Original Article

EFFECTIVENESS OF HEALTH EDUCATION IN COVID-19 PREVENTION FOR CHILDREN USING COMIC WITH CULTURAL CONTEXT MEDIA

Ariani Pongoh[1], Via Dwi Lingga[2], Fitra Duhita[3], C. Situmorang[4], Rizki Kamala[5], Vera Iriani Abdullah[6], Bahra[7]
[1,2,3,4,5,6,7]Midwifery Department, Politeknik Kesehatan Kemenkes Sorong, Indonesia

Abstract

Introduction: COVID-19 was a new SARS variance identified in 2019 and declared the cause of the global pandemic in March 2020. Nowadays, the case has experienced a fluctuating case phase, along with the mutation of the SARS Cov-19 variant that has not stopped yet. Confirmation cases and deaths occur in various ages, including in children. Although the data on COVID-19 case in children is low, efforts to prevent the transmission of Covid-19 in children is needed.

Objective: This study aims to identify the effect of health education efforts to prevent Covid-19 transmission through 3M (wearing a mask, washing hands and physical distancing) habituation which was carried out using comic media with a cultural context.

Method: This study uses pre-experimental research with one group pretest-posttest design. The study was conducted to see the effect of providing education using culture-based comic media (independent variable) on elementary school students' attitudes in 3M practice (dependent variable). The population in this study were all students aged 10-12 years at MI Al-Kautsar Sorong, a total of 45 children. In this study, the sampling technique used is total sampling. The data were analysed with the Wilcoxon test.

Result: The mean score post-test was significantly higher than the pre-test (pre-test 70,67; post-test 74,71; p-value 0,01). The difference score pre-test and post-test in categorical scoring showed significant differences; in the post-test group, as much as 46,67% (21 children) scored is good. Students' characteristic related to the post-test scores is age (p-value 0,001); the older children, the higher score they got.

Conclusion: Comics with cultural context media can be considered alternative health promotion media for children.

Keywords: health promotion media, children, the cultural context in health promotion.

INTRODUCTION

Coronaviruses are a large family of viruses that cause mild to severe illnesses, such as the common cold and serious diseases, such as MERS (Middle East Respiratory Syndrome) and SARS (severe acute respiratory syndrome). COVID-19 was a new SARS variance identified in 2019 and declared the cause of the global pandemic in March 2020. Nowadays, the case has experienced a fluctuating case phase in various countries around the world, along with the mutation of the SARS Cov-19 variant that has not stopped yet.

Globally, there were 4,049,102,528 confirmed cases worldwide, and 5,783,776 died.1 Recent data of COVID-19 cases in Indonesia are 4.807.778 confirmed cases of Covid-19, and the data for deaths due to Covid-19 is 145.176 cases.2

Address for correspondence: Ariani Pongoh
Midwifery Department, Politeknik Kesehatan Kemenkes Sorong, Indonesia
Email: ani.pongoh@yahoo.co.id

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Confirmation cases and deaths occur at various ages. The highest number of confirmed cases of covid-19 occurred in the age range of 25-29 years, and the highest confirmed cases in children (>20 years) were in the range of 15-19 years (6.7% of the population aged 15-19 years), followed by age range 10-14 years (5% of the population aged 10-14 years).3 While the cases of death due to Covid-19 in children and adolescents (aged less than 20 years) are known to be 0.4 per cent of the total Covid-19 deaths that occurred. Of these, 58 per cent of cases occurred in the 10–19-year age group and 42 per cent in the 0-9 year age group.4 The data for the highest confirmed cases and deaths due to COVID-19 in Indonesia shows a different pattern from global data, namely the highest number of confirmed cases in the 31-45 year age group (28.8%), while the highest death case is in the >60 year age group (46,8%). Meanwhile, Covid-19 cases in children (age group 6-18 years) are ranked in the fifth age group for confirmed cases (10.4%) and deaths (0.5%).5 Although the data on COVID-19 in children is low, it does not mean that it is not essential to be a concern.

Efforts to prevent the transmission of Covid-19 in children, although in the form of simple behaviour but have a meaningful impact, are implementing health protocols in daily activities. The health protocol that has become a habit of the community today is 3-M behaviour (wearing a mask, washing hands and physical distancing). However, the study showed that 3M behaviour in children was still low.6,7 This is due to the low awareness of children about the importance of implementing health protocols.6 Health education with a specific approach is needed to attract children's attention and interest in properly implementing health protocols.

