Evaluation of YouTube Videos about Isotretinoin as Treatment of Acne Vulgaris

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Background: YouTube is one of the most popular video-sharing websites in Korea, but incorrect or biased information is not properly regulated. Acne is common in adolescents and young adults who are familiar with YouTube. Thus, misleading information about isotretinoin in YouTube videos could distort the perception of treatment.

Objective: We evaluated the quality of information about isotretinoin in YouTube videos.

Methods: The keywords searched on YouTube Korea on July 1, 2020 were: isotretinoin, Roaccutane, and Isotinone. The DISCERN tool was used to evaluate the reliability and quality of information, and eight items were used to evaluate scientific accuracy and comprehensiveness: mechanism, indications, dose regimen, contraindications, side effects, blood tests, drug interactions, and pregnancy-related issues.

Results: The number of videos searched was 728. After excluding duplicate or inappropriate videos, 164 videos were analyzed. In the DISCERN tool, the mean overall quality score was 2.24 on a 5-point scale from 1 to 5. The mean score in the 8-issue-criteria, a 3-point scale from 0 to 2, was 0.61. Particularly, indications, blood tests, and drug interactions were poorly addressed in YouTube videos. Medical personnel offer better video quality than non-medical personnel. However, no significant difference in quality existed between the videos of dermatologists and those of other medical personnel. The quality score was not correlated with the popularity of the video.

Conclusion: YouTube videos covering isotretinoin showed poor overall quality. Content quality did not have a significant correlation with popularity, so incorrect information could be propagated on YouTube.

Keywords: Acne vulgaris, Isotretinoin, Social media

INTRODUCTION

Isotretinoin is known as the most effective treatment for acne, which inhibits increased sebum secretion, follicular hyperkeratosis, colonization of Cutibacterium acnes, and inflammatory reactions. However, it is associated with common side effects, such as dryness of the lips and skin, and serious side effects such as teratogenicity. In addition, there is some debate on the relationship between isotretinoin and hair loss or depression. Therefore, there is a negative perception of isotretinoin.

YouTube is an online video offering service (over the top, OTT) owned by Google, which was launched in Korea in 2008. According to a domestic survey, more than 70% of people in their 10s and 20s use OTT services, and YouTube has the highest utilization rate of 76.9% among video service sites. Although the purpose of watching videos varies, 37.7% of users use video services to search for information. However, YouTube has many misleading videos and false information videos aimed at attracting users’ attention, without any proper regulation on them.

Considering that acne is a common skin disease observed in 85% of adolescents, and YouTube usage rates are very high, false information uploaded on YouTube is expected to distort perceptions of acne treatment. In fact, about 36% of acne patients...
receive information about treatment through the Internet\(^7\), with a number of patients having incorrect knowledge of acne\(^8\).

Therefore, the authors identified the status of YouTube videos on isotretinoin in Korea and evaluated the quality of the information.

**MATERIALS AND METHODS**

**Search term selection**

Since isotretinoin is better known as a product name in Korea, we identified which names were popularly used for searching on YouTube. For this, a big data analysis tool called Google Trends was used to set up search terms for video collection. It provides a relative search volume for each word on YouTube throughout the specific period, but if the number of searches is less than a minimal level, the search volume will not be identified. Among the drug names, *Roaccutane*\(^®\) (Hoffman-La Roche, Basle, Switzerland), *Isotinone*\(^®\) (Hanmi, Seoul, Korea), *Pimple*\(^®\) (TheU, Seoul, Korea), and *Trein*\(^®\) (Genu, Seoul, Korea) were found to have significant search history in Korean, but *Pimple*\(^®\) and *Trein*\(^®\) were excluded because they were determined by search history of homonym. Thus, three search terms were set: Isotretinoin, *Roaccutane*\(^®\) and *Isotinone*\(^®\).

**Video collection**

On July 1, 2020, the video was collected by searching for ‘*Roaccutane*\(^®\)’, ‘*Isotinone*\(^®\)’, and ‘*Isotretinoin*’ in Korean. We collected all of the confirmed videos. Over the next two days, the upload date, the length of the video, the number of views, likes, dislikes, comments of each video, and the number of channel subscribers were collected. The period from the upload date to the collection date was defined as the posting period, and the number of views divided by the posting period was defined as mean daily views. Duplicate videos were excluded, and videos unrelated to isotretinoin were excluded after watching the videos.

