

ORIGINAL ARTICLE

Medicine Science 2023;12(4):1158-63

Evaluation of the quality and content of YouTube videos related to oral aphthae**^{ID}Merve Candan, ^{ID}Barkin Isilar, ^{ID}Alper Camgoz, ^{ID}Secil Caliskan***Eskişehir Osmangazi University, Faculty of Dentistry, Department of Pediatric Dentistry, Eskişehir, Türkiye*Received 23 August 2023; Accepted 21 September 2023
Available online 09.10.2023 with doi: 10.5455/medscience.2023.08.165

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial-NonDerivatives 4.0 International License.

**Abstract**

Social media (SM) platforms are frequently used for various purposes, such as obtaining medical information in the field of health, sharing the experiences of patients about their diseases, and promoting drugs/products. The aim of this study is to examine the content of Turkish YouTube videos (TYVs) about oral aphthae, which are frequently seen in society today, and to evaluate the videos in terms of their usefulness as a source of information. This study evaluated the top 100 TYVs filtered by relevance using the keyword "aphthae" in Turkish. The videos were evaluated according to their target audience, sources, and content. The Global quality index (GQS) of related videos and modified DISCERN scores were calculated. Although oral aphthae are also common in the pediatric population, the target audience of the videos was generally adults. It was determined that the non-medical treatment options recommended for the treatment of the disease in the videos were statistically significantly higher than the medical treatment. The GQS&DISCERN scores of the videos created by healthcare professionals were found to be statistically significantly higher than the videos created by influencers and patients who experienced the disease. Although SM has become a widely used information source for patients today, there were significant differences in the quality of TYVs containing information about oral aphthae. In light of the data obtained from the present study, it is not possible to evaluate the shares of non-health professionals as a reliable and accurate source of information. More active use of SM applications such as YouTube by health professionals may enable these platforms to be a useful source of information.

Keywords: Aphthae, dentistry, social media, YouTube, pediatric dentistry**Introduction**

Aphthous ulcers are painful ulcers localized in the mucous membrane that usually occur in the mouth. Many other clinical conditions that present with bullous or vesiculobullous lesions, ulcerations, and erosions can be mistaken for aphthous ulcers [1]. Oral aphthae are the most common oral lesions in the general population [2] and can be clinically detected in various sizes. The majority of aphthae are small and heal within seven to ten days, whereas larger ulcers may require weeks to heal. Recurrent aphthous stomatitis (RAS) is the most prevalent ulcerative disease of the oral mucosa, manifesting as round, shallow lesions with a yellowish-gray pseudomembranous center and well-defined erythematous margins [2,3]. They may cause difficulty while eating, swallowing, and peaking may severely affect the quality of life of patients [4]. All patients, from children to adults, who suffer from these lesions turn to health professionals and alternative medicine treatments for the treatment of the disease

[5]. The primary objective of RAS treatment is symptomatic relief. Reducing the number and size of lesions, prolonging the disease-free period, and relieving the patient's discomfort are the primary objectives. A complete consensus on the treatment of RAS has not yet been reached, and no single treatment method can be deemed appropriate [4].

With the onset of the COVID-19 pandemic, social media (SM) platforms have attracted great interest as they provide users with access to 'the information they are looking for' from around the World [6]. Today, despite demographic differences, people from all over the world can express their opinions and share information on many issues using SM.

YouTube, one of the SM platforms where members upload and share videos, was established in 2005 [7]. These videos range from formal lectures to videos taken in daily life. Both formal educators and the general public can post videos, tutorials, or

CITATION

Candan M, Isilar B, Camgoz A, Caliskan S. Evaluation of the quality and content of YouTube videos related to oral aphthae. Med Science. 2023;12(4):1158-63.