In this study, health education efforts to prevent Covid-19 transmission through 3M habituation were carried out using comic media with a cultural context. Comic media is the choice because the target of education is children who tend to be interested in pictures and colours compared to writing. Studies have shown that comics have proven to be effective as an educational medium for children compared to other print media (leaflets, posters). In addition, the comics made also use the context of local cultural values. This is reflected in the character of the comic subject, setting and use of regional dialects/accents. Providing health education with a local cultural approach gives the impression of closeness and makes the audience feel more engaged with the audience. Engagement in a persuasive effort contributes to the success of achieving goals.8,9

This study was conducted to see the effect of health education with comics with cultural context media on children's attitudes in implementing health protocols in the Covid-19 pandemic situation in everyday life. The health protocol assessed is an attitude in 3M behaviour.

Method

This study uses a pre-experimental research design; the type of design is the one-group pretest-posttest design. The study was conducted to see the effect of providing education using culture-based comic media (independent variable) on elementary school students' attitudes in 3M practice (dependent variable). Cultural-based comic media was the tool that was intervened in this research. The health promotion topic was the attitude in 3M (wearing a mask, washing hands and physical distancing) to prevent Covid-19 transmission. The comic media was chosen because this research wish can give alternative practical tools to assist health promotion in Pandemic situations, with children as the subject.

Moreover, the cultural-based aim to make the media close to the subject profile. The cultural value that is used is the culture of West Papua. The comic was made using the doodle creator. However, the health education was substantial from the researcher team, which the health promotion expert previously validated. The comic entitled "Kitorang Lawan Corona" mean "We fight with the Corona". An example of comic preference is in figure 1. The population in this study were all students aged 10-12 years at MI Al-Kautsar Sorong City, a total of 45 children. In this study, the sampling technique used is total sampling—research held in schools, adjusted with students scheduled to study in school. In the new normal adaptation, the study was a combined study in school twice a week and from home (distance learning) three times a week.

Figure 1. The example page of the cultural-based comic "Kitorang Lawan Corona"

The intervention was carried out by distributing comics to each research subject and then being given education using the comics that had been given. Before and after the intervention, research subjects received a list of questions assessing their attitudes toward practising 3M. Students who do not follow a series of interventions and assessments are excluded. The data obtained are then planned to be analyzed using the dependent T-test. However, the Wilcoxon test was performed because it did not meet the requirements (the data was not normally distributed). This research has also received an ethical recommendation from the Health Research Ethics Commission of the Ministry of Health, Sorong, with the recommendation number DM.03.05/6/082/2021.

Result

The research respondents are 45 students at an Islamic elementary school, with the characters performed in figure 1.

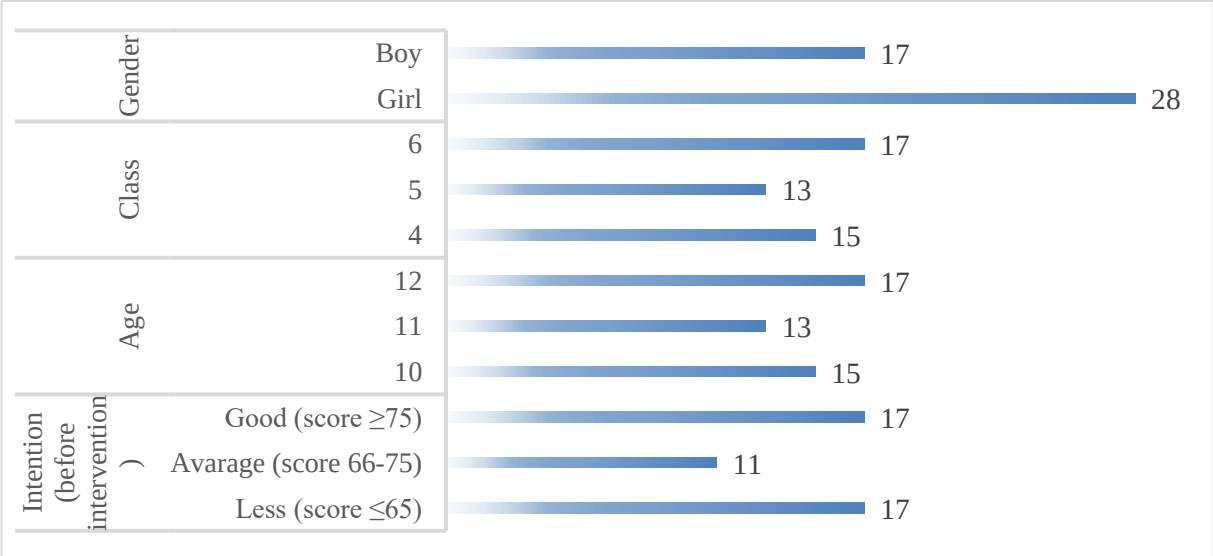

Figure 2. Characteristic of the respondents

The characteristic of respondents (figure 2) shows that majority of students are women, grade 6 elementary school with 12 years old in age. The intention of implementing 3M majority in average level (22 students) and only 6 students in good level (score ≥75 with a range of score 0-100).