**Evaluation of videos**

The videos were classified as a group of medical personnel (MP) and non-medical personnel (non-MP) by the subject providing the information, and the MP group was divided into a group of dermatologists and other MP. Videos were divided into educational, commercial, and personal experience sharing purpose judged on the basis of the overall content, and divided into neutral, positive or negative according to the overall attitude of evaluating isotretinoin as an acne treatment in the video.

The DISCERN questionnaire was used to assess the reliability and quality of information in the video. DISCERN assesses the quality of health information with respect to the reliability and quality of information about a treatment option, whose reliability, validity, and consistency among evaluators have already been established\(^9,10\). It consists of a total of 16 questions with eight questions assessing the reliability of information, seven questions assessing the quality of information on treatment methods, and one assessing the overall quality. Each question was evaluated on a five-point scale from 1 point (not fully satisfied) to 5 points (completely satisfied) according to the degree of satisfaction of the assessment criteria (Table 1).

However, DISCERN measures the reliability of information, such as the clarity and balance of evidence, and has the disadvantage that the evaluation of scientific quality and accuracy may be limited\(^10\). Therefore, to assess whether it contains accurate information about isotretinoin and whether it includes important things, we added an assessment of the eight categories of drug mechanisms, indications, dose regimen, contraindications, side effects, blood tests, drug interactions, and pregnancy-related issues. Each item was scored from 0 points (referring only to irrelevant or incorrect content), 1 point (partially covered or partially inaccurate), and 2 points (fully covered and only realistic) (Table 2). The final score was obtained from the average value of all items.

Prior to the analysis of the videos, the two authors arranged the contents to be addressed to achieve good quality for each item in advance. If the judgment was ambiguous in the analysis, we decided through sufficient discussion.

**Statistical analysis**

All statistical analyses were conducted using the SPSS (PASW statistics 25; IBM Corp, Armonk, NY, USA). The mean score were compared between the groups using an independent t-test. Variance analysis was used to compare the scores of the assessment items according to the overall status of the videos. The number of views in the high-quality and low-quality groups was compared using the Wilcoxon rank-sum test. A p-value less than 0.05, was determined to be statistically significant. This study was deemed exempt from review by the Inje University Ilsan Paik Hospital Institutional Review Board (IRB No. ISPAIK 2020-10-040).
Table 1. DISCERN questionnaire

| Questions                                                                 |
|---------------------------------------------------------------------------|
| Section 1. Is the publication reliable?                                   |
| 1. Are the aims clear?                                                   |
| 2. Does it achieve its aims?                                              |
| 3. Is it relevant?                                                       |
| 4. Is it clear what sources of information were used to compile the publication (other than the author or producer)? |
| 5. Is it clear when the information used or reported in the publication was produced? |
| 6. Is it balanced and unbiased?                                           |
| 7. Does it provide details of additional sources of support and information? |
| 8. Does it refer to areas of uncertainty?                                 |
| Section 2. How good is the quality of information on treatment choices?   |
| 9. Does it describe how each treatment works?                             |
| 10. Does it describe the benefits of each treatment?                      |
| 11. Does it describe the risks of each treatment?                        |
| 12. Does it describe what would happen if no treatment is used?           |
| 13. Does it describe how the treatment choices affect overall quality of life? |
| 14. Is it clear that there may be more than one possible treatment choice? |
| 15. Does it provide support for shared decision-making?                   |
| Section 3. Overall rating of the publication                              |
| 16. Based on the answers to all of the above questions, rate the overall quality of the publication as a source of information on treatment choices |

Table 2. Accuracy and comprehensiveness assessment questionnaire

| Questions                                                                 |
|---------------------------------------------------------------------------|
| 1. Does it describe the mechanism in which isotretinoin acts on acne properly? |
| 2. Does it describe the indications of isotretinoin properly?              |
| 3. Does it describe the dose regimen of isotretinoin properly?            |
| 4. Does it describe the contraindications of isotretinoin properly?       |
| 5. Does it describe the complications of isotretinoin properly?           |
| 6. Does it describe the need for the blood tests during treatment properly? |
| 7. Does it describe the drug interactions properly?                       |
| 8. Does it describe the RMP (risk management program) of isotretinoin and problems related to pregnancy and teratogenicity properly? |

**RESULTS**

**General characteristics of YouTube videos on isotretinoin**

The results of the search were as follows: 256 videos were found with Isotretinoin, 266 videos with Roaccutane®, and 206 videos with Isotinone®. After excluding 253 duplicated videos, a total of 475 videos were identified. Among them, 311 videos unrelated to isotretinoin were excluded, and a total of 164 videos were analyzed.

