



A Comparative Study of Health Protocol Knowledge through Storytelling in Elementary Students

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Abstract

The Center for Health Communication Studies, Faculty of Communication, Universitas Padjadjaran, produced a comic book entitled "Healthy and Cheerful during the Pandemic." This comic book was created as one of the media to prepare elementary school students to enter face-to-face learning after more than a year of distance learning due to the pandemic. This study aimed how to compare elementary school students' knowledge on the application of health protocols before and after the comic was read. This study used a comparative design, followed by quantitative analysis. The study population consisted of 100 elementary students of the 3rd and 4th levels. The steps taken in this study were: first, students filled out a questionnaire in the form of 10 illustrated questions regarding the health protocol application at home and school. Then, students were given an intervention by reading a comic book by a storyteller. After the intervention, the students again filled out the questionnaire to determine changes in students' knowledge. The paired T-test results showed sufficient evidence that there was a significant difference between knowledge before and after the intervention. It could be seen from the value of $t = -2.764$ $p < 0.05$. The results of this study indicated an increase in the average knowledge

of respondents on the health protocol application compared to before reading of the comic book. It can be concluded that the storytelling method can increase elementary school students' knowledge on the health protocol application.

Keywords

comparative study; comic book; health promotion; covid-19; storytelling

Introduction

In May 2020, the South China Morning Post (SCMP), through its website, listed Indonesia as one of the countries with the highest child mortality rate due to Covid-19 (SCMP, 2020). According to SCMP, the death rate for people under 18 in Indonesia on 22 May 2020 was 2.1% of the total deaths. This figure is higher than the United States, which is 0.1% of deaths of people under 24 years. Meanwhile, Brazil recorded a 1.2% mortality rate for children under 19 years.

The government's efforts to prevent the spread of this virus have been carried out in various ways. These include the establishment of a Covid-19 task force, vaccination, provision of health service centers, implementing Large-Scale Social Restrictions (PSBB) (Ministry of Health RI 2020), Distance Education (Ministry of Education and Culture 2020), and Enforcement of Restrictions on Community Activities (Ministry of Economic Coordination of the Republic of Indonesia). Indonesia 2021).

In July 2021, Indonesia experienced another spike in the second wave of Covid-19 cases, which caused the government to restrict community activities again. In October 2021, the Covid-19 task force, through its spokesman, announced that the number of Covid-19 cases in Indonesia had decreased for 13 weeks from the second spike in cases in July 2021 (BNPB Indonesia, 2021). We note, based on data from the Covid-19 Task Force website, when compared to the map of the distribution of Covid-19 cases that afflicted the age group 6-18 years in October 2020 and October 2021, it is known that the positive, treated, and recovered numbers increased by an average of 3%. On the other hand, death cases have decreased by 0.4% from the overall figure (Covid-19 Handling Task Force 2021).

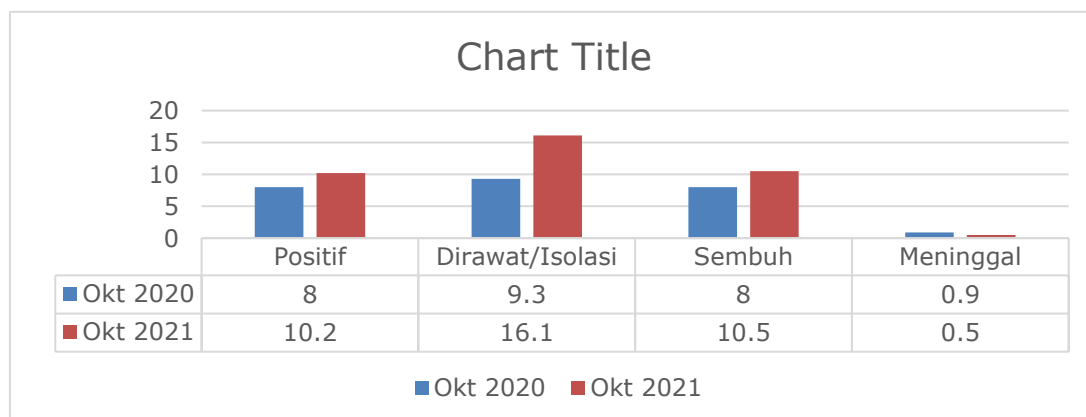


Figure 1. Distribution of the number of Covid-19 cases aged 6-18 years
Source: Covid-19 Handling Task Force 2020, 2021

