



# The Effectiveness of IEC Using Booklet and Video Media on Diarrhea Prevention Efforts on the Knowledge of Posyandu Cadres

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**Abstract:** Diarrhea is still the most common cause of death in the post-neonatal period, which is 14% of deaths due to diarrhea. Success in preventing children from getting into more severe conditions due to diarrhea cannot be separated from the role of posyandu cadres. Efforts to increase the knowledge of cadres about diarrhea prevention is health education. This study aimed to determine the effectiveness of KIE using booklet media and videos about efforts to prevent diarrhea on the knowledge of posyandu cadres at the Gunung Sugih Community Health Center, Central Lampung Regency, in 2023. This type of research is quantitative research using a quasi-experimental design and a pretest-posttest design with a control group. The population in this study were all cadres at the Gunung Sugih Health Center with a total of 50 people with a sampling technique using total sampling. The intervention group was given CIE using a booklet, and the control group was assigned CIE using a video. Data analysis in this study used univariate and Mann-Whitney. The results of this study indicate that the average knowledge before being given health education using booklet media is 57.52, and after being given health education is 91.48. While the intermediate knowledge before being given health education using video media was 58.60, and after being given health education was 93.56. Based on the results of the Mann-Whitney test, it was found that the p-value was  $0.625 > 0.05$ , meaning that there was no difference in the effectiveness of KIE using booklets and videos on diarrhea prevention efforts on the knowledge of posyandu cadres at the Gunung Sugih Health Center, Central Lampung Regency in 2023. Suggestions for cadres after being given education This health service can pass on information to mothers with toddlers.

**Keywords:** Booklet; Cadres; Diarrhea; KIE; Video

## Introduction

The trend of child and infant mortality rates (IMR) from year to year shows a decrease. Data reported to the Directorate of Nutrition and Maternal and Child Health shows that the number of under-five deaths in 2021 was 27,566 under-five deaths, a decrease compared to 2020, which was 28,158 deaths. Of all under-five deaths, 73.1% of them occurred during the neonatal period (20,154 deaths). Of all reported neonatal deaths, most of them (79.1%) occurred at the age of 0-6 days, while deaths at the age of 7-28 days amounted to 20.9%. Meanwhile,

deaths in the post neonatal period (aged 29 days-11 months) amounted to 18.5% (5,102 deaths) and deaths of children under five (aged 12-59 months) amounted to 8.4% (2,310 deaths) (Kemenkes RI, 2020).

Infectious diseases are still the most common cause of death in the post neonatal period. In 2021, pneumonia and diarrhea are still the most common causes of death in the post neonatal period, amounting to 14.4% of deaths due to pneumonia and 14% of deaths due to diarrhea. In addition, congenital abnormalities caused 10.6% of deaths. Other causes of death include COVID-19, perinatal conditions, neurological diseases,

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meningitis, dengue fever, and others (Kemenkes RI, 2021). The leading causes of death in the under-five group (12-59 months) were diarrhea at 10.3% and pneumonia at 9.4%. Other causes of death included dengue fever, congenital heart defects, drowning, injuries, accidents, other congenital abnormalities, COVID-19, parasitic infections, and other causes (Kemenkes RI, 2020).

Diarrhea is the process of defecation with liquid or semi-liquid stools, more stool water than usual more than 200 gr or 200 ml/24 hours. Another definition states that diarrhea is an increase in the frequency of watery bowel movements more than 3 times per day, these watery bowel movements can be or without mucus and blood (Verma et al., 2016). Diarrhea disease more often affects children under five because of their weak immune system so that toddlers will be more susceptible to bacteria that cause diarrhea (Berhe et al., 2016).

Diarrhea is an endemic disease, especially in developing countries such as Indonesia and a disease that has the potential to experience extraordinary events (KLB) which are often accompanied by death (Kemenkes RI, 2020). The main cause of death from diarrhea is dehydration due to loss of fluid and electrolytes through stool. This condition often occurs in children, especially children with malnutrition, who are more susceptible to suffering from diarrhea even though it is classified as mild. However, because the incidence of diarrhea is often accompanied by a decrease in appetite, it causes a weak body condition and this condition is very dangerous for children's health (Andreas et al., 2013).