Corresponding Author: Merve Candan, Eskişehir Osmangazi University, Faculty of Dentistry, Department of Pediatric Dentistry, Eskişehir, Türkiye
Email: merve.candan@ogu.edu.tr

vlogs on this platform. Thus, through the uploaded videos, information becomes accessible to everyone using this SM platform. Today, SM platforms are frequently used for various reasons, including supporting public health, obtaining medical information in the field of health, sharing people's experiences about their diseases, and promoting medical drugs and products [8]. However, although these platforms are used for quick access to information, there are various concerns about the accuracy of the information obtained because they are not auditable [9].

There have been previous studies evaluating various topics in many areas of dentistry, such as tooth brushing, retainers, and fluoride applications, using YouTube resources [10–15]. However, no study evaluating Turkish YouTube videos about oral aphthae, which can affect individuals of all ages, has been found in the literature. Due to the poorly understood and painful nature of aphthous ulcers, it is likely that a significant number of SM users may search for information about the causes and treatments of this disease on SM. Consequently, the purpose of this study is to investigate the content of Turkish YouTube videos about oral aphthae, which is prevalent in contemporary society, and to assess the videos in terms of their usefulness as information resources.

The null hypothesis of the present study is that the content and quality of videos about oral aphthae posted by YouTube users in Türkiye will differ according to the video uploaders (health professionals and others).

Material and Methods

In the present study, ethics committee approval was not obtained because no human participants or animals were involved and the videos were publicly available. Similar investigations in the literature have taken the same approach. The research methodology was based on other studies evaluating YouTube (San Mateo, California, USA) content [12,16,17].

The data in the study was obtained by using the account of a researcher (B.I.) on the YouTube (www.youtube.com.tr). For data collection, a search was made on YouTube using the keyword "Aft" which means aphthae and the first 100 Turkish videos filtered by relevance were evaluated. The term "Aft" was used in the search because the term "Aft" is more inclusive than the terms "Oral aphthae" or "Aphthous stomatitis". Videos that deviate from the researched topic, videos longer than 20 minutes, repetitive videos, non-Turkish videos, advertisements, videos that only lead to websites, and silent videos were not evaluated. The data were accessed between January 1-14, 2023. The study's flowchart is depicted in Figure 1.

All videos were reviewed simultaneously by two specialty/doctoral students (B.I.) and (A.C.) working in the Department of Pedodontics, and their data were recorded. Any disagreements between reviewers were resolved through consensus-building discussions with a third author (M.C.). The time elapsed from the upload date to the evaluation date, the video duration,

the number of views and likes of the examined videos were recorded. In addition, the videos were evaluated according to their target audience, sources, and content. The global quality index (GQS) scores and modified DISCERN scores for YouTube were calculated to evaluate the overall quality and reliability of the related videos [16,17] (Tables 1 and 2). The obtained data were evaluated using descriptive statistics and chi-square tests using SPSS Ver.25 (Statistical Package for the Social Sciences, Chicago, Illinois, USA).

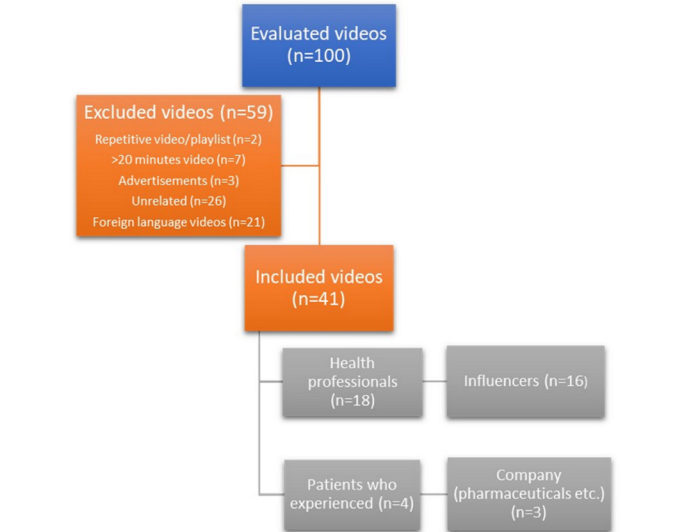


Figure 1. The flowchart of the study

Table 1. 5-point Likert-type GQS Scale [17]