The general characteristics of the videos are presented in Table 3. The number of videos posted on a yearly basis showed an increasing trend from 2013 to 2019. The average length of a video was 589 seconds (9.8 minutes), and the content of isotretinoin within the video was occurred for an average of 216 seconds (3.6 minutes). The number of views varied from 25 to 890,136, and the total number of views was 5,141,162. The mean number of likes, dislikes, and comments were 366, 8, and 85, respectively. There were three videos that could not
identify the number of likes and dislikes, and five videos that did not identify the number of comments. The number of videos was the highest in the group for educational purposes (61.0%), followed by personal experience sharing purposes (37.2%) and commercial purposes (1.8%).

When classified by the subject providing information in the video, 72 videos (43.9%) were provided by MP and 92 (56.1%) by non-MP. Among the MP group, dermatologists provided 37 videos (22.6%), non-dermatologic doctors 16 (9.8%), pharmacists 10 (6.1%), and oriental doctors 9 (5.5%). Among the non-MP group, non-specific individuals provided 76 (46.3%), media organizations 6 (3.7%), skin-care related workers 4 (2.4%), government agencies 3 (1.8%), and other organizations 3 (1.8%).

### Evaluation of reliability and quality of information

The reliability and quality of the video information evaluated by DISCERN are shown in Table 4. The mean overall quality score of the videos was 2.24 points. For each item, the highest score was observed in the “Risk of the treatment” category of 4.36 points, followed by “Benefits of the treatment” with 2.74 points, “Unbiased” with 2.62 points, and “Method of action” with 2.43 points. In most categories, the score was found to be less than “not serious but potentially significant defects” (3 points), indicating major defects in overall reliability and quality assessment. In particular, they scored close to “severe or extensive defects” (1 point) in the topics “Source of information,” “Data update,” and “Effect of no treatment.”

### Evaluation of accuracy and comprehensiveness

The scores evaluated in eight categories for accuracy and comprehensiveness of the videos are shown in Table 4. The mean final score was 0.61 points, which was lower than 1 point (partially covered or partially inaccurate). The “Side effects” item scored the highest with 1.45 points, followed by “Mechanism” (0.91 points) and “Pregnancy-related issues” (0.73 points). Most items scored less than one point. Items of “Indications” (0.29 points), “Blood tests” (0.27 points), and “Drug interactions” (0.10 points) were found to be particularly low.

### Differences in characteristics of videos by subjects

The results of the analysis comparing the videos of the MP group and those of the non-MP group are shown in Table 4 and 5. General characteristics, such as the length of the video, number of views, and channel subscribers, did not show significant differences between the two groups. In the MP group, educational videos (98.6%) accounted for the majority, while in the non-MP group, personal experience sharing videos (66.3%) were more than educational videos (31.5%) and commercial videos (2.2%). In the MP group, isotretinoin was mostly rated neutrally (44.4%), while in the non-MP group, it was mostly rated negatively (43.5%).

In the reliability and information quality assessment using DISCERN, the “Overall quality” score was significantly higher in the MP group (2.63 points) than in the non-MP group (1.93 point; p<0.001). By item, the items “Clear aim,”

| Table 3. Descriptive characteristics of videos |
|-----------------------------------------------|
| Characteristic | Total (n=164) |
|----------------|--------------|
| **Year of posting** | |
| 2013 | 1 (0.6) |
| 2015 | 3 (1.8) |
| 2016 | 3 (1.8) |
| 2017 | 10 (6.1) |
| 2018 | 29 (17.7) |
| 2019 | 80 (48.8) |
| 2020 | 38 (23.2) |
| **Subject** | |
| Dermatologists | 37 (22.6) |
| Non-dermatologic | 16 (9.8) |
| **Doctors** | |
| Pharmacists | 10 (6.1) |
| Oriental doctors | 9 (5.5) |
| Skin-care related workers | 4 (2.4) |
| Ordinary people | 76 (46.3) |
| Media organizations | 6 (3.7) |
| Government agencies | 3 (1.8) |
| Other organizations | 3 (1.8) |
| **Purpose** | |
| Educational | 100 (61.0) |
| Personal experience | 61 (37.2) |
| Commercial | 3 (1.8) |
| **Stance** | |
| Positive | 53 (32.3) |
| Negative | 56 (34.1) |
| Neutral | 55 (33.5) |

