

Health education about COVID-19 pandemic through Youtube Channel Community Pharmacy News

Edukasi kesehatan terkait pandemi COVID-19 melalui Kanal Youtube Community Pharmacy News

Lucia Hendriati, Galuh Nawang Pramesti, Ida Ayu Andri, Diga Albrian, Teguh Widodo

Department of Pharmacy, Faculty of Pharmacy, Universitas Katolik Widya Mandala Surabaya,
Jl. Raya Kalisari Selatan No. 1 Pakuwon City, Surabaya, 60112

ARTICLE INFO:

Received: 2022-05-12
Revised: 2022-06-02
Accepted: 2022-07-03

Keywords:

COVID-19, Education,
Youtube, Pharmacy
Community News

ABSTRACT

To meet information related to the COVID-19 pandemic, people usually search the internet, the most of this is YouTube, which is the dominant source in finding information. The purpose of this community service was to provide valid information in terms of pharmaceutical science, easy to understand by the public regarding the prevention and treatment of COVID-19, so that people can behave appropriately. The method carried out by providing audiovisual information related to the COVID-19 pandemic through the "Pharmacy Community News" YouTube channel. Evaluation was measured by the number of viewers and the number of comments on the video. Educational videos made by students of the Faculty of Pharmacy UKWMS based on research journals under the guidance of lecturers. The information presented includes the themes: hand sanitizers and disinfectants; hoaxes related to COVID-19; vitamins and herbal as immunomodulators; guidelines of COVID-19 treatment and other related to COVID-19. For a year, these videos have been viewed 18,969 times and received 1490 times comments as responses from the public. Based on this data, we can conclude that health education related to COVID-19 during the pandemic through the Youtube channel can reach the wider community and can provide the valid information.

©2022 Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang
This is an open access article distributed under the CC BY-SA 4.0 license
(<https://creativecommons.org/licenses/by-sa/4.0/>)

How to cite: Hendriati, L., Pramesti, G. N., Andri, I. A., Albrian, D., & Widodo, T. (2022). Health education about COVID-19 pandemic through Youtube Channel Community Pharmacy News. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 7(4), 738-747. <https://doi.org/10.26905/abdimas.v7i4.7776>

1. INTRODUCTION

In December 2019, the corona virus disease, which was later referred to as COVID-19, first appeared in the city of Wuhan, China, then quickly spread throughout the world and on March 12, 2020 was declared a pandemic by WHO (World Health Organization). This virus infects the respiratory tract, causing acute pneumonia. The clinical manifestations of COVID-19 in people who are exposed to it vary from asymptomatic, mild, moderate, and severe to chronic. COVID-19 spreads quickly through airborne transmission, direct contact with patients, or contact with surfaces containing the COVID-19 virus. However, until now there is no valid treatment for COVID-19 infection. The therapy given is

mainly supportive and symptomatic treatment, such as maintaining vital signs, maintaining oxygen saturation, and preventing secondary infections (Susilo et al., 2020; Wu et al., 2020)

The most important prevention strategy for the community is to wash hands frequently, use hand sanitizer and avoid contact between hands and face after interacting with an environment that may be contaminated. Meanwhile, to reduce the risk of transmission, people must stay away from crowds and avoid close contact with sickened people. Information about this prevention is disseminated massively. Many posters and brochures were distributed by various organizations regarding efforts to protect against COVID-19. Other prevention efforts can be carried out in various ways: staying at home, maintaining a minimum distance of 2 meters from other people, using masks, covering nose and mouth when coughing or sneezing, disinfecting object surfaces and increasing body immunity so that they are not easily infected. In Indonesia, there are several challenges in preventing COVID-19 prevention, such as population density, smoking habits, low hand washing habits, low access to clean water, and limited personal safety equipment. (Güner et al., 2020; Purnama & Susanna, 2020).