Various strategies are still needed to reduce the number of cases in the 6-18 year age group. Appropriate communication to specific target groups, especially children of primary school age, is very urgent. This is important considering that face-to-face schools have reopened. The risk of being exposed to the coronavirus in the age group 6-12 years is greater than the age group 12-18 because the age group 6-12 years has not received the vaccine.

This has become a concern for the Center for Health Communication Studies, Faculty of Communication Sciences, Padjadjaran University, by producing a picture story or comic with the title "Healthy and Cheerful during the Pandemic." This comic tells the daily life of a child named Jojo and his family who live in Jatinangor District, Sumedang Regency. Jojo is a bright, cheerful child and has many friends. The comic "Sehat Ceria di Masa Pandemi" is the first comic series about Jojo's first day back at school face-to-face after studying from home for a while. It suggests that the characters in this comic are trying to adapt to health protocols when doing activities and socializing in their surroundings. Jojo's character is adapted to the characteristics of elementary school children, namely happy to play, content to move, happy to explore in groups, and happy to feel and do things directly (Alim, 2009).



Figure 2. Cover of the Komik *Sehat Ceria di Masa Pandemi*

Source : Pusat Studi Komunikasi Kesehatan, 2021

The habit of implementing health protocols during the new habit period needs to be socialized to children, especially elementary school students who will

carry out face-to-face education. Giving advice, maintaining health, and adapting behavior to elementary school-age children require conveying strategies and media. If the goal is to change behavior, then complex health advice for children needs to be given in illustrations, not instructions. Visual narrative, as in comics, can be a bridge between information and entertainment (McNicol, 2017).

Comics are simple, straightforward, and easy to understand media. Besides, comics also have extraordinary appeal so that the messages and information to be conveyed will be readily accepted and not seem patronizing (Ansari et al., 2020). Comics are also a place to channel children's emotions; children can also imitate the behavior of the characters they like (Palgunadi, 2020).

A study found that the potential of comics in the health environment has not been fully utilized, even though health education comics can strengthen understanding, increase awareness, overcome embarrassment, fight stigma and reflect on the readers themselves (McNicol, 2017). However, health workers need to evaluate the accuracy of the information contained in comics because most health education comics are not included in the standard reference material for doctors or hospitals (Ashwal and Thomas, 2018).

This study aimed to compare elementary school students' knowledge of applying health protocols before and after reading the comic "Sehat Ceria di Masa Pandemi" in Tanjungsari District, Sumedang Regency, West Java Province. The comics in this study carry messages that aim to strengthen beliefs and change the attitudes and behavior of their readers. Attitude is defined as an overall learned evaluation of an object (people, places, issues) that influence human thinking and actions (Perloff, 2017).

The storytelling method is used as an intervention in the respondent group to see changes in respondents' knowledge after reading the comics. Storytelling is a common way to shape the main topic (Bruner, 2002). Even the way we communicate with other people or our understanding of history is very dependent on the story told by the narrator (Schell, 2004). Some authors even claim that all knowledge comes in the form of stories (Green, 2004). Other research supports the finding that when people listen to or read stories, they create their own identities and compare their ideas with others (Zacher, 2006).

The success of the storytelling method in forming self-concept and identity is utilized in the field of health promotion. The use of narratives, stories, and storytelling has begun to be used in the world of health as a diagnostic tool (Charon, 2004), therapeutic (Chelf JH, Deshler AM, Hillman S, 2000), and patient education, students and practitioners (Bergman, 1999). Another study found that storytelling was used as a tool to communicate health information (Hartling et al., 2010). Storytelling offers added value to describing the human experience of previously unknown diseases because, in general, clinical reality is characterized by complexity and uncertainty (Hartling et al., 2010).