Based on data from the Indonesian Ministry of Health, the prevalence of diarrhea in 2018 was 37.88% or around 1,516,438 cases in toddlers. The prevalence increased in 2019 to 40% or around 1,591,944 cases in children under five (Kemenkes RI, 2020). In addition, Riskesdas reports that the prevalence of diarrhea is more prevalent in the under-five group consisting of 11.4% or around 47,764 cases in males and 10.5% or around 45,855 cases in females (Riskesdas, 2018). Meanwhile, in Lampung Province itself, based on Riskesdas 2018 data, the prevalence of diarrhea in Lampung Province reached 8.8-9.1%.

Based on data from the Central Lampung District Health Office in 2022, the incidence of diarrhea in January-November reached 2,177 cases of diarrhea in toddlers. In terms of diarrhea cases based on Puskesmas, it is known that the highest incidence of diarrhea occurred at Gunung Sugih Health Center with a total of 843 cases of diarrhea out of 4,048 toddlers. This data has increased compared to 2021 where the incidence of diarrhea was 662 incidents and in 2020 there were 535 incidents. Meanwhile, the incidence of diarrhea in other health centers such as the Bandar Jaya Health Center is only under 300 cases of diarrhea (BPS Lamteng, 2014).

Diarrhea that is not treated quickly will have a direct impact on fluid and electrolyte balance disorders. Food elements such as sorbitol, fructose, magnesium that are difficult to absorb are active in the small intestine so that they can draw fluid into the intestinal lumen, followed by the entry of sodium in normal levels, this is what ultimately causes diarrhea. Bacterial enterotoxins, or chemicals increase fluid secretion along with Cl<sup>-</sup> ions, sodium in the intestinal lumen, and cause diarrhea. The release of fluids, and a number of ions in diarrhea causes dehydration in children as well as metabolic acidosis conditions that require fast and appropriate treatment so that the worst consequences do not occur, namely death in toddlers (Silbernagl & Lang, 2013).

One of the government's efforts to reduce the incidence and mortality of diarrhea is the management program for diarrhea patients in the household setting with five steps, namely rehydration, treatment with zinc, breastfeeding and supplementary food, selective antibiotics and recognition of emergency cases (Kemenkes RI, 2021).

The successful prevention of diarrhea in children cannot be separated from the role of posyandu cadres. Technically, the cadre's duties related to public health development include collecting data on children under five years of age, weighing and recording them in the KMS, providing supplementary food, distributing vitamin A, conducting counseling on disease prevention efforts in children under five years of age, and other tasks (Nope, 2023). Cadres are expected to play an active role and be able to act as drivers, motivators and community educators. Cadres are expected to bridge the gap between health workers/experts and the community and help the community identify and address their own health needs (Tse et al., 2017).

Efforts to improve cadres' knowledge about diarrhea prevention are through health education. Health education is part of the nurse's role as a health educator. The important thing about health education is to empower a person to make decisions on health problems faced in this case is the mother as a child caregiver. Success in diarrhea management cannot be separated from the knowledge and attitude of mothers in caring for children (Hockenberry et al., 2017).

Health education requires media in delivering the material to be given, one of which uses booklets and video media. Booklet is a medium to convey health messages in the form of a book containing text and images. Booklet is a small book consisting of no more than 24 sheets, with this media, the information conveyed can be conveyed properly (Suirakka et al., 2012). Meanwhile, video media is one type of audio-visual media because this media relies on the sense of sight and the sense of hearing. The use of media in

providing health education will attract students to learn the material provided. Interesting media will provide confidence, so that cognitive, affective and psychomotor changes can be accelerated (Setiawati & Dermawan, 2018).

