



SEXUAL TRANSMITTED INFECTIONS IN SOCIAL MEDIA: YOUTUBE VIDEO CONTENT ANALYSIS

Mikha Noviana*, Zahroh Shaluhiah, Besar Tirto Husodo****

Division of Health Education and Behavioral Sciences, Faculty of Public Health

* Undergraduate Student of Public Health, Diponegoro University

** Teaching staff of the Diponegoro University Public Health Undergraduate Program

Diponegoro University

Email : mikha.noviana@yahoo.com

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Abstract

The increasing prevalence of Sexually Transmitted Infections (STIs) in the world has highlighted the importance of preventing and treating STIs. One of the efforts to decrease the prevalence of STIs is to increase community knowledge of health through videos on YouTube. In making YouTube videos about health information, especially regarding STIs, it is necessary to know the factors that affect the quality of YouTube videos. This study aims to analyze the relationship between the total number of viewers, likes and comments with video content, duration, format, and authorship of YouTube videos shown in search results for keywords “Sexually Transmitted Infections” and “HIV/AIDS in Indonesia”.

This study was conducted using a quantitative analytical study with a cross-sectional approach. The population analyzed in this study was 218 YouTube videos shown in search results for keywords “Sexually Transmitted Infections” and “HIV/AIDS in Indonesia”.

The result showed that there was a significant relationship between total viewers with video authorship ($p=0,001$), total likes with video format and authorship ($p=0,000$; $0,000$), and total comments with video format and authorship video ($p=0,000$; $0,013$).

Promotion and prevention to decrease the prevalence of STIs can be done by increasing community knowledge of STIs. It can be conducted by making promotive, preventive, and rehabilitative videos about health which includes information about healthy lifestyle and diseases with comprehensive and valid health information.

Keywords: Sexually transmitted infections, YouTube, content

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INTRODUCTION

Sexual or sexually transmitted infections (STIs) are infections that are transmitted from one individual to another through sexual contact.(AIDSinfo, 2020) Some sexually transmitted infections can also be transmitted through other means such as blood or other blood products, infections from one person to another through sexual contact.(AIDSinfo, 2020) Some of these sexually transmitted infections can also be transmitted through other means such as blood or other blood products, infections from people who have been diagnosed with chronic disease, who have suffered from chronic pregnancy, diabetes , more than 500 million people live with genital herpes infection and 300 million people have HPV infection which is the main cause of cervical cancer. (WHO, 201) In Indonesia, the most common STIs are anogenital warts, gonorrhea, and syphilis. (Romawi, 2018) In addition, people with HIV-AIDS in Indonesia also experience an increase every year. Based on the 2018 Indonesian Health Profile Data and Information report, the number of new and cumulative AIDS cases was 114,065 people.(Budijanto, Sibuea, Widiyanti, Indrayani, 2018) East Java is the area with the highest HIV sufferer rate of 8,608 people, followed by DKI Jakarta with 6,896 people and Central Java with 5,400 people.

Based on WHO data, the prevalence of people with sexually transmitted infections will continue to increase and insecurity is constantly being done. (WHO, 2019) This is due to changes in modern life styles and an increasingly free mind. If the increase in prevalence of people with STIs is directly proportional to the increase in the number of population each year, it can be indicated that the occurrence of symptoms is triggered by sexually transmitted infections due to the freedom of sexual behavior which is not balanced with the use of condom-like safeguards in the following years.

There is an increase in the prevalence of sexually transmitted infections in various worlds, making sexually transmitted infections a matter that is taken seriously and prevention and treatment is necessary. (WHO, 2019) One of the efforts to reduce the prevalence of sexually transmitted infections is to provide intelligence to the public about this infection.



provide information that can be accessed quickly and freely through various media, one of which is social media, such as YouTube. (Basch, Menafo, Mongiovi, Hillyer, 2016)

YouTube is the most popular social media used by more than 25.19 billion people per month, with this great potential YouTube is a platform that the public uses to get various forms of non-formal health information. However, it can also be used to spread misleading or invalid information. (Basch, Menafo, Mongiovi, Hillyer, 2016) In YouTube there are many videos that contain health information, one of which is sexually transmitted infections or STD (sexual transmitted diseases). The video upload contains a lot of information such as a global picture of STIs, causes of STIs, symptoms of STIs, STD risk factors, STD effects, STI prevention, STI diagnosis, community services for STI sufferers, and others. There are 110 videos in a period of a year with the keyword search for sexually transmitted infections. With the largest number of viewers 18 thousand people in one of the videos.