This study used the communication-based influence components model (Cugelman, Thelwall, and Dawes, 2009). How this model can be used for social

marketing campaigns that seek to engage the community with a mass marketing approach and a personal approach. With long-term support and adaptation to the subject's needs, health campaigns through comics are expected to be a way to involve the community in public health, environmental protection, safety, and social development initiatives.

The communication-based influence components model contains several elements such as a context that describes the real world, such as social and environmental factors that affect all aspects. This model defines the source as a translator, namely an actor or system that translates and interprets the audience's feedback. The media component in this model is associated with the effects of using certain types of media. Intervention message (source) represents that communication content designed to influence behavioral tendencies to become a behavior. The audience is defined as the individual or target population who will perform or adopt a behavior. The feedback component is defined as the information conveyed by the audience to the source. Without feedback, sources can't design interventions that are relevant and focused on the audience's needs (Cugelman, Thelwall, and Dawes, 2009).

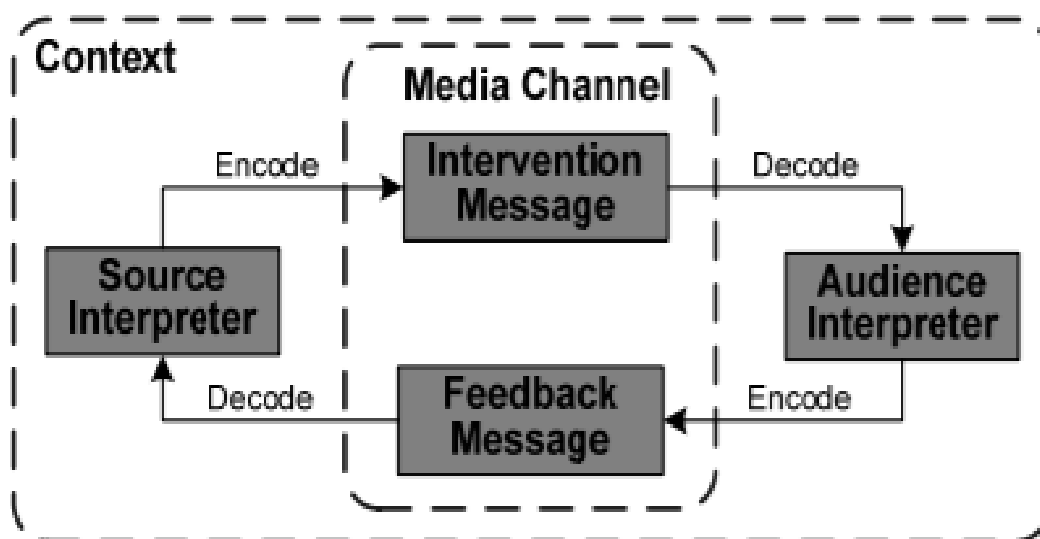


Figure 3. The Communication-based Influence Components Model
Source: (Cugelman, Thelwall, and Dawes, 2009)

Methods

This study aimed to compare elementary school students' knowledge regarding the application of health protocols to prevent the spread of Covid-19 before and after reading the comic "Healthy and Cheerful during the Pandemic." This study was a comparative study using quantitative methods. According to Sugiyono, comparative research compares the state of a variable or more in two or more different samples or at two different times (Sugiyono, 2017).

The data used in this study were primary data obtained from questionnaires distributed to respondents. The observed variable was the value of students'

knowledge on applying health protocols at home and school. This variable was then compared before reading the comic with after reading the comic.

The sampling respondents of this study were 100 students, grades 3 and 4, from public elementary schools in Tanjungsari District, Sumedang Regency, West Java Province use cluster sampling theory. Factors such as age, gender, and socioeconomic conditions of the research respondents were not considered in the analysis. Respondents were male and female students aged 9-10 years with SES C.

