

Content and Quality of Online Videos About Ostomy Pouch Changes: A Descriptive Study

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ABSTRACT

BACKGROUND: Many health-related videos are available online. One type of health-related video is related to stoma pouch change. However, a system to evaluate the quality and content of these videos is lacking. **PURPOSE:** To evaluate the content and quality of YouTube videos on colostomy pouch change. **METHODS:** A descriptive study was carried out by searching for videos on March 15, 2021, using the key words “colostomy care,” “colostomy bag/pouch change,” and “ostomy bag/pouch change.” A 5-point Global Quality Scale was used to evaluate the quality of the videos, and a 10-point scale was used to evaluate the content. The videos were classified as “useful” or “useless” according to their content and quality scores. **RESULTS:** A total of 128 videos were found; 94 videos met the criteria and were included in the study. The content of the 94 videos was examined by 2 independent researchers. The overall content score of the videos was 8.24 ± 1.56 , and the overall quality score was 3.14 ± 0.97 . A total of 66 (70.21%) videos were useful, and 28 (29.79%) videos were useless. The mean scores of useful videos for content (9.09 ± 0.83) and the average Global Quality Scale scores (3.53 ± 0.76) were significantly higher than those of useless videos (6.17 ± 0.90 and 2.25 ± 0.75 , respectively; $P < .05$). The results showed that 57.6% of the useful videos were uploaded by universities, professional organizations, and health care professionals, and 67.9% of the useless videos were uploaded by patients; the difference was statistically significant ($P < .05$). **CONCLUSIONS:** Results indicated that the majority of online videos evaluated were accurate. Most of these videos were uploaded by universities, professional organizations, health care professionals, or medical advertisers. Although there were many limitations to this study, the authors suggest that health care professionals can direct their patients to these sources after hospital discharge. However, future studies are needed.

KEY WORDS: ostomy, ostomy pouch, descriptive study, online videos

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POTENTIAL CONFLICTS OF INTEREST: none disclosed

A colostomy is a surgical procedure in which the normal intestinal passage is interrupted with an artificial opening in the colon.^{1,2} Major health problems that lead to the need for a temporary or permanent colostomy include colon or rectal cancer, chronic inflammatory bowel diseases, diverticular disease, irradiation damage, and trauma.^{1–3} A colostomy and its care greatly affect the daily life of the patient. The colostomy pouch system consists of a flexible adhesive and solid skin barrier that is placed at the stoma and an odor-proof pouch to collect stool.^{4–6}

The individual with ostomy must acquire new skills while adapting to body image changes and new conditions.⁴ Hence, the patient needs comprehensive and individualized special care and training.^{2,5,7} The insufficient number of medical specialists in ostomy care is an important factor that reduces the quality of care.⁸ In 2018, a prospective study⁹ was conducted in Australia to determine the time taken for patients to achieve the ability to perform self-care for their new stoma. In the study, 29% of 107 patients with ileostomy and colostomy were

unable to perform self-care at discharge.⁹ In 2018, a cross-sectional study¹⁰ was conducted to identify ostomy self-care challenges among 177 patients who had a stoma for more than 5 years and were registered in northern California and the Northwest (Oregon and southwest Washington state).¹⁰ In this study, 63% of the individuals who survived long-term rectal cancer had at least 1 ostomy self-care problem, and 31% of the patients had 2 or more.¹⁰ Additionally, lack of ostomy care support or insufficient education may prevent individuals

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from developing the ability to manage their stoma, which may lead to depression and/or social isolation and increased health care needs and expenses.^{9,11}

Patients and/or their caregivers may use the internet for learning and developing skills related to their condition.^{12,13} YouTube is a leading and extensively used website for distributing health-related information and is well-known for hosting self-help videos. It was founded in 2005 as a video-sharing platform,¹⁴ and it is a highly visited website that contains many videos related to patient education. Thus, it has great potential to provide easy access to health information; however, the accuracy and usefulness of the information are undetermined.^{13,15,16}

While some studies reported that YouTube videos were a crucial source of information for patients, others reported that these videos were insufficient.^{13,15,17} These studies were related to rheumatoid arthritis,¹⁷ methotrexate injection,¹² subcutaneous antitumor necrosis factor (TNF) agent injection,¹⁵ glioblastoma therapy,¹⁸ breast self-examination,¹⁶ oral leukoplakia,¹⁴ clean intermittent catheterization,¹³ and pelvic floor muscle exercise.¹⁹ We found 2 studies that examined YouTube videos on ostomy-related patient education. These videos discussed colostomy and ileostomy care.^{20,21} Basim and Argun²⁰ analyzed 84 videos on patient education related to ostomy on June 20, 2020. They found that 58.33% of these videos were useful.²⁰ Azer et al.²¹ analyzed videos published before May 18, 2019, on colostomy and ileostomy. They found that 35% of the 149 videos included in the study were educationally useful.²¹

The current study included only videos on colostomy care. This was done because there might be differences between the information provided for colostomy and ileostomy care. The authors analyzed and determined the content and quality of YouTube videos on colostomy pouch change regarding their usefulness in providing educational information.

