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**Effectiveness Of Utilizing Educational And Information Media To Improve Knowledge And Attitude In Prevention Of Infectious Diseases In Passengers At The Pulogebang Integrated Terminal Indonesia**Novia Nuraini<sup>1\*</sup>, Abdul Aziz<sup>2</sup>, Rosidawati<sup>3</sup>, Arya Duta Lihanda<sup>4</sup>, Achmad Ikramul Aufa<sup>5</sup>, Rakha Rasika Risquallah<sup>6</sup><sup>1,2,3, 4,5,6</sup> Department Of Health Promotion, Polytechnic Of Health Of Jakarta III, Ministry of Health, Indonesia**ABSTRACT**

Infectious diseases are a public health problem that can spread very quickly, especially in public places with high mobility and social interaction. The study aims to determine the effectiveness of the use of educational and information media in terminals as an effort to prevent infectious diseases. The quasi-experimental research method without a control group to determine the effectiveness of animated videos and booklets as a means of educating passengers on the prevention of infectious diseases at the Pulogebang integrated terminal. The research sample was 80 passengers, the first group was given animated videos, and the second group was given booklets with the same material. Observations were made at that time and the results of the study showed an increase in knowledge in the Animated Video group by 1.02 and in the Booklet group by 1.44. There was an increase in attitudes in the Animated Video group by 2.40 and in the Booklet group by 1.26. The results of the analysis showed a significant difference in attitudes before and after the intervention with a p value of 0.000 (<0.05). Conclusion, animated video media is more effective in increasing passenger understanding and attitudes towards the prevention of infectious diseases than booklet media.

**Keywords:** Video Animation, Booklet, Passengers, Terminal

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\*Email: [pengmasdanpenelitian@gmail.com](mailto:pengmasdanpenelitian@gmail.com)**1. Introduction**



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Infectious diseases are a public health problem that can spread rapidly, especially in public places with high mobility and social interaction (WHO, 2020). As a form of prevention, information and education communication media have an important role in increasing public awareness and knowledge about the dangers of infectious diseases and effective ways to prevent them (Mulyadi, 2019). Information media such as posters, banners, and appeals through loudspeakers can provide a better understanding for the public about the importance of maintaining cleanliness, wearing masks, and washing hands as preventive measures (Handoko, 2021). Infectious diseases are still a major threat in Indonesia, especially in densely populated areas and crowded public places such as terminals, stations, and ports. Indonesia, which has more than 273 million people with high mobility, has recorded an increase in cases of infectious diseases such as COVID-19, tuberculosis, and Dengue Hemorrhagic Fever (DHF) in recent years (RI., 2021). According to data from the Ministry of Health, in 2020, COVID-19 cases reached more than 1.5 million, while dengue cases reached 100 thousand in the same period (RI., 2020). This condition shows the importance of an effective health communication strategy in public places, so that the public can anticipate and prevent the spread of infectious diseases. Research shows that one effective way to increase public knowledge and awareness is to utilize information media available in public places (Sudibyo, 2020). This information media includes posters, banners, bulletin boards, and reminders via loudspeakers. This media can reach various levels of society quickly and provide health messages that are easily understood by the wider community (Kusumawardani, 2021). For example, in a study conducted in West Java, it was found that 78% of respondents admitted to receiving information related to COVID-19 from media in public places, and 65% of them considered the information useful in forming new habits such as wearing masks and maintaining distance (Purnomo, 2021).

The involvement of public facility managers is also an important aspect in supporting the success of this information media. Managers have a strategic role in ensuring the delivery of information that is consistent and in accordance with health standards, both in terms of visuals and the messages conveyed (Prasetyo, 2021). With proper training, public facility managers can help place information in areas that are easy to see and ensure





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that the health messages provided remain relevant to current conditions. In the long term, the involvement of these managers is expected to create a culture of healthy living among people who are active in public places.

This study also found a number of obstacles faced in the implementation of information media in public places. These obstacles include the low level of public health literacy, the placement of information media that is not strategic, and limited funds to maintain and update the information media regularly (Utami, 2020). For example, in certain terminals or stations, posters placed in high-traffic locations are often damaged or not updated, making the health messages delivered less effective. These obstacles show that even though information media are available, their effectiveness in increasing public awareness and behavior still requires attention and adjustment. This study was conducted to determine the effectiveness of the use of educational and information media in terminals as an effort to prevent infectious diseases. The results of this study are expected to provide input for public facility managers and related parties in improving health education strategies in public spaces.