Values are presented as number (%).
"Aim achieved," “Relevant information,” “Unbiased,” “Method of action,” “Other possible treatment choice,” and “Support for shared decision-making” scored higher in the MP group (p<0.05). The items “Mechanisms,” “Indications,” “Contraindications,” “Blood tests,” “Drug interactions,” and “Pregnancy-related issues” scored significantly higher in the MP group. The difference in scores between the two groups was the largest in the item “Pregnancy-related issues” (0.49), followed by “Mechanisms” (0.48).

Table 4. Comparison of reliability and quality of information evaluated by DISCERN and accuracy and comprehensiveness by eight question items

| Item                                | All (n=164) | Medical vs. non-medical personnel | Dermatologists vs. other medical personnel |
|-------------------------------------|-------------|-----------------------------------|-------------------------------------------|
|                                     |             | Medical (n=72) | Non-MP (n=92) | p-value | DER (n=37) | Other (n=35) | p-value |
| Clear aim                           | 1.65        | 1.78 | 1.55 | 0.042* | 1.70 | 1.86 | 0.389 |
| Aim achieved                        | 1.43        | 1.69 | 1.22 | 0.044* | 1.70 | 1.69 | 0.965 |
| Relevant information                | 2.38        | 2.71 | 2.12 | <0.001* | 2.76 | 2.66 | 0.581 |
| Source of information               | 1.12        | 1.21 | 1.05 | 0.070 | 1.30 | 1.11 | 0.259 |
| Data update                         | 1.08        | 1.13 | 1.04 | 0.212 | 1.22 | 1.03 | 0.108 |
| Balanced and unbiased               | 2.62        | 2.94 | 2.36 | <0.001* | 3.14 | 2.74 | 0.074 |
| Additional source of support        | 1.08        | 1.07 | 1.09 | 0.781 | 1.14 | 1.00 | 0.134 |
| Areas of uncertainty                | 2.24        | 2.39 | 2.12 | 0.088 | 2.51 | 2.26 | 0.287 |
| Method of action                    | 2.43        | 2.90 | 2.07 | <0.001* | 2.81 | 3.00 | 0.443 |
| Benefits of the treatment           | 2.74        | 2.72 | 2.75 | 0.874 | 3.08 | 2.34 | 0.004* |
| Risk of the treatment               | 4.36        | 4.47 | 4.27 | 0.224 | 4.27 | 4.69 | 0.099 |
| Effect of no treatment              | 1.12        | 1.17 | 1.09 | 0.263 | 1.22 | 1.11 | 0.419 |
| Effect on overall quality of life   | 1.51        | 1.51 | 1.51 | 0.982 | 1.68 | 1.34 | 0.083 |
| Other possible treatment choice     | 2.27        | 2.53 | 2.08 | 0.010* | 2.65 | 2.40 | 0.392 |
| Support for shared decision-making  | 1.62        | 1.85 | 1.45 | 0.003* | 2.00 | 1.69 | 0.132 |
| Overall quality of the publication  | 2.24        | 2.63 | 1.93 | <0.001* | 2.81 | 2.43 | 0.027* |
| Final score (mean)                  | 1.86        | 2.17 | 2.00 | <0.001* | 2.25 | 2.08 | 0.099 |