Classification	Score
Low quality: the video is poorly streamed, missing most of the information, not useful at all	1
Poor quality and poor streaming in general: some information is listed but many key items are missing; very limited use	2
Medium quality: insufficient flow; some important information has been adequately discussed, but other information has not been sufficiently discussed; somewhat useful	3
Good quality and generally good flow: most of the relevant information is listed, but some topics are not covered; practical	4
Excellent quality and flow; very useful	5

Table 2. DISCERN scale, a 5-item questionnaire modified for Youtube [16]

Questions
(1) Are the objectives clear and achieved?
(2) Are credible sources of information used (i.e. cited publication, speaker dental expert)?
(3) Is the information presented both balanced and impartial?
(4) Are additional sources of information listed for patient reference?
(5) Are areas of uncertainty mentioned?
For each question, a "Yes" answer is worth 1 point and a "No" answer is worth 0 points. The scoring of the questionnaire is made between 1-5

Results

Out of the first 100 videos evaluated, a total of 41 videos were included in the study after applying the exclusion criteria (Figure 1).

Table 3 includes the descriptive features of the videos. The average video duration was determined to 3±2.5 minutes, and the average number of likes per video was 801±3463.4.

The distribution of the analyzed videos according to target audience, source, content and DISCERN & GQS scores is shown in Table 4.

The average GQS score of the videos was 2.44±4.40, while the average modified DISCERN score was 2.42±3.70.

When the information content of the videos was evaluated, it was determined that 21.9% were of good quality. When the content distribution was evaluated, it was seen that 22 videos (54%) addressed the general characteristics of the disease, 16 videos (39%) addressed drug promotion, and 3 videos (7%) addressed the personal experiences of the patients (Figure 2).

When the sources sharing the video are evaluated, 3 videos (7.3%) were shared by commercial companies, 18 videos (43.9%) by healthcare professionals, 16 videos (39%) by influencers, and 4 videos (9.8%) by patients who experienced the disease (Figure 3).

Table 3. Descriptive findings of the examined videos

Descriptive findings	Mean	Standard deviation	Minimum	Maximum
Number of views	63313.8	181855.7	10	397000
Number of likes	801.3	3463.4	0	22000
Video duration (minutes)	3	2.5	0.2	10
Time since installation (month)	35.7	34.6	0.2	120

Table 4. Distribution of the analyzed videos according to target audience, source, content and DISCERN & GQS scores

		n (%)
Target audience	Patients	40 (97.6%)
	Children	1 (2.4%)
	Professionals	-
Source	Company	3 (7.3%)
	Health professional	18 (43.9%)
	Influencer	16 (39%)
	Experiencing patient	4 (9.8%)
Content	Drug promotion	16 (39%)
	Patient experience	3 (7.3%)
	General characteristics of the disease	22 (53.7%)
Targeted group	Adult	30 (73.2%)
	Adult+child	11 (26.8%)
	Child	-
DISCERN score	5	1 (3%)
	4	7 (19%)
	3	8 (22%)
	2	10 (28%)
	1	10 (28%)
GQS score	5	1 (2%)
	4	8 (20%)
	3	9 (22%)
	2	13 (32%)
	1	10 (24%)