The instrument validity test in this study was carried out using the Kaiser-Meyer-Olkin (KMO) test and Barlett's Test. The validity test results showed that the KMO value was 0.675, and the Bartlett significance was less than 0.05 (0.0300), indicating that the sample was sufficient and declared valid.

The steps of the data collection process in this study were as follows: 1) A questionnaire was used to measure respondents' knowledge of the application of health protocols. Respondents should answer questions to true and false statements. Respondents in this study were children, so the researcher added pictures to the questionnaire to reduce the abstraction of the questionnaire questions. 2) Respondents were given intervention in the form of reading a comic book, "Healthy and Cheerful during the Pandemic," by a storyteller. The storyteller read stories to respondents in small groups (10-15 people) with intonation, expressions, gestures, and simulations of the application of health protocols adapted to the story in the comic book. 3) After the storyteller finished reading the book, the respondents were asked to fill out the questionnaire again. 4) Finally, the pretest and post data were tested for the significance of the difference using a paired-sample T-test or a before-after test with the help of SPSS software. This test is used when two groups of samples are related to each other. In the context of this study, the paired-sample T-test was used to test the respondents' level of knowledge on health protocols before and after the storyteller read the comic book.

The hypothesis of this case was as follows:

$$H_0 = \mu_1 < \mu_2$$

$$H_1 = \mu_1 > \mu_2$$

If the pretest and post-test analysis results showed a significance value of <0.05 , it could be concluded that H_0 was accepted, meaning that there was a significant difference in the knowledge of the sample before and after the comics was read. On the other hand, if the significance value was > 0.05 , it can be concluded that H_0 was rejected, meaning that there was no significant difference in the knowledge of the sample after reading the comics.

Result And Discussion

The comic "Healthy and Cheerful during the Pandemic" contains the promotion of health protocols to prevent the spread of the coronavirus to

elementary school students. The health protocol messages in this comic are wearing masks, washing hands, maintaining social distancing, and implementing Clean and Healthy Behavior (*Perilaku Hidup Bersih Sehat* - PHBS) in daily activities. According to the communication based influence component model, the health protocol is one of the intervention message.

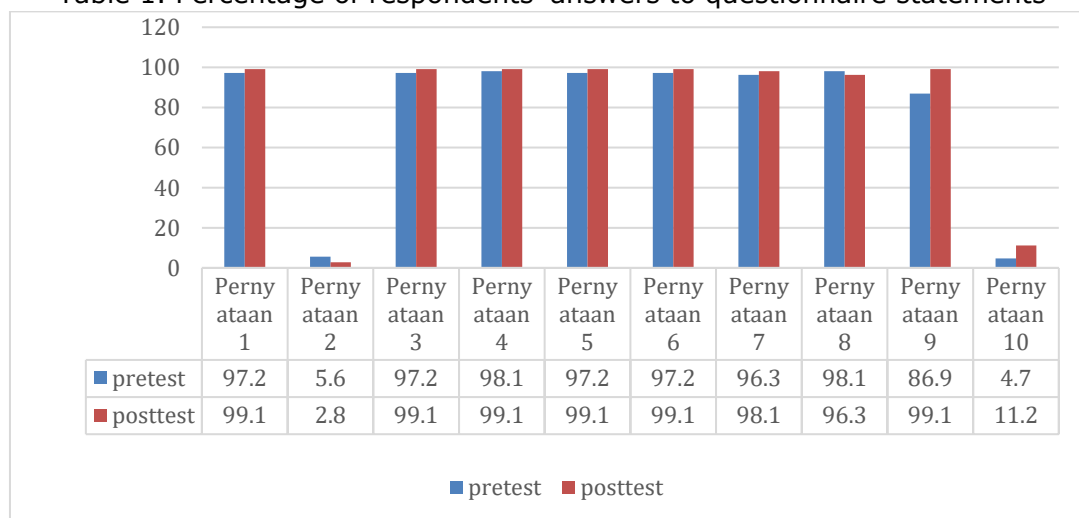
If you look at the percentage of respondents who answered correctly in Table 2, in general, respondents' knowledge regarding the application of health protocols before the intervention was quite good, with a relatively diverse distribution of knowledge levels. Health protocols regarding the use of masks are in statements 1, 6, and 10. Statement number 1: "The correct way to use a mask is to cover the nose to the chin with a mask that has three layers." The percentage of respondents who answered the statement correctly in the pretest and posttest was more than 97%. Statement number 6, "You may chat with friends at school while still wearing a mask." The percentage of respondents who answered the statement correctly in the pretest and posttest was more than 97%. Statement number 10: "Faceshield can replace masks to prevent Covid-19." The percentage of respondents who answered correctly in the pretest was 4.7%, and the posttest increased to 11.2%. It can be concluded that respondents already know the procedures for using masks correctly but do not yet know the guidelines for using face shields. There needs to be additional explanation and emphasis during storytelling regarding the use of face shields in preventing the spread of the Covid-19 virus.