With the great potential that YouTube has for the dissemination of health information, this research has an important role in finding out what variables are what constitute the quality of a video content. Based on the background, the following research questions are formulated. "Is there a relationship between the number of views, likes, and comments with the content, duration, packaging, and source of video ownership?"

METHOD

This type of research is a quantitative analytic study using a content analysis method and a cross-sectional approach which aims to prove the relationship between the variables of content freedom, duration, packaging, source of video ownership with the following variables: number of views, likes, comments. The population in this study were 218 videos which were the results of the last year search (March 2019 - March 2020) in the YouTube search column with two keywords, namely sexually transmitted infection; HIV / AIDS in Indonesia.

- The criteria in this study are:



- a. Videos which are the results of searches in the YouTube search column with two keywords, namely, sexually transmitted infection; HIV / AIDS in Indonesia.
- b. Videos uploaded are in the timeframe of March 2019 to March 2020.
- c. Videos containing information about sexually transmitted infections and HIV / AIDS in Indonesia.
- The exclusion criteria in this study are:
 - a. The same two videos are different from the uploader (videos will be selected based on the earlier upload date).
 - b. Audio is damaged.
 - c. Videos have technical problems such as video clipping and unclear video visualization.

The data analyzed were the number of views, likes, comments with content, duration, packaging, and source of video ownership. There were two data analyzes, namely univariate analysis and bivariate analysis using statistical software programs with the chi-square test with $\alpha = 0.05$.

RESULTS AND DISCUSSION

Univariate Results

Number of Viewers, Number of Likes, Number of Comments						
Variabel	Jumlah		Mean	Median	Minimum	Maksimum
	f	%				
Jumlah Viewers						
Sedikit	118	54,1	3550,55	224,00	1	370456
Banyak	100	45,9				
Jumlah Likes						
Sedikit	112	51,4	55,37	4,00	1	5400
Banyak	106	48,6				
Jumlah Comments						
Sedikit	162	74,3	14,51	1,00	1	1293
Banyak	56	25,7				

Based on the above table, on the variable number of viewers, there were more videos with the least number of viewers as many as 118 videos (54.1%). This study shows that STI



video content containing information on the risks, symptoms, and basic information of STIs has the highest number of views. A survey conducted by JAKPAT stated that only 27% of YouTube viewers use YouTube as an information medium, while 42% of YouTube viewers use YouTube to view trending videos ($n = 1,114$). especially regarding STIs.

In the variable number of likes, there were more videos with the least likes as many as 112 videos (51.4%), which means that the IMS video content on YouTube is not good enough to give positive impression to the Indonesian people, this is because IMS is a taboo topic and It is serious for the people of Indonesia, so it is still difficult to talk about or make STI video content that is free from stereotypes about STIs that already exist in society. This research also shows that STI video content that contains information about risk factors, symptoms, and basic STI information has a number of likes the tallest.

In the variable number of comments, there were more videos with less comments, namely 162 videos (74.3%), which means there are still many IMS information videos that do not generate strong sentiment towards the audience.(Park, Naaman, Berger, 2016) This is influenced by low emotionality and intensity of content the IMS video leaves a YouTube audience. This study also shows that the STI video content which contains information on risk factors, symptoms, and basic STI information has the highest number of comments.

Content, Duration, Packaging, Source of Video Ownership

Variable	Total	
	f	%
Video Content		
Incomplete	110	50,5
Complete	108	49,5
Durasi Video		
Short	77	35,3
Long	141	64,7
Video Packaging		
Presentation	96	44,0
News	28	12,8
Talkshow	15	6,9
Slides	67	30,7
Others	12	5,5



**Video Ownership
Resources**

NGO	16	7,3
Government	36	16,5
Company	128	58,7
Ordinary people	38	17,4

In the video content variable, there were more STI videos that were incomplete, the content was 110 videos (50.5%). The purpose of the IMS video content can be divided into categories, namely educating, persuading, and scaring. Another interesting finding from this research is that there are 77 videos of STI information, but also contains denature herbal medicine advertisements. In this advertisement there is invalid information such as herbal medicine can cure STIs permanently, consultation on STI disease diagnosis can be done online, and there are persuasive words to use herbal medicine when shy and reluctant to treat a doctor.

In the video duration variable, the most long-duration IMS videos were 141 videos (64.7%). This can be explained based on the tendency of STI video content that contains various forms of information regarding STIs, so that it is made in the form of a video and maximizes the content of the complete imagery to produce a video that is of sufficient length.

In the video packaging variable, Indonesians liked the presentation packaging form the most, with 96 videos (44.0%), with a specification of 85 informal presentation videos and 11 formal presentation videos, followed by slides of 67 videos (30.7%), and 28 videos (12.8%). . Other video packaging categories (35.3%) are tutorial: 2 videos, vlog: 4 videos, drama: 3 videos, 2 testimonials: videos, and quizzes: 1 video.