| Accuracy and comprehensiveness      |             | Medical vs. non-medical personnel | Dermatologists vs. other medical personnel |
| Mechanism                           | 0.91        | 1.18 | 0.70 | <0.001* | 1.19 | 1.17 | 0.907 |
| Indications                         | 0.29        | 0.49 | 0.13 | <0.001* | 0.62 | 0.34 | 0.069 |
| Dose regimen                        | 0.51        | 0.60 | 0.45 | 0.176 | 0.73 | 0.46 | 0.140 |
| Contraindications                   | 0.58        | 0.79 | 0.41 | 0.001* | 0.95 | 0.63 | 0.072 |
| Side effects                        | 1.45        | 1.51 | 1.40 | 0.268 | 1.43 | 1.60 | 0.277 |
| Blood tests                         | 0.27        | 0.39 | 0.18 | 0.026* | 0.57 | 0.20 | 0.017* |
| Drug interactions                   | 0.10        | 0.18 | 0.04 | 0.033* | 0.08 | 0.29 | 0.133 |
| Pregnancy-related issues            | 0.73        | 1.00 | 0.51 | <0.001* | 1.16 | 0.83 | 0.040* |
| Final score                         | 0.61        | 0.77 | 0.48 | <0.001* | 0.84 | 0.69 | 0.094 |

Values are presented as mean values of each questionnaire. MP: medical personnel group, Non-MP: non-medical personnel group, DER: dermatologist group, Other: medical personnel except dermatologists (non-dermatologic doctors, pharmacists, or oriental doctors). Calculation of p-values was done by independent samples t-test. Those in asterisks (*) are statistically significant (p<0.05).
The results of the analysis comparing the videos presented by dermatologists and other MP are shown in Table 4. In the assessment of reliability and information quality using DISCERN, the "Overall quality" score for the dermatologist group was 2.81, which was statistically significantly higher than 2.43 for the other MP (p=0.027). For each item, the score was significantly higher for the dermatologist group on the topic ‘Benefits of treatment’ (p=0.004). The average score of the dermatologist group tended to be high in the rest of the categories except “Method of action” and “Risk of treatment”, but no statistical significance was observed.

In the evaluation of accuracy and comprehensiveness, the scores of the items “Blood tests” (p=0.017) and “Pregnancy-related issues” (p=0.040) were significantly higher in the group of dermatologists. Except for the “Side effects,” the average score of the other items was higher in the dermatologist group, but no statistical significance was observed. The final score also showed no statistically significant differences.

### Relationship between the number of views and quality score

In the DISCERN and eight-item questions, the number of views was compared between those with higher scores than the normal level (3 points and 1 point, respectively) and those with lower scores. The average number of views in the low-DISCERN-score group (n=83, mean: 39,232, standard deviation [SD]: 119,497) tended to be higher than high-DISCERN-score group (n=81, mean: 16,696, SD: 63,777), but there was no statistically significant difference between the two groups (p=0.708). There was also no significant difference in the mean daily views (p=0.658). The high score group (n=80, mean: 37,529, SD: 81,008) in the evaluation of accuracy and comprehensiveness showed a higher tendency than low score group (n=84, mean: 25,461, SD: 108,793) in the number of views, but the differences were not statistically significant (p=0.423), and the mean daily views showed no significant differences (p=0.127).

In the correlation analysis between the quality evaluation score and the number of views, the number of views showed no correlation with the final score of DISCERN (r=–0.070, p=0.371), and the final score of accuracy and comprehensiveness (r=0.055, p=0.485). Also, the mean daily views did not correlate with the final score of DISCERN (r=–0.037, p=0.634), and the total score for accuracy and comprehensiveness (r=0.049, p=0.537). However, the number of channel subscribers was correlated with the number of views (r=0.296, p<0.001), and the mean daily views (r=0.329, p<0.001). Publication period did not correlate with the number of views (r=0.071, p=0.366).

### DISCUSSION

In the evaluation of the reliability and quality of information of YouTube videos using the DISCERN questionnaire, the majority of items scored below “not serious but potentially significant defects” (3 points), suggesting that the overall item has major defects. The results of evaluating the accuracy and
comprehensiveness of the content using eight items were also below the moderate quality level. There were also many videos which have low evidence or biased content. Among the low-quality videos, some videos only highlight positive aspects such as unconditional improvement during treatment or no possibility of relapse after stopping treatment, while others exaggerate rare side effects. Concerning the side effects, dryness of lips and skin was most frequently mentioned, while some argue that alopecia is a common and irreversible or exaggerates the correlation between isotretinoin and depression.

Isotretinoin deteriorates telogen stability and decreases the anagen process, which can lead to diffuse or localized hair loss during treatment. Isotretinoin-induced alopecia frequency is reported to be 8%–10%. However, hair parameters (total hair count, hair density, and telogen hair ratio) were not significantly decreased by conventional dose treatment. Although isotretinoin has been reported to increase the risk of depression and suicide attempt, it has been confirmed that it decreases the prevalence of depression.