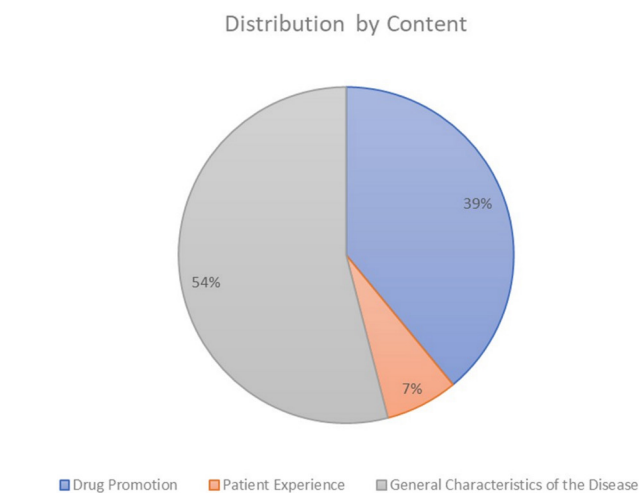


Figure 2. Distribution of the videos analyzed according to their content

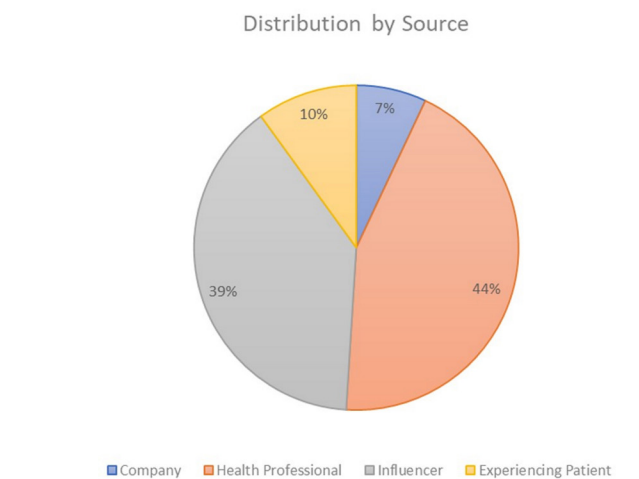


Figure 3. Distribution of the videos analyzed according to their sources

Table 6. Distribution of treatment options mentioned in the videos

	Medical	Herbal	Medical+herbal	Not mentioned	p
Health professionals	5	4	8	1	0.032*
Others	1	20	2	0	

p≤0.05 was considered statistically significant

Discussion

The null hypothesis formulated for this study was accepted based on the data obtained as a result of the research.

SM became a popular place to search for medical information, especially during the coronavirus pandemic when people had to stay at home, and enabled the general public to gather information about the pandemic from various perspectives [8]. However, the scientific accuracy and quality of information on SM may vary. Since users can directly publish information on SM without any expert quality control, the uploader is solely responsible for the accuracy of the information shared. Therefore, while SM can

When the systemic and local findings mentioned in the videos are evaluated, only 16 videos (39%) mentioned the systemic findings of the disease, and other videos did not mention the systemic findings. Local findings of the disease were mentioned in only 15 videos (36.6%) (Table 5).

In videos that mention systemic and local symptoms compared with those that don't, a statistically significant difference was found between GQS and DISCERN scores (p=0.011*).

The distribution of treatment options mentioned in the videos is shown in Table 6.

The medical drugs recommended in the videos were, from most to least recommended, analgesic pomade (40%), chlorhexidine (20%), steroid cream (16%), vitamin supplementation (16%), tetracycline (4%), and fluid supplementation (4%). However, the herbal medicines recommended were, in order from most to least recommended, sumac (24%), baking soda (21%), saline (13%), honey-propolis (10%), black mulberry syrup (6%), clove oil (4%), and vinegar (4%).

Table 5. Distribution of systemic diseases, local findings and treatment options discussed in the videos reviewed

	n (%)
Systemic diseases	Yes (Behcet's disease, vitamin deficiency, GI diseases, immunodeficiency, hormonal disorder) 16 (39%)
	No 25 (61%)
Local findings	Yes (Pain, combustion, lymphadenopathy) 15 (36.6%)
	No 26 (63.4%)
Treatment	Medical 6 (14.6%)
	Herbal 24 (58.5%)
	Medical+herbal 10 (24.4%)
	No treatment recommendation mentioned 1 (2.4%)

provide useful information, it can also lead to significant levels of information pollution. Based on this dilemma, there are many articles published in the literature on the content of YouTube videos prepared on various topics [9,11,12,17]. Considering all these, since it was determined that there was no quality and content evaluation of Turkish YouTube videos on oral aphthae, this study aimed to fulfill this gap.