Another strategy for preventing COVID-19 is to increase the body's resistance. In patients with COVID-19, acute respiratory syndrome occurs due to viral replication along with the onset of an inflammatory response in the patient's body. Cytokine storm and viral persistence of cellular immunity play a role in the pathogenesis, clinical manifestations of COVID-19 outcomes. The existence of a good immune system modulator system in the body can inhibit the cytokine storm and reduce the risk of viral infection (Rizk et al., 2020). Natural ingredients that play a role in boosting the immune system in the body include herbal ingredients such as: green chiretta, ginger, and garlic (Singh, 2021). In Indonesia, medicinal plants that are efficacious as immunomodulators are available in abundance and are very easy to find around us. In addition, other ingredients that function as immunomodulators are vitamin A, vitamin C, vitamin D and vitamin E (Sassi et al., 2018). Proper use of drugs or herbal ingredients that affect the immune system, in general, will help people avoid COVID-19 infection.

During the pandemic, the role of information technology is indispensable to provide information to the public, monitor the number of cases, monitor population mobility and treat patients in hospitals nationally. Utilization of information technology must also be able to reduce panic in the community, correct misinformation, increase confidence in tackling the pandemic and provide transparent information about the pandemic. The popularity of the internet and social media must be used to provide correct information to the public (Ye et al., 2020).

More than 70% of adults browse the internet for health-related information. YouTube is the most dominant source for finding information online where more than 2 billion users search every day. The advantage of YouTube is the use of audio-visual media so that it is more easily accessible to various people with various demographic backgrounds. During the pandemic, the search for health information from YouTube has increased dramatically. That being said, conditions like this can be a double-edged sword. On the one side, YouTube can be a means of disseminating appropriate information for governments and health organizations as well as individuals. On the other side, YouTube can also spread misinformation, causing panic and paranoia in society. Unfortunately, a quarter of YouTube's content about the pandemic contains misleading health information. The lack of access to information through YouTube from the government and professional groups for individuals who use YouTube causes a lot of non-factual information that is not in accordance with the recommendations of health institutions. This is quite worrying considering that inappropriate information can lead to inappropriate and harmful behavior (Li et al., 2020, Khatri et al., 2020).

Just like in other parts of the world, people in Indonesia also need information about the prevention and treatment of COVID-19. Based on guidelines by the Ministry of Health of the Republic of Indonesia

(2020), the way to prevent the transmission of COVID-19 is to frequently wash hands with soap or use hand sanitizers, consume balanced nutrition, vitamin supplements, physical activity or exercise, adequate rest, control of comorbidities, cleaning surfaces with disinfectant, stay at home and keep a distance of at least 2 m. Information regarding the handling of COVID-19 can be disseminated in the form of posters, brochures, audiovisual information, health education (Ministry of Health of the Republic of Indonesia, 2020).

During the pandemic, pharmacists can play a role in controlling the COVID-19 pandemic by utilizing their knowledge in optimizing drug procurement management and clinical management of patients using health information technology. Telemedicine, including counseling, supervision, training, and psychoeducation in the context of a pandemic, has been widely carried out to reduce the risk of transmission. One part of clinical management telemedicine for patients or the public is the provision of appropriate information (Falconer et al., 2021; Li et al., 2021).

Therefore, it is necessary to have information regarding the handling of COVID-19 that is valid and can be trusted online so that it can be easily accessed by people who are advised to stay at home. For that, through the "Community Pharmacy News" YouTube channel, academic community of the Faculty of Pharmacy, Widya Mandala Catholic University, Surabaya, uploaded videos of health education to the public regarding matters related to COVID-19. This service program aims to provide information in terms of correct pharmaceutical science, easily understood by the public regarding the prevention and treatment of COVID-19, so that people can behave and act appropriately.

2. METHOD

The method used in community service is by providing audiovisual information in the form of health education videos related to the COVID-19 pandemic through the YouTube channel. The evaluation of the success of the service is measured by the number of views and the number of comments on the education video. The limitation when educating through this YouTube channel is the difficulty of monitoring in terms of knowing who is the audience for the education video and changes in attitude or behavior after watching the education video. The activity of making outreach videos to the public regarding COVID-19 was carried out during the September 2020-September 2021 timeframe and uploaded on the "Community Pharmacy News" YouTube channel. This period is where COVID-19 sufferers began to increase sharply and reached the peak of the highest number of COVID-19 sufferers in July-August 2021.

(<https://COVID19.go.id/artikel/2022/01/16/analisis-data-COVID-19-indonesia-update-9-januari-2022>).