## 2. Research Method

This study used a quasi-experimental method without a control group for passengers at the Pulogebang integrated terminal. Respondents were given intervention through animated videos and booklets 2 (two) times before and after the activity. With a One Group Post-test-Only Design research design. A total of 80 were divided into 40 respondents in the Animation video group and 30 in the booklet group according to the inclusion and exclusion criteria. This study was conducted in August 2024. The research instruments used were a Pre-post test questionnaire to measure knowledge and attitudes, animated videos and booklets as educational media. Data analysis was carried out in a univariate manner to determine the description of age, education, medical history, and sources of information, as well as bi-variate analysis with the T-Test to assess differences in knowledge and attitudes of the animation and booklet groups, as well as multivariate analysis, to assess differences in knowledge and attitudes of infectious disease transmission between the two groups.

## 3. Results and Discussions



**a. Result**

Table 1 Distribution of Respondent Characteristics

| Variables                           | Video |      | Booklet |      | Total |       |
|-------------------------------------|-------|------|---------|------|-------|-------|
|                                     | N     | %    | N       | %    | N     | %     |
| <b>Age</b>                          |       |      |         |      |       |       |
| - < 20 and > 35 Year                | 13    | 32.5 | 10      | 25,0 | 23    | 28.8  |
| - < 35 Year                         | 27    | 67.5 | 30      | 75,0 | 57    | 71.2  |
| <b>Education</b>                    |       |      |         |      |       |       |
| Elemntary-Junior High School        | 8     | 20.0 | 10      | 25,0 | 18    | 22,5  |
| High School-University              | 32    | 80.0 | 30      | 75,0 | 62    | 77,5  |
| <b>Knowledge</b>                    |       |      |         |      |       |       |
| Yes                                 | 18    | 45.0 | 15      | 37,5 | 33    | 41.2  |
| No                                  | 22    | 55.0 | 25      | 62,5 | 47    | 58.8  |
| <b>Source of Health Information</b> |       |      |         |      |       |       |
| School                              | 10    | 25.0 | 8       | 20.0 | 18    | 22,5  |
| Family                              | 7     | 17,5 | 8       | 20.0 | 15    | 18,75 |
| Internet/Social Media               | 16    | 40.0 | 19      | 47.5 | 35    | 43,75 |
| Friends                             | 7     | 17,5 | 5       | 12,5 | 12    | 15    |

The table above shows that the video group is aged <35 years, which is 67.5%, while the booklet group is mostly aged <35 years, which is 75%. Based on education level, the video group is mostly at the High School-University level, which is 80%, while the comic group is mostly at the High School-University level, which is 75%. Based on knowledge about disease transmission, most of the animation and booklet groups do not know about disease transmission, which is 55.0% and 62.5% respectively. The sources of information obtained by the animation and booklet groups mostly come from the Internet/Social Media, which is 40.0% and 47.5% respectively.

 Table 2:  
 Differences in Understanding Infectious diseases  
 Before and After video and Booklet

| Group   |           | Mean | SD   | Min-Max   | P value* |
|---------|-----------|------|------|-----------|----------|
| Video   | Pre-test  | 2.13 | 0.51 | 2.00-3.00 | 0.000    |
|         | Post-test | 3.17 | 0.87 | 2.00-4.00 |          |
| Booklet | Pre-test  | 2.27 | 0.69 | 2.00-4.00 | 0.000    |
|         | Post-test | 3.67 | 0.76 | 2.00-4.00 |          |

\*T-Test





The following is the difference in understanding of infectious diseases before and after being given videos and booklets. The results of the study showed an increase in understanding in the video and booklet groups of 1.04 and 1.44, respectively. The results of the analysis showed a significant difference in knowledge before and after being given booklets and videos with a p value of  $0.000 < 0.05$ .

Table 3 :  
 Differences in Infectious diseases Attitudes  
 Before and After Video and Booklet

| Group   |           | Mean | SD   | Min-Max   | P value* |
|---------|-----------|------|------|-----------|----------|
| Video   | Pre-test  | 1.23 | 0.43 | 1.00-2.00 | 0.000    |
|         | Post-test | 3.43 | 0.63 | 2.00-4.00 |          |
| Booklet | Pre-test  | 1.47 | 0.82 | 1.00-4.00 | 0.000    |
|         | Post-test | 3.03 | 0.61 | 2.00-4.00 |          |

\*T-Test

The following is the difference in attitudes towards infectious diseases before and after being given video and booklet. The results showed increased attitudes in the video and booklet groups by 2.20 and 1.56, respectively. The analysis results show a significant difference in attitudes before and after being given booklet and video with a p-value of  $0.000 < 0.05$ .