As health professionals recognize the importance of YouTube as a source of medical information for the general population, the number of studies evaluating the quality of information found on YouTube is increasing [9,12,16,18]. When the target audience of the videos evaluated in this study was examined, it was found

that only one video targeted the pediatric population. Considering that the onset of RAS, in which children are frequently affected by aphthous ulcers like adults, is often seen in childhood or adolescence [19], this situation was found remarkable. Clearly, more informative videos should be produced, particularly for pediatric patients.

Considering the sources of the videos evaluated in this study, although the rates of videos shared by internet celebrities evaluated under the titles "Health Professionals" and "Influencers" are similar. It is believed that health professionals being more active on SM and sharing more videos will increase the credibility of the relevant videos by ensuring that the information is shared by the appropriate source.

When the content of the videos was evaluated in this study, it was determined that the majority of them provided general information about the disease. However, considering the lack of videos describing the treatments applied in the treatment of the disease, it was determined that patients could not access sufficient and accurate information about the treatment of this disease.

According to the mean GQS of the videos evaluated in this study (2.44 ± 4.40), it was found that the videos may be of very limited use. Due to the fact that only a small amount of information about the disease was provided in the videos, but many crucial issues were omitted. The mean modified DISCERN scores of the videos were 2.42 ± 3.70 . These low scores reflect the lack of well-structured videos and inaccurate and unreliable information about oral aphthae on YouTube.

Until the underlying cause of oral aphthous ulcers is determined, all therapeutic measures seek to alleviate symptoms. Due to the low risk of systemic adverse effects, topical measures may be preferred as initial treatment. However, in patients with complex, severe, and recurrent aphthae, additional systemic treatment should be considered instead of just topical measures. Corticosteroids, anti-inflammatory drugs, and topical antiseptics can be used in the treatment of the disease [20]. Oral aphthous ulcers can be facilitated by neutropenia, iron deficiency anemia, folic acid and vitamin B12 deficiency, local trauma, and other factors. Patients with lesions should be advised to pay attention to their diet and avoid hard, acidic, and salted foods, along with carbonated and alcoholic beverages [20].

The term complementary and alternative medicine (CAM) is used interchangeably with the term conventional medicine and can be preferred to eliminate the potential side effects of medical drugs [21]. Patients can choose between medical care provided by a physician and one of the CAM methods aimed at self-treatment. However, it is not known exactly how and why patients decide to make this choice, though the underlying reasons may include high health and health care expenditures and difficulties in accessing health professionals [22].

Many treatment methods are used in the treatment of aphthae. Therefore, the validity of a single treatment method cannot be mentioned [5,20,23]. Among the treatments mentioned in the videos, herbal treatments are the most frequently mentioned

treatment option, followed by multidisciplinary treatment options in which both medical and herbal treatments are used together. While it is logical for health professionals to recommend only medical or both medical and herbal treatments together because they know/anticipate the potential effects and side effects that may occur for both types of drugs. However, it is thought-provoking that herbal treatments are recommended at such a high rate by non-health professionals.

In phytotherapy, which is one of the CAM methods, herbs can help treat different diseases due to their antioxidant, anti-inflammatory, antimicrobial, and lipid peroxidation properties [24–28]. For the treatment of RAS, Isparta rose, pomegranate, licorice root, aloe vera, turmeric, blueberry, echinacea, and many other herbs are used⁵. It was determined that the most recommended herbal treatment product in the evaluated videos was sumac. Similarly, in a study conducted in Türkiye, it was found that patients most frequently used sumac as an alternative to medical treatment [29]. In addition, sumac was clinically determined that it is an alternative treatment method to medical treatment in the treatment of RAS [23].