Table 1. Intention to practice 3M in elementary students

	Pre-test	Post-test	p-value
ntion score			
Mean	70,67 (68,07 – 73,25)	74,71 (71,87-77,56)	
Median	72	74	0,001*
egorical score			
Less	17 (37,78%)	9 (20%)	0,0001**
Average	11 (24,44%)	15 (33,33%)	
Good	17 (37,78%)	21 (46,67%)	

*) Wilcoxon test **) Chi Square

Data analysis was held to show the differences between the pre-test and post-test (Table 1). The mean score post-test was higher than the pre-test (pre-test 70,67; post-test 74,71). Further analysis to show the significance of the correlation by comparing the mean score cannot be done because the Shapiro-Wilk test for knowing the data's normality has resulted in only the post-test score having a normal distribution. Hence, the analysis continues with median analysis by the Wilcoxon test. The result showed that the differences between score pre-test and post-test were significant (p = 0,001). Bivariate analysis with the Chi-Square test is held to know the differences between the pre-test and post-test in categorical scores. The results show that the categorical score pre-test for the less and good scores was equal, then the post-test majority is a good score. The analysis showed significant differences in the two groups (p-value > 0,0001).

Table 2. Correlation characteristic with the post-test score (categorical score)

Characteristic	Post-test categorical score			p-value
	good	average	less	
ıder				
Girl	11 (24,4%)	9 (20%)	8 (17,8%)	0,182*
Boy	10 (22,2%)	6 (13,3%)	1 (2,2%)	
10 years old	8 (17,8%)	4 (8,9%)	3 (6,7%)	0,007**
11 years old	1 (2,2%)	7 (15,6%)	5 (11,1%)	
12 years old	12 (26,7%)	4 (8,9%)	1 (2,2%)	

*) Fisher Exact Test **) Chi Square Test

Table 2 depicts the correlation of children's characteristics with the post-test score. The result shows no correlation between gender and the post-test score (p = 0,182). However, age correlation was significant to the post-test score (p = 0,007). The older student was, the higher the post-test score that they got.

Discussion

The result shows two main points to be discussed: the characteristics of respondents and the intervention result. The characteristic of respondents shows that most students are women in grade 6 elementary school at 12 years old. Students' characteristic related to the post-test scores is their age (p-value 0,001); the older children, the higher score they got. The post-test score was significantly different from the pre-test based on numerical and categorical scores. The mean post-test score was higher than the pre-test (pre-test 70,67; post-test 74,71; p-value 0,01); the number of students with less score on the post-test was reduced by almost half from the number with less score in the pre-test (pre-test 17 students vs post-test nine students). Most of the students got good scores in the post-test (46,67%).

The characteristic of respondents shows that majority of student are women in grade 6 elementary school 12 years old. There is no correlation between gender with the post-test score. However, the correlation of age was significant to the post-test score. The learning development pattern in children showed that children begin to learn since prenatal and continue to be ready to be active in learning afterbirth. The

age of 10 to 12 is at the same learning development period, with the character primarily equal. However, they are still growing to a better response to information.10 That was why the maturation of learning development in 12 years old was better than ten. Learning development was related to their ability to the information process, which they needed to develop their value and change their attitude.

Attitude is not independent, meaning there will be no reaction from a person's attitude without any connection with other objects or conditions. Health education is an effort to give positive influence to have a good attitude toward health, thus, can change the behavior toward a healthier life. The previous study11 conducted a health belief model to reduce body mass index in overweight junior high schools. The study showed that the intervention improved their health knowledge and behavior. A recent study12 to know the effect of the health belief model on Covid-19 prevention has been conducted. The result shows that the HBM intervention significantly correlates with adherence to Covid-19 behaviors. Changes in behavior cannot be separated from changes in previous knowledge and attitudes.