Table 5  
 Differences in Understanding and Attitudes Towards Stunting  
 Between Comic and Animation Groups

| Variables     |                           | Mean | SD   | Mean Difference | P value* |
|---------------|---------------------------|------|------|-----------------|----------|
| Understanding | Booklet Post-test         | 3.17 | 0.87 |                 | 0.021    |
|               | Video Animation Post-test | 3.67 | 0.76 | -0.50           |          |
| Attitude      | Booklet Post-test         | 3.03 | 0.61 |                 | 0.015    |
|               | Video Animation Post-test | 3.43 | 0.63 | -0.40           |          |

\*Logistic Regression

The table above shows that the average understanding of infectious diseases after being given booklets is 3.17, while the average understanding after being given video is 3.67. The analysis results show a significant difference in knowledge between





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the booklet group and the animation group ( $p\ 0.021 < 0.05$ ). The results of the analysis show that providing education using video is more effective in increasing understanding of infectious diseases than providing education using comics.

The table above shows the average attitude towards infectious diseases in the booklet and video groups. The average attitude towards infectious diseases after being given comics was 3.03, while the average attitude towards stunting after animation was 3.43. The analysis results show a significant difference in attitude between the booklet group and the video group ( $p\ 0.015 < 0.05$ ). The analysis results show that providing education using video is more effective in improving attitudes towards infectious diseases than providing education using booklets.

**b. Discussion****1. Respondent Characteristics****a. Age**

The results of the study showed that almost all respondents to animated and comic media were aged  $<35$  years with a percentage of 67.5% and 65.0%, respectively. Adult age  $<35$  years is a very appropriate age because most of that age are very concerned about information about health experiencing infectious diseases. At that age, adults are vulnerable to health problems of infectious diseases which if not addressed immediately will affect health status in the future. Therefore, education regarding understanding and attitudes towards preventing infectious diseases is highly recommended. (Mughtar et al., 2023).

Education is a formal and informal learning process that aims to develop individual knowledge, skills, and attitudes. In this study, education refers to the last level of education taken by respondents. The level of education can affect respondents' understanding of educational messages conveyed through videos and booklets. Respondents with higher education tend to have better abilities in understanding and interpreting health information.

**b. Education**

Based on education level, the video group has the highest High School-University level, which is 80.0% and the booklet group has 75.7%. Education





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c. Knowledge about infectious diseases

In the group based on knowledge of infectious diseases, the animated video group and the booklet group were mostly unaware of infectious diseases, namely 55.0% and 62.5%, respectively. Knowledge of infectious diseases includes respondents' understanding of infectious disease conditions, causes, long-term impacts, and how to prevent them. Respondents' initial understanding can determine how much benefit education through animated videos and booklets provides. This study evaluated whether educational media can improve their understanding of infectious diseases. There was a significant increase in adolescent knowledge about infectious diseases after being given education.

d. Source of Information

In the Information Source variable, 40.0% and 47.5% of the information obtained by the animated video and booklet groups. The source of information is how respondents obtain information related to the definition of infectious diseases, for example through school, the internet, social media, family, or health services. Knowing the main source of information for respondents can help understand their information access patterns so that animated video and booklet media can be designed according to their preferences. The internet, social media are one of the main places for respondents to get information about





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preventing infectious diseases. Most respondents spend a lot of time at work, so public places effectively convey health information, including the prevention of infectious diseases. The government and related institutions often implement health programs in public places.

e. Understanding of Infectious Diseases Before and After Booklet and Video Animation

In the variable of understanding of infectious diseases before and after being given booklets and animated videos. The results of the analysis showed a significant difference in knowledge before and after being given booklets and animated videos with a p-value of  $0.000 < 0.05$ , so there is a meaningful relationship between knowledge before and after education. The results showed that there was an increase in understanding in the animated video and booklet groups of 1.02 and 1.44 respectively, so it can be concluded that there was an increase in the use of animated video media, there was an increase in knowledge of 1.02 from before and after education than booklet media.

f. Differences in Stunting Attitudes Before and After Booklets and Video Animations

There are variable differences in attitudes towards infectious diseases before and after being given booklet's and video animations. The analysis results show a significant difference in attitudes before and after being given booklet's and video animations with a p-value of  $0.000 < 0.05$ . The results showed increased understanding in the video animation and booklet's groups by 2.20 and 1.56, respectively. So it can be concluded that there was an increase in the use of animation media and an increase in attitude by 2.20 from before and after education than the use of booklet's press.

#### 4. Conclusion

The results showed increased understanding in the groups given education through video animation and booklet's, with an increase of 1.02 and 1.44, respectively. This concludes that animation media is more effective in increasing knowledge than booklet's media. Further analysis showed a significant difference in attitude before and after the





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intervention, with a p-value of  $0.000 < 0.05$ . The increase in mentality in the video animation group was 2.20, and in the booklet's group, it was 1.56, indicating that the video animation media was also more effective in changing attitudes.

Counseling through animation media is needed to improve respondents' understanding and attitudes towards preventing infectious diseases. Terminals are expected to use animation media to provide education on preventing infectious diseases to passengers.

## 5. Compliance with ethical standards

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### Disclosure of conflict of interest

This research collaboration is positive for all researchers, so conflicts, problems and others are absolutely no problem for all writers.

### Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

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