METHODS

Research design and setting. A descriptive study was performed to analyze the content and quality of YouTube videos on colostomy pouch change. All videos posted to YouTube (youtube.com) until March 15, 2021, that resulted from searching using the key words “colostomy care,” “colostomy bag/pouch change,” and “ostomy bag/pouch change” in English were viewed (N = 128).

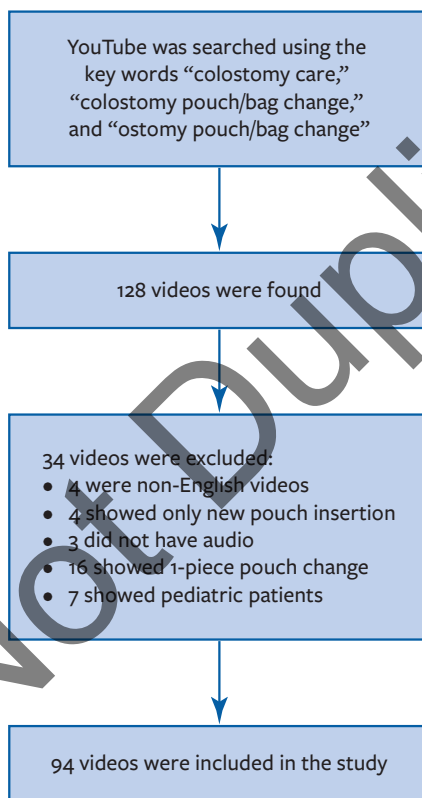


Figure. Study Protocol

Inclusion criteria. The analysis included audio and English-language videos on changing a double-piece colostomy pouch for adults. A total of 94 videos met the inclusion criteria and were analyzed.

Exclusion criteria. A total of 34 videos were excluded for the following reasons: non-English videos (n = 4), showing only new pouch insertion (n = 4), no audio (n = 3), 1-piece pouch change

(n = 16), and pouch change among pediatric patients (n = 7) (Figure).

Data collection tools. The YouTube Videos Characteristics Form was used for each video, which included information about the time elapsed since the video was uploaded; the length of the video; the total number of views; the number of likes, dislikes, and comments; and the source (ie, institutions, professionals, websites, patients) of the video.

Content. The content of the videos was evaluated with a 10-item Colostomy Pouch Change Skill Form prepared by the researchers, following the recommendations of the Wound, Ostomy, and Continence Nurses Society⁴ and the United Ostomy Associations of America New Ostomy Patient Guide.²² A score was given for each step described in the video. The scores in the Colostomy Pouch Change Skill Form ranged from 0 to 10. Higher scores indicated better video content. The created skill form was submitted for evaluation to 8 instructors, who were experts in the field, and was then finalized. The expert opinions' Content Validity Index score was 0.921.

Quality. The quality of the videos was assessed with a 5-point Global Quality Score (GQS) developed by Bernard et al.²³ The form consists of 5 scores: 1 indicates poor quality, 2 indicates low quality and limited use, 3 indicates somewhat useful quality, 4 indicates useful quality, and 5 indicates useful and excellent quality. During the evaluation, the element that best expressed the quality of the video was selected.²³

Data collection. The content and quality of the videos included in the study were evaluated by an enterostomy nurse with 10 years of experience in the stoma therapy unit and a physician with experience in colostomy surgery. The analyzed videos were classified as “useful” or “useless” according to information transfer. The content score and quality score were used to determine whether the videos were “useful.” Videos with average and above-average scores were included in the “useful” video category, while those

with below-average scores were included in the “useless” video category.

Ethical considerations. The study was approved by the Ethics Committee of Artvin Çoruh University (decision number 2020/87). The information of the institutions and individuals who uploaded the videos was kept confidential.

Statistical analysis. Data were analyzed using the Statistical Package for Social Sciences, Version 22.0. Categorical variables were presented as numbers and percentages. The compatibility between the independent observers was determined using the Kappa value. The distribution of the variables was measured by the Kolmogorov-Smirnov test. The differences between and among groups were evaluated by performing analysis of variance and were considered statistically significant at $P < .05$.

