represents the first evaluation of the quality and reliability of YouTube videos on pelvic pain during pregnancy. The primary limitation of this study is the inclusion of only English-language videos, which may restrict the generalizability of the findings, as non-English videos could potentially yield different results. This limitation also overlooks potential cultural or regional differences in the content, as health communication styles, cultural values, and public health priorities may vary significantly across regions. Additionally, the analysis was limited to a single platform (YouTube), further constraining the applicability of the findings to broader contexts or other social media platforms. Another limitation is the use of the GQS, which relies on subjective assessments for evaluating video quality, potentially introducing bias into the evaluation process. Future studies should consider including non-English videos and exploring other platforms to provide a more comprehensive understanding of the topic.

Conclusion

Despite the low quality and comprehensiveness of YouTube videos for pregnant people with pelvic pain, women prefer to turn to the Internet for health information. Pregnant women must have access to accurate, confident, and detailed information. Indeed, YouTube can be expanded as a useful platform, including both a diagnostic tool for medical disorders and an educational resource for patients to exchange information while they cope with their illnesses, considering its impact on healthcare choices. Healthcare professionals should play a key role in this.

Ethics approval and consent to participate: The study involved no human or animal participants, and therefore, approval from an ethics committee was not required. Since there were no human participants, informed consent and a statement of compliance with the Declaration of Helsinki are not necessary.

Availability of data and materials: The data supporting this study is available through the corresponding author upon reasonable request.

Competing interests: The authors declare that they have no competing interests.

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Authors' contributions: EUK and YK proposed the presented idea. EUK and AUS designed the study. EUK and YK collected the data. EUK performed the data analysis. EUK and YK drafted the initial version of the manuscript. AUS contributed to the manuscript review and editing. All authors read and approved the final version of the manuscript.

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