The preference for the use of herbal medicines is increasing worldwide, and this is particularly popular in regions surrounded by diverse vegetation [22]. However, concerns have been raised about the use of herbals due to the risk of side effects and a lack of scientific evidence. Even though many people believe that "natural" herbal products are always safe and healthy, this is not always the case. The reason is because herbal remedies are not subject to the same testing as pharmaceutical medications [30]. Therefore, some herbs may cause serious harm and interact with over-the-counter or prescription medicines. Therefore, determining the doses and routes of administration of herbal medicines is vital to ensuring that appropriate management is optimized. When considering the use of an herbal medicine, information should be obtained from reliable sources, and the relevant health professional should be consulted.

The limitations of the present study include the limited number of videos on the researched subject, the lack of approved criteria for evaluating video content in internet-based studies, and the fact that the findings obtained with new videos to be uploaded may change over time. In addition, only videos under 20 minutes in length were evaluated in this study. The presumption that viewers are most likely to watch videos less than 20 minutes all the way through can explain this [31,32].

Conclusion

As a result, it can be said that the development of technology affects the ways of accessing information compared to the past, but the concerns about the reliability and quality of information brought about by this situation are clear. The increasing importance of SM in the dissemination of news or information cannot be ignored, but it should not be considered as a primary source of information. Although SM has become a widely used information source for patients, there are significant differences in the quality of Turkish YouTube videos containing information

about oral aphthae. In the light of the data obtained from this research, it is not possible to evaluate the shares of non-health professionals as a reliable and accurate source of information. More active use of SM applications such as YouTube by health professionals may enable these platforms to be a useful source of information.

Conflict of Interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical Approval

In the present study, ethics committee approval was not obtained because no human participants or animals were involved and the videos were publicly available.

This study was presented as an oral presentation at the 2nd International ERDİŞ Congress held on February 23–26, 2023.