RESULTS

The content of the 94 videos included in the study was examined by 2 independent health care professionals. The Kappa value between the observers was 0.97. The total period of availability of the videos on YouTube was 49.35 ± 29.54 months, the length of videos was 9.63 ± 5.68 minutes, the number of views was $241,264.79 \pm 724,349.051$, the number of likes was 1476.69 ± 4088.378 , the number of dislikes was 153.61 ± 419.591 , and the number of comments was 180.64 ± 626.984 . When the videos were analyzed for content and quality, the mean score of content was 8.24 ± 1.56 , and the average GQS was 3.14 ± 0.97 . It was found that 42.6% of the videos were medium quality. Additionally, 46.8% of the videos were uploaded by patients (Table 1).

The correct colostomy pouch change steps were evaluated (Table 2). The results showed that the highest correct application step (100%) was, “The skin barrier is fully adhered to the skin. Since the heat of your hand will make the skin barrier stick better, run your finger over the skin barrier for 30 seconds. When the skin barrier reaches body temperature, it will soften and become more easily malleable.” The lowest correct application

Table 1. Characteristics of the Videos (N = 94)

Characteristics	Mean $\pm$ SD	Min to max
Duration on YouTube (months)	49.35 ± 29.54	7–112
Video length (minutes)	9.63 ± 5.68	1.58–30.21
Total views	$241,264.79 \pm 724,349.051$	485–4,132,854
Likes	1476.69 ± 4088.378	0–33,727
Dislikes	153.61 ± 419.591	0–1978
Comments	180.64 ± 626.984	0–4423
Content score	8.24 ± 1.56	4–10
GQS score	3.14 ± 0.97	1–5
1–2 (Poor/low quality)	22 (23.4%)	
3 (Medium quality)	40 (42.6%)	
4–5 (Good/excellent quality)	32 (34%)	
Source of upload, n (%)		
Universities/professional organizations/health care professionals	32 (34.1%)	
Medical advertisements	8 (8.5%)	
Independent health information websites	10 (10.6%)	
Patients	44 (46.8%)	

Abbreviations: SD, standard deviation; Min, minimum; Max, maximum; GQS, Global Quality Scale.

step (33%) was, “Check that the pouch is firmly seated in the skin barrier by pulling gently on yourself.”

When the characteristics of the videos were examined, 66 (70.21%) videos were evaluated as useful, and 28 (29.79%) videos were useless (Table 3). The average period of availability of useful videos on YouTube was 54.51 ± 30.87 months, the length of the videos was 10.38 ± 5.80 minutes, the number of views was $306,330.42 \pm 8512.372$, the number of likes was 1799.26 ± 481.027 , the number of dislikes was 192.55 ± 493.576 , and the number of comments

was 22.78 ± 7.421 . The total period of availability on YouTube, the length of the video, total views, and the number of dislikes differed significantly between useful and useless videos ($P < .05$) (Table 3). Regarding the content and quality of the videos, the mean score of useful videos was 9.09 ± 0.83 , and the average GQS was 3.53 ± 0.76 , which was significantly higher than those of useless videos (6.17 ± 0.90 and 2.25 ± 0.75 , respectively; $P < .05$). The results indicated that 57.6% of the videos containing useful information were uploaded by universities, associations, health care

Table 2. Evaluation of Content Relating to Colostomy Pouch Change Steps (N = 94)

Content	%
Prepare a comfortable environment, put your materials in an easily accessible place, and wear your gloves.	85.1%
Separate the skin barrier from top to bottom from the skin. If you have difficulty detaching the skin barrier from the skin, wet the area around the skin barrier with warm water to make it easier to detach. Put the old pouch in the dirty pouch.	91.5%
If there is fecal waste on the stoma, remove it with toilet paper. Wipe the area around the stoma with a cloth or gauze soaked in warm water. Dry around the stoma thoroughly. The dry circumference of the stoma allows the skin barrier to adhere more easily to the skin. Throw away the dirty glove.	89.4%
Measure the diameter of your stoma with a stoma ruler. The appropriate size is a 2-mm gap between the edge of the pouch and the stoma.	70.2%
Cut your skin barrier with curved scissors according to the measured diameter of your stoma.	86.2%
Put on a new glove. Remove the paper on the sticky side of the skin barrier you cut out, and apply a tooth-paste-like “paste” inside. The paste is an obstacle between the stoma and the pouch and prevents leakage. The task of the paste is to protect the skin around the stoma directly. The paste prevents feces from contaminating the skin.	80.9%
The skin barrier is fully adhered to the skin. Since the heat of your hand will make the skin barrier stick better, run your finger over the skin barrier for 30 seconds. When the skin barrier reaches body temperature, it will soften and become more easily malleable.	100%
Place the stoma pouch that fits your skin barrier into the skin barrier in a circular motion starting from one point. The system is locked by snapping the skin barrier with the barrier in the mouth of the pouch.	95.7%
After placing the pouch, attach the clamp of the pouch.	92.6%
Check that the pouch is firmly seated in the skin barrier by pulling gently on yourself.	33.0%
Tool Used: Global Quality Scale	
1—Poor quality, poor flow, most information missing, not helpful for patients	
2—Generally poor, some information is given but has limited use for patients	
3—Medium 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	