Factors that influence a person's attitude are personal experience, the influence of others considered necessary, cultural influences, sources of information, media, and emotional factors.13 Health education media used in this study was adapted to the subject characteristic, including the age and the local culture. Based on the age, using the comic media, and based on the local culture, using the local word/ accent and local character. The result showed that the post-test score was significantly different from the pre-test, based on numerical and categorical. The mean post-test score was higher than the pre-test (pre-test 70,67; post-test 74,71; p-value 0,01); the number of students with less score on the post-test was reduced by almost half from the number with less score in the pre-test (pre-test 17 students vs post-test nine students). Most of the students got good scores in the post-test (46,67%).

A study in Africa has also researched comic media integrated with cultural value for health education. The result showed that the media with integrated cultural value as the innovative health communication medium give a positive response from the respondents and is effective in promoting health behavior changes in a high cultural value community.9

Comic media were proven to become effective health promotion media. Rosas-Blum et al. 14, in their research, looked up the effect of the comic as a medium for parents' health education to improve parents' understanding of the typical developmental milestones of a 9-month-old baby. The results showed that the comic significantly increased the parent's recall of information about developmental milestones. The comic media was exciting and made the parents want to lend it to their friends who also have the baby. The perception of the exciting and eye-catching comic media for health promotion media is also proven by some studies.9,15 That made health promotion more attention. Further, the massage about health also is more accepted. On the other hand, the qualitative study about the potential of educational comics as a health information medium showed some respondents' perceptions that comic media are exclusively light-hearted and more suitable for children.15

Choosing the health promotion media and methods suitable for the appropriate age is also essential. Along with receiving information development, people's interest in the source of information is changing. The ability to process information also changes from the simple to the abstract. The comic is attractive to the children because their learning ability is still simple. They tend to be interested in pictures and color rather than text. Simple text and contextual illustrations are easier to be accepted. The comic is perceived as fun and informative communication media for children.16

The study about the impact of the comics/ cartoon in promoting healthy eating on children's food preferences and choice have conducted by Goncalves on 142 children.17 The result showed that the children who got health promotion using comics chose significantly more healthy food. The comic for communicating the pediatric consent also had a positive impact; the children declared that they enjoyed reading the material; further, the understanding assessment showed they have a good understanding which was proven by the good average score is 83%.16

In Indonesia, research about the effectiveness of comic media for health promotion also have been conducted by Ridha,18, who assessed the comic to the elementary school student's knowledge about the practice and the importance of handwashing. The result showed that the students who got health education using comics showed their knowledge of practice and the importance of handwashing significantly higher than students who got health education using other media. Other research which assessed the effectiveness of comics as health education media was also conducted to identify the effect of comics on elementary school student's knowledge of obesity19, identified the effect of the comics on attitude in menarche readiness20, and a study conducted to identify the effect of comic media to improve elementary school knowledge of balanced nutrition massage21. All those studies explain that the comic media for elementary school positively affects delivering the message for health education.

The comic that was used in this study intervention also used cultural context. The cultural context is implemented in the word and the subject character. The conversation word used the Indonesian language with a Papua accent. The subject character seems to be the physical characteristics of the Papua people, including the people's names used. The previous studies about health promotion using cultural context were conducted by Amos et al. 22, which educated children about balance nutrition using Rabab art. Rabab is a traditional musical instrument from Minangkabau that play with the singer to sing a Kaba. Kaba is a lyric that sings during the

Rabab played using Padang dialogue, and the lyrics can be changed based on the message that is wanted to be transferred to the audience. The research use Kaba about balanced nutrition. The audience response is that the health promotion media chosen is more interesting. A study on the effectiveness of health promotion media with cultural context was also conducted to educate about Covid-19 prevention using a local language leaflet. The positive result gained for this study.23

Health promotion by considering people's cultural values is one of the strategies to improve the outcome.8,9 Implementing a cultural value approach appropriate for health promotion in the village or area with a high proportion of the indigenous population.24 Cultural values profoundly affect lifestyle choices, perception of health and health behaviour.25 It is also one of the potential barriers to accepting health education.26 When health education gives attention to cultural value, it will give the feeling of bounding and make people more open to receiving the information.11 Health care providers, with their duty as health care educators, must be aware of integrating cultural values in their care.27 Understanding that humans we deal with have holistic needs (bio-psychosocial and cultural needs) contributes to satisfaction.28,29

Conclusion

Comics with cultural context media can be considered alternative health promotion media for children. The research subject was the small amount due to only a few elementary schools in Sorong which have started offline classes. Some school policies also not allowed non-primary school activity was held, to minimize person to person contact, and school duration limitation. Added up, some students parents/witnesses were not giving their consent to allow their children to join in this research. Fluctuate pandemic situation still impacted to the people wariness, especially to the children

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