In accordance with the guidelines by the Ministry of Health (2020), the video themes set include: disinfectants and hand sanitizers, counteracting COVID-19 hoaxes, immunomodulators (herbs and vitamins), COVID-19 treatment management, and other themes related to COVID-19. Students together with their supervisors started making education videos by doing a library search. The library used must be up-to-date and research-based so that the information to be provided to the public is valid and reliable. The results of the literature search are discussed by students with each supervisor within 2 weeks.

The process of making education videos is done online by each member of the student group and then compiled into one video with a predetermined flow. Each video is limited to a maximum viewing duration of 15 minutes. The optimal time for video viewing is 4 minutes (Welbourne & Grant, 2016). However, with the consideration that the information to be conveyed to the public is complete and clear, it is determined that the video duration of the extension video is a maximum of 15 minutes. The

process of making this video took 2 weeks. Education videos that have received material approval by the supervisor are uploaded on the "Community Pharmacy News" YouTube channel. The advantage of educating through the YouTube channel is that it is not bound by time and distance, so that anyone can see the information. An evaluation of the presentation of the education video was carried out in March 2022, where the COVID-19 pandemic began to slow down and the number of sufferers had decreased significantly. During this period, the public's search for material related to COVID-19 has also begun to decline, so an evaluation of video viewing can be carried out. The evaluation is mainly related to the number of views and comments from the public as a parameter for the community's response to the education video.

3. RESULTS AND DISCUSSION

YouTube is the largest website on the internet, with various video genres from amateur and professional creators. Communication science is currently not only practiced by professional communicators, but also by scientists, interest groups and professional organizations using various communication platforms. YouTube is accessed by 2 billion viewers every day (Li et al., 2020; Welbourne & Grant, 2016). In this pandemic period where people are encouraged to stay at home, the internet is the main source for accessing information. The results of the extension video showing which began to be uploaded in September 2020 on the "Community Pharmacy News" YouTube channel managed by the Faculty of Pharmacy, Widya Mandala Catholic University, Surabaya, can be seen in Tables 1-6. All data were taken on March 18, 2022 at 11.00. Examples of some education videos can be seen in Figure 1.

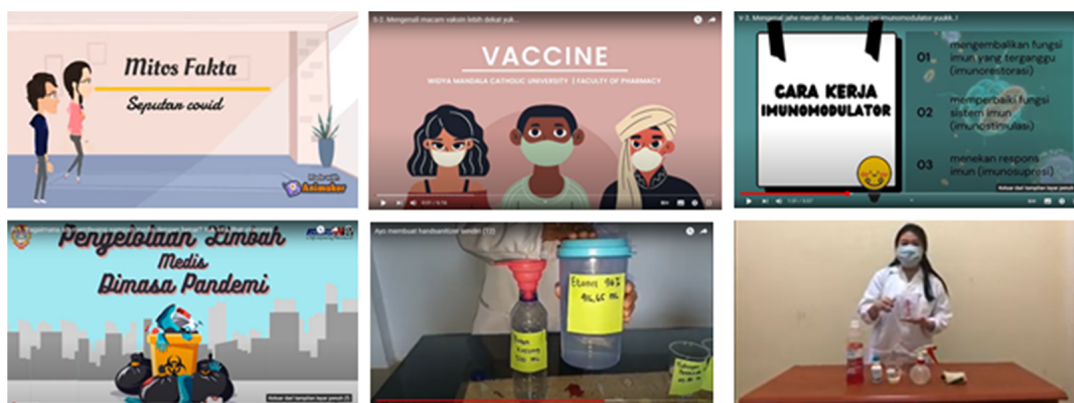


Figure 1. Example of a COVID-19 pandemic education video

The profile of video viewing with the theme of disinfectants and hand sanitizers can be seen in Table 1. The most widely reviewed disinfectant is the make of H_2O_2 solution, while the most widely reviewed hand sanitizer is the make of 70% alcohol ingredient. The use of hand sanitizers is one way to break the chain of COVID-19 spread. Hand sanitizers may be water or/and alcohol based. Hand sanitizers with an alcohol content of 62 – 95% are most effective in denaturing microorganism proteins and inactivating viruses. While the disinfectant recommended by WHO is a disinfectant containing hydrogen peroxide (H_2O_2). The action mechanism of hydrogen peroxide is by free radical oxidation of essential cell components (Lee et al., 2020). In the education video, the community is invited to make and use hand sanitizers and disinfectants to help break the chain of COVID-19 spread. In general, the public's interest

is large enough to know how to make and use disinfectants and hand sanitizers effectively. This can be seen by the number of video views are 4,446 and comments are 339.