In certain videos, it was recommended that oral antibiotics and isotretinoin be taken together to increase the effectiveness of acne treatment. As tetracycline is a common antibiotic prescribed to acne patients, the risk of taking tetracycline and isotretinoin is anticipated. However, there was a great lack of mention about the drug interactions of isotretinoin throughout the videos.

Although laboratory abnormalities are not common during isotretinoin treatment, it is recommended to monitor lipids, liver enzymes, and complete blood counts at baseline and after one to two months. However, the score of “laboratory tests” was 0.27 reflecting that most videos did not even mention the need for laboratory tests.

The reason the quality score of the video was generally low can be considered as follows: first, the problem of the informant. YouTube is an open platform that allows the audience to be a supplier at the same time. There are no specific qualifications or limitations in publishing videos. Therefore, any individual who lacks expertise can publish a video, and thus, incorrect knowledge or biased information based on personal experience may be shared easily. The score of “risk of treatment” in the DISCERN was high at 4.27 points in the non-MP group, indicating that most videos mentioned the possibility of side effects in the treatment. However, most videos merely covered the dryness of the skin and mucous membranes, and some complained of severe alopecia and depressive mood after treatment. Given the fact that the score of “blood tests” or “pregnancy-related contents” in the non-MP group was incredibly low, it can be seen that the various side effects of isotretinoin were not covered sufficiently and in depth. In addition, in most evaluation categories, the quality score of videos was significantly lower in the non-MP group than in the MP group. The quality of information decreased more when individuals without sufficient expertise were a provider.

While the majority of MP’s videos were produced for educational purposes, a number of non-MP’s videos were in the form of Vlogs, of which the contents take an individual’s daily life, which may contribute to the difference in quality scores. However, in the comparison between the quality scores of educational and personal experiences sharing videos in the non-MP group, no significant difference was observed. Thus, the videos could not fully cover appropriate information, not because it was a Vlog video, but because of other problem including the deficiency of the informant.

Second, there were limitations due to the general characteristics of YouTube. Even if the information provider has sufficient expertise, YouTube videos may not have the proper quality. Although, in this study, the videos of the MP group showed better quality than those of the non-MP, the score of the MP group was below the median level. In addition, within the MP group, the final score between the dermatologist group and other MP group (non-dermatologic doctors, pharmacists, and oriental doctors) did not show significant differences and the videos of the dermatologist group also scored a less than median level of quality. Thus, YouTube videos may not have adequate quality, even if the information provider has sufficient professional knowledge. YouTube videos are short in length, approximately 10 minutes with specific themes and directionality. In addition, the greater the content, the lower the viewer’s concentration, and it could be difficult to deal with a wide range of topics in depth.

In the number of views, there was no statistically significant difference between the MP group and the non-MP group, but it was numerically lower in the MP group. However, the number of channel subscriber was numerically higher in the MP group. Since various factors affect views, it is difficult to analyze the exact cause. The number of views may be increased due to more sensational thumbnail images or titles. Users may be more frequently exposed to certain videos by
YouTube algorithm. Through this, however, it can be inferred that YouTube users do not actively seek videos made by MP but are passively exposed first to non-experts’ videos more frequently.

The quality evaluation score and the number of views in the videos were not correlated. In addition, the group with a lower DISCERN score showed a tendency toward higher views. Although the number of views is determined by various factors, it was confirmed that the quality of the information contained in the videos did not have a decisive influence on the number of views. Therefore, to expose high-quality videos to the public, factors other than quality should be considered, and it can be seen that low-quality information can be spread easily.

This study has the following limitations: First, there was a limitation of the tool of evaluation. Since the DISCERN questionnaire was developed as a tool for evaluating documented health information, it may be inappropriate for evaluating YouTube videos. Sources and dates of information are conventionally stated in the document but are not commonly described in the video material. In fact, there were only nine videos that stated the source or when the information was generated, and the scores of the two items were observed to be incredibly low in most videos. In addition, unlike documents with a structure such as introduction, body, and conclusion, videos rarely stated a clear purpose ahead. Most videos had relatively short or no introduction to attract the viewer’s attention, resulting in low scores in items of “Clear aim” and “Aim achieved.” The DISCERN question is a validated tool, but the eight items were newly developed to assess whether the videos covered comprehensive and accurate facts. Therefore, this questionnaire was not validated for this assessment. Consequently, there may be potential bias and deficiencies in the assessment tool.