In the variable of video ownership sources, companies uploaded the most IMS videos, namely 128 videos (58.7%), with details of which were dominated by denature herbal companies, namely 77 videos. This is an interesting phenomenon because the IMS information videos uploaded by the government are only 36 videos (16.5%).), much less than videos uploaded by companies (58.7%).

The categories of government can be divided into cities, universities and schools. From the above statement, it can be concluded that there is still a lack of government role in



providing health information through YouTube social media. This is supported by the fact that there is no fact that YouTube channels specifically belong to the Indonesian Ministry of Health.

The following is an explanation of the frequency distribution based on the video content:

**Distribution Frequency of Content Related Video Content Infection Sexual
Transmission; HIV / AIDS in Indonesia**

No	Sexually Transmitted Infections related Video Content	Available		Unavailable		Total	
		f	%	f	%	f	%
1.	Information regarding an overview of STIs						
	Definition of STI	137	62,8	81	37,2	218	100
	The latest IMS data	45	20,6	173	79,4	218	100
	Development of IMS	21	9,6	197	90,4	218	100
2.	Causes of STIs						
	Mention one type of pathogen	92	42,2	126	57,8	218	100
3.	STI symptoms						
	Sores or abrasions on the area around the genitals, anus, and mouth.	41	18,8	177	81,2	218	100
	Experiencing changes in urine.	21	9,6	197	90,4	218	100
	Pain or heat when urinating.	46	21,1	172	78,9	218	100
	Unusual discharge from the genitals (penis or vagina).	43	19,7	175	80,3	218	100
	The genitals are swollen, itchy, and painful.	59	27,1	159	72,9	218	100
	Pain during sex.	35	16,1	183	83,9	218	100
	Warts or bruises.	23	10,6	195	89,4	218	100
	Fever.	34	15,6	184	84,4	218	100
	Pelvic or lower abdominal pain.	27	12,4	191	87,6	218	100
	Abnormal discharge or vaginal bleeding.	38	17,4	180	82,6	218	100
4.	Risk factors for STIs						
	Unsafe sex	95	43,6	123	56,4	218	100
	Multi partner sex	44	20,2	174	79,8	218	100



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	Have a history of STIs	16	7,3	202	92,7	218	100
	Contact with bodily fluids with an infected person	45	20,6	173	79,4	218	100
	Contact with membrane tissue or skin with infected patients	62	28,4	156	71,6	218	100
	Use of a needle or syringe together	40	18,3	178	81,7	218	100
	Transmitted from mother to child	62	28,4	156	71,6	218	100
	Change of clothes	1	0,5	217	99,5	218	100
5.	Impact of STIs						
	Depends on one of the sexually transmitted infections	82	37,6	137	62,4	218	100
6.	STI prevention						
	Comprehensive sex education tailored to the needs of the target.	13	6,0	205	94,0	218	100
	Promote correct and consistent condom use.	37	17,0	181	83,0	218	100
	Counseling when undergoing testing for sexually transmitted infections and HIV.	9	4,1	209	95,9	218	100
	Safe sex is supported by the use of condoms	35	16,1	183	83,9	218	100
	Safe sex with only one person, who has no history of STIs.	42	19,3	176	80,7	218	100
	Limits the number of partners with multiple sex partners.	4	1,8	214	98,2	218	100
	Avoid the possibility of drinking too much alcohol	3	1,4	215	98,6	218	100
	Avoid getting tattoos, body piercing, or doing acupuncture.	8	3,7	210	96,3	218	100
	Avoid using it with razors, toothbrushes, or needles.	1	0,5	217	99,5	218	100
	Sexually transmitted infection interventions to key populations, such as	2	0,9	216	99,1	218	100



	commercial sex workers, male sex workers (MSM), and active needle users.						
	Vaccination for hepatitis B and HPV.	7	3,2	211	96,8	218	100
7. Diagnosis of STIs							
	Blood test / urine test / sample in liquid form	23	10,6	195	89,4	218	100

Based on the content of the video, the distribution of frequency shows that the most information found in videos related to STIs is the definition of Sexual Transmission Infection (62.8%), while the least information is the spread of STIs through changing clothes (0.5%) and prevention of STIs by avoiding use with razors, toothbrushes, or needles (0.5 %).

The results of this study indicate that most information on STI risk factors includes unsafe sex (43.6%) such as sex with multiple partners, multiple partners, and not using condoms. Based on the book *The Hidden Epidemic: Confronting Sexually Transmitted Diseases* The biggest risk factor for STI transmission is by having unsafe sex. (Eng, Butler, 1997) If the results of this study are linked to unsafe behavior in Indonesia, especially in adolescents, then these problems are very closely related.