Table 1. Profile of video presentations about disinfectants and hand sanitizers

Video Title	Number of Views	Number of Comments	Video Duration	Link
"Efektif menggunakan desinfektan"	1,574	109	10.07	https://youtu.be/P-QuolukaUg
"Desinfektan? Bisa loh kita buat sendiri... tonton yuukk..."	1,050	83	13.56	https://youtu.be/WsDw1d4F-rc
"Mari membuat Hand Sanitizer sendiri"	702	55	4.48	https://youtu.be/t8a5VZLzj-4
"Yuk membuat desinfektan sendiri..."	390	8	14.45	https://youtu.be/M66wJTe7TE
"Ayo membuat handsanitizer sendiri"	326	29	7.54	https://youtu.be/B9SIg5uM74k
"Membuat hand sanitizer yuk"	230	42	6.18	https://youtu.be/ilrtx33y2lw
"Hubungan desinfeksi permukaan dengan potensi penularan COVID-19"	174	13	8.39	https://youtu.be/ny9yN0EwEj8

The profile of video viewing related to COVID-19 hoaxes can be seen in Table 2. During the pandemic, there are a lot of news which validity could not be accounted for. In this reason, it is necessary to have information that reviews the truth of hoaxes related to COVID-19 while also providing education about the truth of COVID-19. By searching the literature in the form of research journals, the validity of the information can be maintained. Some of the hoaxes that have emerged during the pandemic such as; taking antibiotics can kill viruses, drinking alcohol can kill the COVID-19 virus, and the COVID-19 virus can be transmitted from mosquito bites and so on. Hoaxes like these must be debunked so as not to mislead the public. With scientific information based on research results and presented in an appealing manner, hoaxes can be debunked with valid information. The total number of views of the education videos to prevent COVID-19 hoaxes is 3162 views, with a total of 199 comments. This fairly large number of views shows the public's curiosity about the truth of the information that is widely circulated in the community. It is the duty of those who have higher education to help correct misinformation in society.

Table 2. Viewing profile of the education video on COVID-19 hoaxes

Video Title	Number of Views	Number of Comments	Video Duration	Link
"Menangkal hoaks COVID-19 (seri 1)"	1,457	54	10.08	https://youtu.be/tsc4ejidJzk
"Menangkal hoaks COVID-19 (seri 3)"	720	30	14.32	https://youtu.be/bO0aPgNwkGw
"Mitos dan fakta COVID-19, mana yang benar ya?"	708	89	9.57	https://youtu.be/OZ_C5Btk3AQ
"Menangkal hoaks COVID-19 (seri 2)"	277	26	9.33	https://youtu.be/uqKWmEHU_-4

The profile of video viewing related to vitamins as immunomodulators can be seen in Table 3. In general, the term immunomodulator is a substance that can increase the body's immunity. Until now, there is no effective antiviral for COVID-19, so one way to avoid COVID-19 infection is to increase immunity. Vitamins C, D and E have immunomodulatory properties (Mousavi et al., 2019). Information on how to use, dosage and instructions for use is very much needed by the community. The use of drugs with proper use can increase the effectiveness of vitamins as immunomodulators. Total views for this material are 2014 times with 122 comments. This number of views shows the public's need to obtain

Health education about COVID-19 pandemic through Youtube Channel Community Pharmacy News

Lucia Hendriati, Galuh Nawang Pramesti, Ida Ayu Andri, Diga Albrian, Teguh Widodo

information on the use of vitamins as immunomodulators during the pandemic to avoid COVID-19 infection.