The second health protocol socialized in this comic is about handwashing. Statement number 2: "Washing hands under running water is enough to kill the virus." Respondents who answered the questions correctly on the pretest were 5.6%; however, on the posttest decreased to 2.8%. It can be concluded that respondents do not know how to wash hands properly, so there needs to be additional explanation and emphasis during storytelling regarding proper handwashing procedures.

The third health protocol socialized in this comic is social distancing. The statement regarding the application of the recommendation to keep social distancing is found in the questionnaire statements 3, 4, and 9. Statement number 3: "Maintaining a safe distance when playing with friends and studying at school is around 1,5 - 2m." The percentage of respondents who answered the statement correctly in the pretest and posttest was more than 97%. Statement number 4: "During a pandemic, we express greetings by clasping both hands on our chests, without touching." The percentage of respondents who answered the statement correctly in the pretest and posttest was more than 98%. Statement number 9: "Tossing with the elbow is safer from transmitting the virus than tossing with the hand." The percentage of respondents who answered the statement correctly in the pretest was 86.9% and in the posttest was 99.1%. It can be concluded that, in general, respondents already know the procedures for maintaining social distancing at school and home during the pandemic.

Another indicator in determining respondents' knowledge is the application of clean and healthy living (PHBS). This concept is found in statements 5, 7, and 8. Statement number 5: "To avoid transmission of the virus, it is best to bring food from home." The percentage of respondents who answered the statement correctly on the pretest and posttest was more than 97%. Statement number 7: "After coming home from school or playing outside, immediately change clothes and take a bath." The percentage of respondents who answered the statement correctly in the pretest and posttest was more than 96%. Statement number 8: "You can play with friends, as long as you wear a mask, keep social distancing and wash your hands with soap after playing." Respondents who answered the statement correctly in the pretest were 98.1% and decreased by 2% in the posttest to 96.3%. It can be concluded that, in general, the respondents know the procedures for clean and healthy living behavior. Still, after reading the comics, there is a decrease in statement number 8. After confirming to the respondents, they replied that they doubted whether it is allowed to play outside the house with friends during the pandemic.

Table 1. Percentage of respondents' answers to questionnaire statements



Source: Research data, 2021

Table 1 shows that the percentage of respondents who correctly answered statements number 2 and 10 was very small when compared to the other eight questions. Questions 2 and 10 are negative questions. In preparing statements for the questionnaire, researchers need to avoid possible misperceptions or interpretations that can lead to biased answers. These answers can lead to wrong answers or failure to dig up the information required by the researcher. To avoid this, in his book, Malhotra suggests five things that should serve as research guidelines. First, the respondent's issue is understood; second, use simple words; third, avoid ambiguous words; fourth, avoid misleading questions; fifth, use positive and negative statements (Malhotra, 2012).