The results of the SKRRI survey in 2012 stated that there were 3.7 million women who had sex as early as this, this is very much related to unsafe sexual behavior because the giving of sex in Indonesia is very minimal, so that the knowledge of adolescents is equally as sexual as well as pre-marital sex is still very lacking, in addition to the appearance of the reproductive organs as poorly as adults.

These are the main factors, the increase in safety behavior which is the biggest factor in the spread of STI. (Eng, Butler, 1997)

The results of this study indicated that the most information on STI prevention was about sex with one person alone (19.3%). Based on the book *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*, the main prevention in reducing the transmission of STIs is a safe symptom of hyperylacusex. Premarital behavior, will affect the behavior and insecurity that is carried out in the future, becomes a picture that should be worried about The low development of information systems on STIs, inadequate health services regarding STIs,



and regulatory policies regarding key populations, are further challenges for the Indonesian government.

Bivariate Results

Independent Variable	Total of Viewers						p-value	Hypothesis
	Total of Viewers							
	a little (n=118)		Lots (n=110)		Total (n=218)			
	f	%	f	%	f	%		
Video Content								
Incomplete	53	48,2	57	51,8	110	100	0,075	Ho accepted
Complete	65	60,2	43	39,8	108	100		
Video Duration								
Short	42	54,5	35	45,5	77	100	0,927	Ho accepted
Long	76	53,9	65	46,1	141	100		
Video Packaging								
Presentation	49	51,0	47	49,0	96	100	0,341	Ho accepted
News	13	46,4	15	53,6	28	100		
Talkshow	8	53,3	7	46,7	15	100		
Slides	43	64,2	24	35,8	67	100		
Others	5	41,7	7	58,3	12	100		
Video Ownership Resources								
NGO	2	12,5	14	87,5	16	100	0,001	Ho rejected
Government	22	61,1	14	38,9	36	100		
Company	67	52,3	61	47,7	128	100		
Ordinary people	27	71,1	11	28,9	38	100		

Based on the table above, the variable that has a relationship with the number of viewers is the source variable of video ownership. The results of this study are in line with previous research conducted by Marijke (2017) which states, the source of video ownership



affects the reputation of a YouTube channel. (IM, 2020) A YouTube channel that focuses on specific topics can build a good reputation in the eyes of the public, so that more people will get it. subscribers, like what NGOs do, namely discussing HIV / AIDS.(Im, 2020) The more subscribers, the greater the chance to be watched by many people.

And what has no relationship are the variables of video content, duration, and video packaging.

Number of Viewers-Video Content: The results of this study were conducted with previous research conducted by Soo (2013) which stated, videos that have complete content tend not to get much attention (the number of viewers is small), this is due to the complexity of the content of IMS video content, in addition to other entertainment video content, even though video content is higher than IMS. with complete content is very important to be known by the general public.

Number of Viewers-Duration of Videos: The results of this study are not in line with previous research conducted by Matters (2020) which states that YouTube videos are the most popular including short duration videos. (Matters, 2020) While in this study, both the number of views is a little bit or a lot, long duration videos are still higher in number. This is because in a long duration there is a more complete video content.

Number of Video Packaging Views: The results of this study are not in line with previous research conducted by Weizhou Tang (2017) which stated that videos with testimonial packaging had more viewers.(Tang, Olscamp, Choi, Friedman, 2017) While in this study, videos with presentation packaging and slides had the most number of viewers . It is important for YouTube users to understand the needs and wants of viewers in packaging a video, so that viewers are interested in seeing it.

Independent Variable	Total of Likes						ρ-value	Hypothesis
	Total of <i>Likes</i>							
	A Little		Lots		Total (n=218)			
	(n=112)		(n=116)					
	f	%	f	%	f	%		
Video Content								
Incomplete	58	52,7	52	47,3	110	100	0,687	Ho accepted



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Complete	54	50,0	54	50,0	108	100		
Video Duration								
Short	45	58,4	32	41,6	77	100	0,123	Ho accepted
Long	67	47,5	74	52,5	141	100		
Video Packaging								
Presentation	42	43,7	54	56,3	96	100		
News	15	53,6	13	46,4	28	100	0,000	Ho rejected
Talkshow	4	26,7	11	73,3	15	100		
Slides	49	73,1	18	26,9	67	100		
Others	2	16,7	10	83,3	12	100		
Video Ownership								
Resources								
NGO	1	6,3	15	93,7	16	100	0,000	Ho rejected
Government	9	25,0	27	75,0	36	100		
Company	85	66,4	43	33,6	128	100		
Ordinary people	17	44,7	21	55,3	38	100		

Based on the table above, the variables that have a relationship with the number of clicks are the packaging variable and the source of video ownership.