Table 3. Viewing profile of videos about vitamins as immunomodulators

Video Title	Number of Views	Number of Comments	Video Duration	Link
"Bagaimana sih memilih suplemen yang tepat untuk orang sehat maupun pasien COVID-19"	622	33	5.47	https://youtu.be/BzQVPrEiM1w
"Mengenal vitamin C sebagai imunomodulator"	534	30	12.21	https://youtu.be/1lgE2LesWlg
"Apasih guys imunomodulator itu?"	319	10	9.20	https://youtu.be/RW5UVTBDvKI
"Vitamin D sebagai imunomodulator"	286	8	10.24	https://youtu.be/YZle_pcrCQI
"Vitamin D mencegah infeksi COVID-19"	171	32	2.51	https://youtu.be/Lt-ccqGTkzA
"Kenali manfaat Vitamin C di masa pandemi "	130	9	8.10	https://youtu.be/RMRok6cIF80

Herbal medicine is well-known among the people of Indonesia and has been used for generations. In addition, several herbal medicines are available in ready-to-use forms and are widely available in pharmacies. During the pandemic, herbs are believed to increase the body's immunity so that it is not susceptible to COVID-19. The video profile of the material can be seen in Table 4. Some plants that have immunomodulatory properties are ginger, curcuma, garlic, green chiretta, gripeweed, betel, and cinnamon. (Singh, 2021). For this reason, information about herbs that are efficacious as immunomodulators, dosages, appropriate screening methods and frequency of use are important things for the public to know. Proper use of herbs will provide a therapeutic effect and safety for users. The herbs suggested in this education video are herbal medicines that are abundantly available and easy to obtain. The total number of views for this material is 2650 times with 115 comments. This shows the high public interest in immunomodulators made from herbal ingredients.

Table 4. Viewing profile of education video about herbs as immunomodulators

Video Title	Number of Views	Number of Comments	Video Duration	Link
"Jahe merah dalam pengobatan COVID-19"	614	34	5.11	https://youtu.be/-gYfxwz0Zxc
"Benarkah bawang putih dapat digunakan untuk terapi COVID-19?"	283	22	4.47	https://youtu.be/ZKnhqihErdA
"Mengenal jahe merah dan madu sebagai imunomodulator yuukk..!"	492	0	5.58	https://youtu.be/SjtrNby89wA
"Bahan herbal berkhasiat imunomodulator"	265	9	12.28	https://youtu.be/7XVe8PRAjb4
"Imunomodulator dari bahan herbal"	259	6	5.19	https://youtu.be/IHAsTZONn14
"Bingung mencari Immunomodulator? Ekstrak Herbal Solusinya !"	245	15	4.46	https://youtu.be/UY4X3u4B358
"Mengenal Imunomodulator alami"	208	28	6.32	https://youtu.be/YgUTeO7sur4
"Jamu temulawak bisa digunakan sebagai imunomodulator lho... yuk kita lihat video ini..."	165	0	8.56	https://youtu.be/tLNY9dRfAhg
"Jahe ternyata juga dapat digunakan sebagai imunomodulator lho..."	120	1	9.17	https://youtu.be/FwDmEI7qmog

Managing COVID-19 therapy generally divided into the severity, namely mild, moderate, or severe symptoms. In handling mild symptoms, the community suffice themselves using over-the-counter medicines that can be obtained at pharmacies, while the handling of COVID-19 with moderate to severe symptoms must be carried out under the supervision of a doctor and take place in health services such as hospitals. The public must know when COVID-19 sufferers should be referred to a doctor whenever the use of over-the-counter drugs cannot relieve symptoms. For this reason, information regarding the management of COVID-19 therapy needs to be known to the public so that the handling of COVID-19 can be achieved. The profile of video viewing with material on the management of COVID-19 treatment can be seen in Table 5. The number of views on this material is 4834 times with a total of 578 comments. This number of views is the highest number for all education videos. Based on the number of views, the public really needs accurate information on managing COVID-19 treatment. It also appears that the community is actively conducting independent searches regarding the management of COVID-19, considering that this pandemic is a new thing, so treatment information is something that they really want to know.