Second, there was a limitation in the evaluation method. In this study, two authors discussed the guidelines for the evaluation in advance and tried to maintain consistent criteria in the middle of the evaluation through the discussion. However, the possibility of measurement bias could not be excluded, and interobserver agreement was not evaluated in this study.

Third, new videos are uploaded continuously, and the number of views, likes, dislikes, and comments are changing every moment. Thus, the evaluation was based only on a specific moment. In addition, the number of views did not reflect the actual number of views because viewers might not watch the video to the end or only selectively watch certain parts, and viewers’ responses or assessment of the content could not be evaluated.

In conclusion, as of July 1, 2020, the authors identified the quality of videos related to isotretinoin posted on YouTube in Korea. Overall, a wide range of problems with quality was observed, and these were more pronounced in videos in which non-MP became the subject of delivering information. The quality evaluation score and the number of views in the videos were not correlated, and it was confirmed that incorrect information could be easily disseminated because videos with low quality could also record high views. The incorrect perception of isotretinoin may spread through YouTube videos, so, dermatologists should try to correct the wrong information about isotretinoin. In addition, as the number of dermatologists posting YouTube videos is increasing, it is recommended to try to provide good quality information based on the current limitations of YouTube videos.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

1. Jeong MG, Kim JE, Ahn JY, Ko JY, Park MY, Ro YS. Effects of gamma-linolenic acid for the treatment of acne vulgaris treated with isotretinoin. Korean J Dermatol 2013;51:863-870.
2. Park IH, Seol JE, Kim H, Seo JK, Lee SK. A survey to understand acne patients in Busan. Korean J Dermatol 2015;53:298-303.

https://doi.org/10.5021/ad.21.143
3. Jeong YC, Kim YH. 2018 Analysis on use-behavior of broadcast media. Gwacheon: Korea Communications Commission, 2018.
4. Min SJ, Lee YH, Han YJ, Chung BM. Internet usage survey of Korea 2019. Daegu: National Information Society Agency, 2019.
5. Oh SW, Song HY. YouTube algorithm and journalism. Seoul: Korea Press Foundation, 2019.
6. Park SH, Park IH, Hwang SH, Jung SY, Wang HY, Kim H, et al. A prospective study about application of adapalene-benzoyl peroxide-MLE fixed dose combination gel for the treatment of disease in patients with acne vulgaris. Korean J Dermatol 2020;58:382-388.
7. Suh DH, Shin JW, Min SU, Lee DH, Yoon MY, Kim NI, et al. Treatment-seeking behaviors and related epidemiological features in Korean acne patients. J Korean Med Sci 2008;23:969-974.
8. Kwon HH, Yoon HS, Suh DH, Yoon JY, Park SK, Lee ES, et al. A nationwide study of acne treatment patterns in Korea: analysis of patient preconceived notions and dermatologist suggestion for treatment. Acta Derm Venereol 2012;92:236-240.
9. Park JH, Cho BL., Kim YI, Shin YS, Kim Y. Assessing the quality of internet health information using DISCERN. J Korean Soc Med Inform 2005;11:235-246.
10. Kim SY. Internet health information. J Korean Acad Fam Med 2002;23:281-290.
11. İslamoğlu ZGK, Altınyazar HC. Effects of isotretinoin on the hair cycle. J Cosmet Dermatol 2019;18:647-651.
12. Azoulay L, Blais L, Koren G, LeLorier J, Bérard A. Isotretinoin and the risk of depression in patients with acne vulgaris: a case-cross-over study. J Clin Psychiatry 2008;69:526-532.
13. Huang YC, Cheng YC. Isotretinoin treatment for acne and risk of depression: a systematic review and meta-analysis. J Am Acad Dermatol 2017;76:1068-1076.e9.
14. Barbieri JS, Shin DB, Wang S, Margolis DJ, Takeshita J. The clinical utility of laboratory monitoring during isotretinoin therapy for acne and changes to monitoring practices over time. J Am Acad Dermatol 2020;82:72-79.