Table 3. Analysis of Video Characteristics as “Useful” or “Useless” (N = 94)

Characteristics	Useful videos (n = 66)	Useless videos (n = 28)	Independent samples t test	P value
Duration on YouTube (months)	54.51 ± 30.87	37.17 ± 22.18	2.688	.009
Video length (minutes)	10.38 ± 5.80	7.87 ± 5.08	1.985	.041
Total views	306,330.42 ± 8512.372	87,895.79 ± 1675.577	1.996	.040
Likes	1799.26 ± 481.027	716.36 ± 10.075	1.741	.086
Dislikes	53.14 ± 81.54	192.55 ± 493.576	2.223	.029
Comments	22.78 ± 7.421	69.25 ± 99.51	1.701	.093
GQS score	3.53 ± 0.76	2.25 ± 0.75	7.431	.000
Content score	9.09 ± 0.83	6.17 ± 0.90	15.069	.000
Source of upload, n (%)				
Universities/professional organizations/ health care professionals	30 (46.9)	2 (6.7)	Chi-square test = 23.257 ^a	.000
Medical advertisements	6 (9.4)	2 (6.7)		
Independent health information websites	3 (4.6)	7 (23.3)		
Patients	25 (39.1)	19 (63.3)		

Abbreviations: GQS, Global Quality Scale.

^aMedical advertisements and universities/professional organizations/health care professionals were combined and analyzed.

professionals, or medical companies, and 63.3% of the videos containing misleading information were uploaded by patients; the difference was statistically significant ($P < .001$).

When the characteristics of the sources that uploaded the videos were examined, it was found that the videos uploaded by universities, professional organizations, and health care professionals had the highest mean scores of content and GQS (9.25 ± 0.91 and 3.87 ± 0.70 , respectively) and the difference was statistically significant ($P < .05$). The total period of availability on

YouTube (59.96 ± 27.13 months) was the highest for the videos uploaded by universities, professional organizations, and health care professionals, and the difference was statistically significant ($P < .05$; Table 4).

DISCUSSION

YouTube is an easily accessible and easy-to-use video-sharing platform with billions of page views per day since its establishment in 2005.¹⁷ YouTube comprises 95% of all internet users and has great potential to provide easy access to health information.^{13,15,16} However, given

the limited assessment of the quality of the information by consumers, there is a risk of useless information being spread.^{12,17} Studies from around the world have reported very few videos on colostomy care.

Currently, with technological advancements, the internet has become an important and popular source of health information.^{13,15} The National Health Interview Study reported that 43.55% of adults in the United States used the internet to search for health information in 2011.¹⁵ According to the findings of the current study, many people watched

YouTube videos to learn more about colostomy pouch change or for other reasons, and individuals sought help to learn about and develop skills for changing colostomy pouches.

Unreliable information, especially in training videos for skill-building, may mislead patients and cause undesirable results because of incorrect or incomplete application.^{13,24} Thus, it is important to analyze the quality and accuracy of videos on YouTube. To the best of the authors' knowledge, there have been 2 studies published on this subject.^{21,22} One of the studies analyzed the content, reliability, and quality of 84 videos on ileostomy and colostomy. The results showed that 58.33% of these videos were useful. The content and quality scores of useful videos were significantly higher than those of useless videos.²¹ In the other study on ileostomy and colostomy,

149 videos were analyzed. Most of these videos were not useful and were unsuitable for guiding patients.²² The results of the current study might differ from those of the previous studies because the samples were not similar and the time of analysis of the videos was different.