Table 5. Viewing profile of education video about the management of COVID-19 treatment

Video Title	Number of Views	Number of Comments	Video Duration	Link
<i>"Bagaimana terapi stem cell untuk pengobatan COVID-19"</i>	1,292	233	9.51	https://youtu.be/mm3Y76l1hdY
<i>"Penatalaksanaan pengobatan COVID-19"</i>	1,244	188	4.28	https://youtu.be/G4Tki6p96rs
<i>"Apa saja sih obat dan alkes yang digunakan saat isolasi mandiri di rumah?"</i>	680	22	9.47	https://youtu.be/sa3eFJ875dc
<i>"Misuse kortikosteroid dalam penanganan COVID-19"</i>	638	102	14.42	https://youtu.be/Tvn8dzKjmvU
<i>"Misuse antibiotik sebagai terapi gejala ringan COVID 19"</i>	348	2	3.48	https://youtu.be/wkC-NBLzuOI
<i>"Mengetahui lebih banyak tentang gas oksigen untuk terapi COVID-19 yuk..."</i>	325	23	8.11	https://youtu.be/sa3eFJ875dc
<i>"Apa sih obat mukolitik itu? Mengapa digunakan pada pengobatan infeksi COVID-19 ya?"</i>	196	8	4.51	https://youtu.be/bUPbr9DA5dl
<i>"Cuci hidung dapat menyembuhkan COVID 19? Benar atau nggak sih?"</i>	111	0	6.04	https://youtu.be/3njlnVg2eOg

There is additional information in regards of treating COVID-19 that must be known by the public, such as; handling of the COVID-19 vaccine, PCR testing, follow-up events after immunization, disposing of medical waste, and telepharmaceuticals as shown in table 6. can act appropriately during this pandemic. The number of views for this material is 1863 times with 137 comments. Although it is not the main information on this COVID-19 pandemic, the public still needs this additional information.

The total broadcasts for each theme are presented in Table 7. Based on the total number of views, the themes that are most sought after by the community in a row are; management of COVID-19 treatment, disinfectants and hand sanitizers, hoaxes related to COVID-19, herbs as immunomodulators, vitamins as immunomodulators, others related to COVID-19. This number of views is in line with the highest number of comments written by viewers in a row, namely; management of COVID-19 treatment, disinfectants and hand sanitizers, hoaxes related to COVID-19, vitamins as immunomodulators, herbs as immunomodulators and others related to COVID-19. Total views of the entire material are 18,969 times

Health education about COVID-19 pandemic through Youtube Channel Community Pharmacy News

Lucia Hendriati, Galuh Nawang Pramesti, Ida Ayu Andri, Diga Albrian, Teguh Widodo

with 1490 comments. This high number of views shows the public's need for information related to the COVID-19 pandemic. It also appears that the public likes the information presented in audiovisual, because it is more appealing and easier to understand.

Table 6. Profile of video presentations of counseling about things related to COVID-19

Video Title	Number of Views	Number of Comments	Video Duration	Link
"Yuk kenali rantai dingin vaksin"	383	40	6.04	https://youtu.be/x3Gc43jqlsw
"Mengenal pengujian PCR untuk COVID-19"	337	14	6.22	https://youtu.be/fv9dHm_dLSw
"Bagaimana sebenarnya mencuci masker dengan benar ya?"	311	22	10.33	https://youtu.be/y6zEqykDml
"Mengenal telefarmasi yuk!"	294	29	5.53	https://youtu.be/KvRAfgY_Er8
"Bagaimana sih membuang sampah medis dengan benar?"	253	10	5.03	https://youtu.be/QDH5IcUDxB4
"Mengenal macam vaksin lebih dekat yuk..."	220	22	6.17	https://youtu.be/gXjzRLC8XD4
"Apa sih yang dimaksud dengan Kejadian Ikutan Pasca Imunisasi (KIPi)"	65	0	3.19	https://youtu.be/pzq43XfzEJI

Based on the average views of each video title in one theme, the highest number of views in a row are hoaxes related to COVID-19, disinfectants and hand sanitizers, COVID-19 treatment management, vitamins as immunomodulators, herbs as immunomodulators, other things related to COVID-19. While the average comments for each title are in one theme, the highest number of comments in a row are: COVID-19 treatment management, hoaxes related to COVID-19, disinfectants and hand sanitizers, vitamins as immunomodulators, other things related to COVID-19 and herbs as immunomodulators.