Total of Videos-Packed Likes: The results of this study were conducted with previous research conducted by Heer Vyas (2015) which stated that video packaging affects the viewing pleasure level of a display.(Vyas, 2015) Presentation is the most popular packaging for Indonesians. Presentations have a high selling value due to good visualization and audio support that adds information about a video issue.

Total of Likes - Video Ownership Sources: The results of this study were conducted with previous research conducted by Dustin (2016) which stated that public trust in the YouTube channel that is followed will affect the appreciation of videos that have been watched.(Welbourne, Grant, 2016) The results of this study state that NGOs are trusted YouTube channels so that they get a lot of clicks in the category of the number of clicks. An identifiable NGO-owned YouTube channel has quality and reliable video content for information on sexually transmitted infections.

And what has no relationship is the variable content and video duration.



Total of Likes-Video Content: The results of this study are not in line with previous research conducted by Pijoh (2017) which states that complete video content will affect the responses given to a video by the public. (Caecilia, Kindangen, Tumewu, 2017) The results of this study state that more incomplete video content gets likes. Therefore, YouTube channel owners must create video content that is entertaining and interesting, but also pay attention to the video content.

Total of Videos-Duration of Hikes: The results of this study are not in line with previous research conducted by Matters (2020) which states that the most popular YouTube videos are included in short duration videos. (Matters, 2020) This research states that videos with long duration have a large number of clicks, this is not in line with previous studies which stated that the video content was shorter in duration.

Total of Comments								
Independent Variable	Total of <i>Comments</i>						p-value	Hypothesis
	A Little (n=162)		Lots (n=56)		Total (n=218)			
	f	%	f	%	f	%		
Video Content								
Incomplete	79	71,8	31	28,2	110	100	0,395	Ho accepted
Complete	83	76,9	25	23,1	108	100		
Video Duration								
Short	63	81,8	14	18,2	77	100	0,061	Ho accepted
Long	99	70,2	42	29,8	141	100		
Video Packaging								
Presentation	70	72,9	26	27,1	96	100	0,000	Ho rejected
News	17	60,7	11	39,3	28	100		
Talkshow	7	46,7	8	53,3	15	100		
Slides	63	94,0	4	6,0	67	100		
Others	5	41,7	7	58,3	12	100		
Video Ownership Resources								
NGO	7	43,7	9	56,3	16	100	0,013	Ho rejected
Government	24	66,7	12	33,3	36	100		
Company	101	78,9	27	21,1	128	100		
Ordinary people	30	78,9	8	21,1	38	100		



Based on the table above, the variables that have a relationship with the number of comments are the packaging variable and the source of video ownership.

Total of Comments-Video Packaging: The results of this study are in line with previous research conducted by Zhe Qu (2008) which states, the ease and completeness of obtaining information can stimulate other YouTube users to comment in the form of questions or appreciation regarding video content that has been seen. (Qu Zhang, Li, 2008) The results of this study state that the packaging of the video presentation and slides makes it easy for the public to get complete information with a limited time, thus giving rise to a response, namely comments on the experience gained when watching a video, comments can be in the form of statements or questions.

Total of Comments - Video Ownership Sources: The results of this study are not in line with previous research conducted by Alexandru (2011) which states that the credibility and popularity of a YouTube channel can stimulate other users to respond to video content by providing comments. (Tatar, Antoniadis, Amorim, Leguay, Limbourg, Fdida, 2011) The company is the owner of the channel YouTube with the most comments, but this is not in accordance with previous research, that the credibility and popularity of a YouTube channel affects the number of comments. There are governments and NGOs that have higher credibility compared to companies, but this is in line with the theory which states that one comment from a YouTube user can stimulate other YouTube users to provide feedback in the form of other comments, thereby causing interaction between YouTube users.

CONCLUSION

The result of this research states that the number of views is related to the source of video ownership, the number of clicks is related to the packaging and the source of the video ownership, the number of comments is related to the packaging and the source of the video ownership. From the relationship test above, it can be seen that the packaging and source of video ownership greatly affect the quantity and quality of the IMS information video. Therefore, to increase promotion and prevention of the incidence of IMS, the government is expected to make efforts to create a YouTuber channel owned by the Ministry of Health of



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the Republic of Indonesia and create a health information video especially about IMS and upload it on the personal page of the Indonesian Ministry of Health, so that the community has a quality health information video source.



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