When studies on different subjects were examined, 54.9% of the videos on rheumatoid arthritis, 51.4% of the videos on Sjögren syndrome, 50% of the videos on subcutaneous anti-TNF agent injection, and 64% of the videos on clean intermittent catheterization were found to be useful.^{13,15,17,25} In contrast, Esen et al¹⁶ found that 37.9% of the videos on breast self-examination were useful and 62% were useless. The results of this study showed that useful videos had higher content and quality scores. Of the 94 videos examined in the current study, 66 (70.21%) were useful and

28 (29.79%) were useless; the content and quality scores of useful videos were found to be significantly higher.

When the characteristics of useful and useless videos were examined, the length and duration of the videos on YouTube were found to be higher for useful videos, and the number of dislikes was higher for useless videos. The content and quality scores of useful videos were also higher. These results were similar to those of a study by Basim and Argun.²¹ The results were also partly similar to those of a study by Azer et al.²² Moreover, the current results were similar to those of the studies that examined training videos on rheumatoid arthritis,¹⁷ subcutaneous anti-TNF agent injections,¹⁵ and clean interval catheterization applications posted on YouTube.¹³

Most of the useful videos were uploaded by universities, professional

Table 4. Analysis of Videos by Upload Source (N = 94)

Characteristics	Universities/ professional organizations/ health care professionals (n = 32)	Medical advertisements (n = 8)	Independent health information websites (n = 10)	Patients (n = 44)	Test	P value
Content score	9.25 ± 0.91	8.50 ± 1.77	6.80 ± 1.54	7.75 ± 1.52	F = 11.855 ^a	.000
GQS score	3.87 ± 0.70	3.37 ± 1.06	2.50 ± 0.70	2.72 ± 0.81	F = 15.536	.000
Total view	217,667.88 ± 721,236.42	576,839.50 ± 140,379.36	113,295.00 ± 259,173.05	226,502.09 ± 632,064.64	F = 0.687	.562
Video length (minutes)	8.85 ± 4.32	8.87 ± 3.38	6.46 ± 3.70	11.06 ± 6.84	F = 2.303	.082
Duration on YouTube (months)	59.96 ± 27.13	41.75 ± 31.86	31.40 ± 22.36	47.09 ± 30.19	F = 3.062	.032
Likes	764.00 ± 2477.35	2798.00 ± 4568.83	1236.00 ± 1402.19	1809.48 ± 5204.50	F = 0.705	.552
Dislikes	92.03 ± 341.35	314.63 ± 661.93	102.60 ± 118.38	180.70 ± 462.06	F = 0.726	.539
Comments	6.31 ± 9.01	17.00 ± 20.65	125.80 ± 144.78	349.64 ± 887.79	F = 2.177	.096

Abbreviations: GQS, Global Quality Scale.

^aF = analysis of variance.

organizations, and health care professionals, and 67.9% of the useless videos were uploaded by patients. The study by Basim and Argun,²¹ in which ostomy-related patient education videos were analyzed, found that most of the useful videos were uploaded to YouTube by health care professionals. This finding, which was in line with the results of other studies that analyzed training videos on rheumatoid arthritis,¹⁷ breast self-examination,¹⁶ and subcutaneous anti-TNF agent injection,¹⁵ emphasized the importance of professional authorities taking up more roles and responsibilities to increase the number of accurate, high-quality, and useful videos on colostomy pouch change.

LIMITATIONS

This study had several limitations. To evaluate the content of the videos, the authors created a checklist following established guidelines. Applications only for the same ostomy type were evaluated for convenience and ease of analysis. Additionally, the scale used to evaluate the quality of the videos was based on the information present in the videos. Therefore, different types of ostomy were not included. The results and inferences of this study were restricted to colostomy videos only.

The YouTube videos on colostomy pouch change examined in this study were limited to those videos that were available and accessible only in English as of March 2021. YouTube is a dynamic video platform that constantly changes according to the popularity and time when the video is uploaded. Search results may vary over time. Also, the algorithm of YouTube search can affect search results based on geographic location. Similarly, because users can filter the results, a different filter might yield significantly different results.

The videos were classified as useful or useless according to the criteria set by the researchers. Another important limitation of this study was that only 2 health care professionals evaluated the videos, and the results were obtained only after the evaluation. This might

significantly affect the validity of the results. Future studies can increase the number of samples by using more key words in different languages.

CONCLUSION

This descriptive study evaluated the content and quality of online videos about ostomy pouch changes. The majority of videos were accurate, and most videos were uploaded by universities, professional societies, or health care professionals. Based on these findings, the authors suggest that health care professionals can direct patients and caregivers to these online sources to obtain accurate information during the postoperative period. ■

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