Table 7. Recapitulation of screenings for each extension theme

Theme	Average views per video title	Total views per theme	Average comments per video title	Total comments per theme
Disinfectant and hand sanitizer	635	4,446	48	339
Hoax related to COVID-19	790	3,162	50	199
Vitamins as immunomodulators	336	2,014	20	122
Herbs as immunomodulators	294	2,650	13	115
Management of COVID-19 treatment	548	4,834	72	578
Other themes related to COVID-19	266	1,863	20	137
Total Views		18.969		1,490

Generally, people search for a topic on YouTube to be informed on particular topic, learning something new, and knowing how something works. Video platforms are the most searched platforms and YouTube is the most popular video platforms (Lagger et al., 2017). Regarding the COVID-19 pandemic, people want to know how to avoid being infected with COVID-19. This can be seen from the results of the video reactions. The video theme about other things related to COVID-19, not specific and unpopular, is the theme with the least number of views. Information about AEFI (Adverse Events Following Immunization) has the smallest views (65 views). It is suspected that the term AEFI is not

yet popular in the community, not many people are looking for information about this. While the material with the most views is preventing the COVID-19 hoax series 1 (1457 views). This shows the need for correct information in society. The amount of confusing and misleading information during a pandemic can cause confusion in society. For this reason, people are trying to find the truth of the news circulating.

During the pandemic, the main source of information comes from social media and various other platforms on the internet, including YouTube. The advantage of YouTube is that people can choose the information they want according to their needs. The drawback of YouTube is that it is open access and without going through peer review, so sometimes it can provide inaccurate information (Ataç et al., 2020). The high number of total views of counseling related to COVID-19 on the YouTube channel "Pharmacy Community News" YouTube channel amounted to 18,969 times, indicating the importance of accurate information in order to avoid misinformation. For this reason, all videos shown on the "Pharmacy Community News" YouTube channel have been reviewed by a team of lecturers with expertise in accordance with the material

4. CONCLUSION AND RECOMMENDATIONS

Health education related to COVID-19 through videos uploaded on Youtube channels during the pandemic can reach the wider community and become a reliable source of information. The educational materials most viewed by the public are hand sanitizers and disinfectants, both regarding effectiveness and manufacturing methods. This material is also the material that gets the most responses and questions in the comments.

One of the limitations of providing education on the Youtube channel is that it cannot interact directly with the community, in contrast to providing education directly through face to face. However, education through youtube channels like this has the advantage of being able to reach a wider community that is not bound by time and place. Recommendations in this community service are: (1) Pharmacy Community News youtube channel as a health education channel is expected to be maintained by continuing to upload health education materials other than COVID-19 when the pandemic period is over. Thus, this channel can be a reference for health information that can be trusted by the public. (2) The material needs to be shown with additional text in English so that it can be understood by people from other countries, considering that the Youtube channel can be accessed by anyone globally. (3) The broadcast model can be made in the form of dialogue and question and answer with a competent resource person regarding drug problems that often arise in the community.

REFERENCES

- Ataç, Ö., Özalp, Y. C., Kurnaz, R., Güler, O. M., Onamlık, M., & Hayran, O. (2020). Youtube as an information source during the Coronavirus Disease (COVID-19) pandemic: Evaluation of the Turkish and English content. *Cureus, 12*(10). <https://doi.org/10.7759/cureus.10795>
- Falconer, N., Monaghan, C., & Snoswell, C. L. (2021). The pharmacist informatician: Providing an innovative model of care during the COVID-19 crisis. *International Journal of Pharmacy Practice, 29*(2), 152–156. <https://doi.org/10.1093/ijpp/riaa017>
- Güner, R., Hasanolu, O., & Akta, F. (2020). COVID-19: Prevention and control measures in community. *Turkish Journal of Medical Sciences, 50*(SI-1), 571–577. <https://doi.org/10.3906/sag-2004-146>

Health education about COVID-19 pandemic through Youtube Channel Community Pharmacy News

Lucia Hendriati, Galuh Nawang Pramesti, Ida Ayu Andri, Diga Albrian, Teguh Widodo