Supported by research by Fathonah (2019) which says that there is a significant difference in maternal knowledge about home management of toddlers with diarrhea before and after counseling with booklet media. Booklet media is effective as a medium for health counseling on home management of toddlers with diarrhea and can be used in health service settings. In addition, according to Harsismanto et al. (2019), which shows that there is a significant effect of health education using video media on children's knowledge and attitudes in preventing diarrheal disease.

**Method**

This type of research is quantitative research using quasy experiment design and pretest posttest design with control group. The population in this study were all cadres at Gunung Sugih Health Center with a total of 50 people with sampling techniques using total sampling. The intervention group was given IEC using booklets and the control group was given IEC using videos. Data analysis in this study used univariate and Mann Whitney.

**Result and Discussion**

Based on the table 1, it is known that the average knowledge of cadres before being given health education using booklet media is 57.52, standard deviation 13.144, minimum score 33 and maximum score 87. While after being given health education, the average is 91.48, standard deviation 7.252, minimum score 80 and maximum score 100.

**Table 1.** Average Knowledge of Cadres about Diarrhea Prevention Efforts before and After Being Given Health Education Using Booklet Media

Knowledge	n	Mean	Standard Deviation	Min-Max
Pretest	25	57.52	13.144	33-87
Posttest	25	91.48	7.252	80-100

Booklet is a small book that contains information in writing in the form of sentences and accompanied by attractive images, with simple language. Booklets have several advantages, namely that they can be used for self-study, can be read repeatedly, contain more information, can be carried anywhere, can be read whenever desired, and are easy to see the contents casually. In general, print media will provide good results, especially in cognitive and skill learning

objectives. While the shortcomings of booklets also exist, namely less known feedback from readers, and difficult to assess the results (Mukromin, 2019).

Health education using media such as booklets can improve maternal knowledge. Another study conducted in Uganda by Siddhartan et al. (2016) showed that booklets can increase respondents' knowledge in preventing health problems (p<0.001). In addition, according to research by Hutasoit et al. (2017) which said there was an increase in knowledge before and after being given counseling using booklet media.

According to researchers, booklet media is effectively used to conduct health education. This is because the booklet contains information that is packaged together with pictures so that it can attract respondents to read it. After the posttest, it is known that there is an increase in knowledge before and after being given counseling.

**Table 2.** Average Knowledge of Cadres About Diarrhea Prevention Efforts Before and after Being Given Health Education Using Video Media

Knowledge	n	Mean	Standard Deviation	Min-Max
Pretest	25	58.60	11.551	33-80
Posttest	25	93.56	8.422	67-100

Based on the table 2, it is known that the average knowledge of cadres before being given health education using video media is 58.60, standard deviation 11.551, minimum score 33 and maximum 80. Meanwhile, after being given health education, the average is 93.56, standard deviation 8.422, minimum score 67 and maximum score 100. A low level of knowledge is likely to reduce self-confidence in terms of insight and ability. The ability a person has will affect one's mindset, insight and actions. Therefore, it is expected that the higher the level of maternal knowledge about diarrhea child care, the better the implementation of diarrhea children (Suprida, 2019).

A person's knowledge about an object contains two aspects, namely positive aspects and negative aspects, these two aspects will determine a person's attitude, which will lead to a more positive attitude towards certain objects. Knowledge is closely related to formal education. Knowledge is closely related to education, where it is expected that with higher education, the person will have more extensive knowledge (Wawan & Dewi, 2019).

According to Susanto (2016), the information obtained allows a person to adopt values and knowledge that can influence thinking and action patterns. One source of information is through health education. Health education requires media in delivering the material to be given, one of which uses video media. According to Notoatmodjo (2014) video

media is one type of audio-visual media because this media relies on the senses of sight and hearing. The use of media in providing health education will attract students to learn the material provided. Interesting media will provide confidence, so that cognitive, affective and psychomotor changes can be accelerated (Setiawati & Dermawan, 2018).