Statement number 2: "Washing hands under running water is enough to kill the virus." Most respondents answered "true," whereas the correct answer was

"wrong." Based on the results of interviews with dr. Insi Farisa Desy Arya, M.Sc., the Covid-19 task force at Padjadjaran University, washing hands an antiseptic soap or hand sanitizer . March, 6, 2021. In the comic, there are pictures where the main character, Jojo, is washing his hands under running water twice, on pages eight and 26. However, it is not shown directly in the picture or narration that Jojo washes his hands using soap under running water.

Another negative statement is at number 10 regarding the use of face shields. "Face shields can replace masks to prevent Covid-19." Most respondents answered "true," whereas the correct answer was "wrong." Face shields cannot replace masks to prevent the tranmission of the virus because there are still loose parts of the face shield. In a discussion on the content of health protocols in the comics "Healthy and Cheerful during the Pandemic." In the comics, there are narrations and pictures, which explain the use of face shields by one of the characters, namely the juice seller (Insi Farisa Desy Arya, M.Sc. March,6, 2021).

From the respondents' answers to the two negative statements, the researcher concluded that storytellers need to understand which content needs emphasis when reading a story, especially health protocol education media. Other strategies such as discussion and question and answer can be added after the storytelling session to confirm the audience's understanding of important information in the story.

Table.2: Paired Samples Statistics

		Mean	N	Std Deviation	Std Error Mean
Pair 1	Before	7,7850	107	.86905	.08401
	After	8,0280	107	.50391	.04871

Source: Research data, 2021

Table 3: Paired Samples Test

		Paired Differences							
		mean	Std Deviation	Std error mean	95% confidence interval of difference				
					Lower	upper	T	Df	Sig. (2 tailed)
Pair 1	before-after	-24299	.90950	.08792	-41731	06867	-2764	106	.007

Source: Research data, 2021

Based on the results of the calculation of paired samples statistics with SPSS software, it is known that the level of knowledge of the respondents before treatment was Median (M): 7.78, Standard Deviation (SD): 0.869. After being

given intervention in the form of comic storytelling of "Healthy and Cheerful during the Pandemic," it was found that knowledge after the intervention was Median (M): 8,03, Standard Deviation (SD): (0,503). Based on the paired T-test results, it is known that there is sufficient evidence that there is a significant difference between knowledge before and after reading a comic story. It can be seen from the value of $t = -2.764$ $p < 0.05$. With a t-table value less than 0.05, it showed an increase in the average knowledge of respondents on the health protocol application compared to before reading the comics. After reading the comic book "Sehat Ceria di Masa Pandemi," there was an increase in knowledge and a relatively uniform distribution of knowledge among respondents.

From the results of statistical tests that have been carried out, the researchers conclude that storytelling can increase children's knowledge about the application of health protocols in everyday life in the home and school environment. Concerning the communication based component model, that the health communication research center send the message to elementary students about health protocol during pandemic and the result shows mostly students increase their knowledge.

Conclusion

The comic book "Sehat Ceria di Masa Pandemi" is a picture book aiming at socializing the implementation of health protocols for elementary school students in Sumedang Regency, West Java. This study is based on the communication-based influence components model, where the source intervenes in the audience by using comic media and storytelling methods. The study results show sufficient evidence that there is a significant difference between knowledge before and after the intervention. It can be seen from the value of $t = -2.764$ $p < 0.05$. This means that there is an increase in the average knowledge of respondents regarding the health protocol application compared to before reading the comic book. It can be concluded that the storytelling method can increase elementary school students' knowledge of the health protocol application.

Limitation And Further Studies

This article is part of research themed, the Comics "Sehat Ceria di Masa Pandemi" as a Communication Strategy for the Center for Health Communication Studies at Fikom Unpad in Building Family Awareness of Health Protocols in Sumedang Regency. Limitations in this study are that the focus of research discusses the comparative knowledge of elementary school students regarding health protocols before and after the intervention, namely reading comics by a storyteller. Further research is needed as a comparison, namely the comparison of knowledge if the intervention given is only in the form of comics, without being read out by the storyteller.

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