- Kementerian Kesehatan Republik Indonesia; Gerakan Masyarakat Hidup Sehat. (2020). *Apa yang harus dilakukan masyarakat untuk cegah penularan COVID-19*. 1–24.
- Khatri, P., Singh, S. R., Belani, N. K., Yeong, Y. L., Lohan, R., Lim, Y. W., & Teo, W. Z. (2020). YouTube as source of information on 2019 novel Corona Virus outbreak: A cross sectional study of English and Mandarin content. *Travel Medicine and Infectious Disease*, 35(February), 101636. <https://doi.org/10.1016/j.tmaid.2020.101636>
- Lagger, C., Lux, M., & Marques, O. (2017). What makes people watch online videos: An exploratory study. *Computers in Entertainment*, 15(2). <https://doi.org/10.1145/3034706>
- Lee, J., Jing, J., Yi, T. P., Bose, R. J. C., Mccarthy, J. R., Tharmalingam, N., & Madheswaran, T. (2020). Hand sanitizers: A review on formulation aspects, adverse effects, and regulations. *International Journal of Environmental Research and Public Health*, 17, 3326.
- Li, H. O. Y., Bailey, A., Huynh, D., & Chan, J. (2020). YouTube as a source of information on COVID-19: A pandemic of misinformation? *BMJ Global Health*, 5(5). <https://doi.org/10.1136/bmjgh-2020-002604>
- Li, H., Zheng, S., Li, D., Jiang, D., Liu, F., Guo, W., Zhao, Z., Zhou, Y., Liu, J., & Zhao, R. (2021). The Establishment and practice of pharmacy care service based on internet social media: Telemedicine in response to the COVID-19 pandemic. *Frontiers in Pharmacology*, 12(October), 1–9. <https://doi.org/10.3389/fphar.2021.707442>
- Mousavi, S., Bereswill, S., & Heimesaat, M. M. (2019). Immunomodulatory and antimicrobial effects of vitamin C. *European Journal of Microbiology and Immunology*, 9(3), 73–79. <https://doi.org/10.1556/1886.2019.00016>
- Purnama, S. G., & Susanna, D. (2020). Hygiene and sanitation challenge for COVID-19 prevention in Indonesia. *Kesmas*, 15(2), 6–13. <https://doi.org/10.21109/KESMAS.V15I2.3932>
- Rizk, J. G., Kalantar-Zadeh, K., Mehra, M. R., Lavie, C. J., Rizk, Y., & Forthal, D. N. (2020). Pharmac-immunomodulatory therapy in COVID-19. *Drugs*, 80(13), 1267–1292. <https://doi.org/10.1007/s40265-020-01367-z>
- Sassi, F., Tamone, C., & D'amelio, P. (2018). Vitamin D: Nutrient, hormone, and immunomodulator. *Nutrients*, 10(11), 1–14. <https://doi.org/10.3390/nu10111656>
- Singh, N. (2021). A Review On Herbal plants used as immunomodulators. *International Journal of Pharmaceutical Research*, 13(02), 3602–3610. <https://doi.org/10.31838/ijpr/2021.13.02.249>
- Susilo, A., Rumende, C. M., Pitoyo, C. W., Santoso, W. D., Yulianti, M., Herikurniawan, H., Sinto, R., Singh, G., Nainggolan, L., Nelwan, E. J., Chen, L. K., Widhani, A., Wijaya, E., Wicaksana, B., Maksum, M., Annisa, F., Jasirwan, C. O. M., & Yunihastuti, E. (2020). Coronavirus Disease 2019: Tinjauan literatur terkini. *Jurnal Penyakit Dalam Indonesia*, 7(1), 45. <https://doi.org/10.7454/jpdi.v7i1.415>
- Welbourne, D. J., & Grant, W. J. (2016). Science communication on YouTube: Factors that affect channel and video popularity. *Public Understanding of Science*, 25(6), 706–718. <https://doi.org/10.1177/0963662515572068>
- Wu, Y. C., Chen, C. S., & Chan, Y. J. (2020). The outbreak of COVID-19: An overview. *Journal of the Chinese Medical Association*, 83(3), 217–220. <https://doi.org/10.1097/JCMA.0000000000000270>
- Ye, Q., Zhou, J., & Wu, H. (2020). Using information technology to manage the COVID-19 Pandemic: Development of a technical framework based on practical experience in China. *JMIR Medical Informatics*, 8(6). <https://doi.org/10.2196/19515>