The use of media that involves many senses will further increase understanding of information, so the use of audio-visual media (video) in the form of moving images and videos that involve the senses of sight and hearing will help students in the learning process which serves to clarify and facilitate understanding of the information obtained. The use of video media is considered more effective and interesting for clients so that the achievement of health education goals will be more optimal (Hariyadi, 2017).

This study is in line with research conducted by Yunita et al. (2023) which shows that there are differences before and after counseling with video media, namely the mean before 37 and the mean after 82.33 and a pvalue of 0.00, so it can be concluded that there is an effect of providing video education on parents' knowledge of diarrhea prevention in toddlers at Lubuk Sanai Health Center, Mukomuko Regency in 2022.

According to researchers, before being given health education, cadres' knowledge was low because they had never been given specific information about efforts to prevent diarrhea in toddlers. So that after being given education using video media, they only know the efforts that can be made to prevent diarrhea. Video media is effectively used for educational media because videos can be played anytime and anywhere, so respondents have the opportunity to listen to the material repeatedly. This is what causes the difference in knowledge before and after being given health education.

**Table 3.** Effectiveness of IEC Using Booklet and Video Media on Diarrhea Prevention Efforts on the Knowledge of Posyandu Cadres

Group	N	Average Difference	P value
Booklet Group	25	33.96	0.625
Video Group	25	34.96	

Based on the table 3, it is known that the average increase in knowledge in the booklet group is 33.96 and in the video group is 34.96. The mann whitney test results obtained p value  $0.625 > 0.05$  means that there is no difference in knowledge between groups given health education using booklet media and video media. However, judging from the average difference in knowledge, it is known that video is more effective than booklet media.

Health education can be carried out using a variety of ways both with videos, booklets and simulations and so on. Based on the type of media and its use, booklets are included in visual media which only rely on the sense of sight, while videos are included in audiovisual media which have sound and image elements. The use of this media must be adjusted to the learning style of each respondent (Puspitasari, 2019).

In this study, it was explained that there was no difference in knowledge in the video and booklet groups. However, when viewed from the average difference, it is known that video media is more effective than booklet media. According to Edgar Dale in Puspitasari, (2019), videos have a more concrete level of experience than leaflets because with videos a person will be better able to combine the two senses not only limited to vision, so it is possible to imagine a picture of an action more fully. Ardianto in Sasmitha et al. (2017) explains that the audiovisual method has the advantage of being able to convey understanding or information in a more concrete or real way than can be conveyed through spoken words or in this case also through writing. This is also in accordance with the demands of the development of hours where information technology is developing so rapidly. An educator is required to be able to keep up with these developments so that learning will be more effective and efficient.

This study is in line with research conducted by Antari et al. (2020) which shows that there is a significant difference between providing health education with video media compared to leaflet media. This means that health education with video media is more effective than leaflet media. According to the researcher, video media is more effective in increasing respondents' knowledge because, videos can be viewed anytime and anywhere because videos can be inputted into cellphones. Unlike the booklet which is in the form of a leaflet. This is why video media is more efficient to use in health education.

## Conclusion

The results of the research can be concluded that the average knowledge before being given health education using booklet media was 57.52 and after being given health education was 91.48. Meanwhile, the average knowledge before being given health education using video media was 58.60 and after being given health education was 93.56. Based on the results of the Mann Whitney test, it was obtained that the p value was  $0.625 > 0.05$ , meaning that there was no difference in the effectiveness of KIE using booklet and video media in efforts to prevent diarrhea on the knowledge of posyandu cadres at Gunung Sugih Community Health Center, Central Lampung Regency in 2023.



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**Author Contributions**

N. I. role in this research is to compile the background and find problems that occur, design research methods, analyze, process and present data, discuss research results and findings. While the role of N. A., F. E. S., and N. M., is to provide input, direction and improvement in this research.

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**Conflicts of Interest**

Because this research is independent, there is no conflict of interest to anyone.

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