References

- Vaillant L, Samimi M. Aphthous ulcers and oral ulcerations. *Presse Med.* 2016;45:215-26.
- Akintoye SO, Greenberg MS. recurrent aphthous stomatitis. *Dental Clinics.* 2014;58:281-97.
- Plewa MC, Chatterjee K. Aphthous Stomatitis. In: StatPearls. StatPearls Publishing; 2023. <http://www.ncbi.nlm.nih.gov/books/NBK431059/> access date 17.05.2023
- Tarakji B, Gazal G, Al-Maweri SA, et al. Guideline for the diagnosis and treatment of recurrent aphthous stomatitis for dental practitioners. *J Int Oral Health.* 2015;7:74-80.
- Candan M, Candan, Ferda. Rekürrent aftöz stomatit tedavisinde kullanılan bitkiler. In: Diş Hekimliğinde Yeni Yaklaşımlar. 1st ed. Iksad Publishing House; 2022:45-84.
- Gupta S, Jain G, Tiwari AA. Polarised social media discourse during COVID-19 pandemic: evidence from YouTube. *BIT.* 2023;42:227-48.
- YouTube, History, Founders, & Facts, Britannica. <https://www.britannica.com/topic/YouTube> access date 21.02.2023
- Saud M, Mashud M, Ida R. Usage of social media during the pandemic: Seeking support and awareness about COVID-19 through social media platforms. *Journal of Public Affairs.* 2020;20:e2417.
- Li HOY, Bailey A, Huynh D, et al. YouTube as a source of information on COVID-19: a pandemic of misinformation? *BMJ Global Health.* 2020;5:e002604.
- Mukhopadhyay S, Kruger E, Tennant M. YouTube: a new way of supplementing traditional methods in dental education. *J Dent Educ.* 2014;78:1568-71.
- Ozdede M, Peker I. Analysis of dentistry YouTube videos related to COVID-19. *Braz Dent J.* 2020;31:392-8.
- Cesur Aydin K, Gunec HG. Quality of information on YouTube about artificial intelligence in dental radiology. *J Dent Educ.* 2020;84:1166-72.
- Mustuloğlu Ş. Çocuklarda diş fırçalama ile ilgili youtube videolarının içeriklerinin bir kaynak olarak değerlendirilmesi. *Selcuk Dent J.* 2022;9:825-30.
- Sezer B. Yer tutucular ile ilgili türkçe youtubet videoları ne düzeyde yararlı? *Selcuk Dent J.* 2022;9:133-40.
- Gökkaya B. Koruyucu flor uygulamaları ile ilgili türkçe youtube videolarının içerik değerlendirilmesi: Retrospektif Çalışma. *Türkiye Klinikleri J Dental Sci.* 2022;28:356-62.
- Radonjic A, Fat Hing NN, Harlock J, et al. YouTube as a source of patient information for abdominal aortic aneurysms. *J Vasc Surg.* 2020;71:637-44.
- Yüce MÖ, Adalı E, Kanmaz B. An analysis of YouTube videos as educational resources for dental practitioners to prevent the spread of COVID-19. *Ir J Med Sci.* 2021;190:19-26.
- Sampson M, Cumber J, Li C, et al. A systematic review of methods for studying consumer health YouTube videos, with implications for systematic reviews. *PeerJ.* 2013;1:e147.
- Kiliç SŞ, Demirbaş T. Tekrarlayan aftöz stomatit. *Güncel Pediatri.* 2005;3:107-11.
- Altenburg A, El-Haj N, Micheli C, et al. The treatment of chronic recurrent oral aphthous ulcers. *Dtsch Arztebl Int.* 2014;111:665.
- Complementary, alternative, or integrative health: what's in a name? NCCIH. <https://www.nccih.nih.gov/health/complementary-alternative-or-integrative-health-whats-in-a-name> access date 10.05.2023
- Tengku Mohamad TAS, Islahudin F, Jasamai M, et al. Preference, perception and predictors of herbal medicine use among malay women in malaysia. *Patient Prefer Adherence.* 2019;13:1829-37.
- Lavaee F, Ghasemi M, Amiri MA, et al. The comparative effects of rhus coriaria and triamcinolone in patients with recurrent aphthous stomatitis: a single-blinded randomized controlled clinical trial. *Biomed Res Int.* 2022;2022:e5855067.
- Candan F, Unlu M, Tepe B, et al. Antioxidant and antimicrobial activity of the essential oil and methanol extracts of *Achillea millefolium* subsp. *millefolium* Afan. (Asteraceae). *J Ethnopharmacol.* 2003;87:215-20.
- Candan F, Sökmen A. Effects of *rhus coriaria* L. (Anacardiaceae) on lipid peroxidation and free radical scavenging activity. *Phytother Res.* 2004;18:84-6.
- Motaharinia Y, Hazhir M, Rezaee M, et al. Comparison of in vitro antimicrobial effect of ethanol extracts of *Satureja khuzestanica*, *Rhus coriaria*, and *Ocimum basilicum* L. on *Helicobacter pylori*. *JMPR.* 2012;6:3749-53.
- Martinelli G, Angarano M, Piazza S, et al. The nutraceutical properties of sumac (*Rhus coriaria* L.) against gastritis: antibacterial and anti-inflammatory activities in gastric epithelial cells infected with *h. pylori*. *Nutrients.* 2022;14:1757.
- Alsamri H, Athamneh K, Pintus G, et al. Pharmacological and antioxidant activities of *rhus coriaria* L. (Sumac). *Antioxidants.* 2021;10:73.
- Bahalı AG, Köktürk A, Güvenç U. Sociodemographic and clinical characteristics of patients with recurrent aphthous stomatitis. 48:242-8.
- Herbal Medicine. <https://medlineplus.gov/herbalmedicine.html> access date 10.05.2023
- Gorrepati PL, Smith GP. DISCERN scores of YouTube information on eczema treatments. *JAAD.* 2021;85:1354-5.
- Lagerstrom L, Johanes P, Ponsukcharoen U. The myth of the six-minute rule: student engagement with online videos. 2015 ASEE Annual Conference & Exposition. 14-17 June 2015. Seattle, Washington, USA. 26.1558.1-17.