

# THE EFFECT OF HEALTH PROMOTION USING BOOKLET MEDIA ON THE LEVEL OF PUBLIC KNOWLEDGE ABOUT SEWERAGE WASTE WATER IN COASTAL AREAS SAMAJAYA VILLAGE

Tasnim Tasnim<sup>1</sup> and Ade Saputra<sup>2</sup>

<sup>1,2</sup> Department of Public Health, Universitas Mandala Waluya

*Corresponding Author* : Tasnim Tasnim  
Email:tasnim349@gmail.com

## Abstract

**Background:** The availability of sewerage was still a problem for people living in the coastal area of Samajaya Village. Where, the sewerage that met the requirements is only 58.33% in Samajaya village. The purpose of this study was to determine the effect of health promotion using booklet media on the level of public knowledge about sewerage in the coastal area of Samajaya village.

**Methods:** This study used the pre-experimental method with One Group Pre-test and Post-test Design. The population in this study were 131 heads of families in the village of Samajaya. Where, the sample size were 99 heads of families taken by simple random sampling. Data analysis used the Wilcoxon Sign Rank Test.

**Results:** The results of this study showed that there were 9 respondents with less knowledge 9.1%, and 90.9% sufficient during pre-test and post-test there were 13.1% with less knowledge and 86.9% with sufficient knowledge. The average value of respondents' knowledge was  $7.44\% \pm SD.1.327$ . After being given a health promotion with a booklet about sewerage drainage, his knowledge increased on average  $8.81\% \pm SD.1.639$ . The results of this study indicated that there were significant effect of health promotion with booklets on knowledge about sewerage in Samajaya village ( $p < 0.0001$ ).

**Conclusion:** health promotion with booklets is very effective in increasing community knowledge in Samanjaya village. Increasing public knowledge about sewerage is hoped that it will influence attitudes and actions to improve the sewerage according to health standards.

**Key words:** Health promotion, Booklet, Knowledge, Sewerage

## INTRODUCTION

Provision and service facilities for the disposal of human waste such as urine and feces are important to be secured through waste water disposal channels that comply with health standards. By providing sewerage that meets health standards, it will ensure a healthy environment for every resident (1). Where, this sewerage serves to accommodate used water from washing, cooking, bathing and so on. Sewerage becomes very important not only because of smell and aesthetic reasons but because wastewater is hazardous to health. If there is no sewerage in the village, then pollution in water sources will occur and diseases caused by polluted water will appear (2). Therefore, efforts should be made to ensure that sewerage does not pollute the surrounding environment and is closed. One of the parameters of the environmental pollution is the presence of E.coli bacteria. The standard for the presence of e.coli bacteria is 0 in 100 ml.

To ensure the existence of sewerage in Indonesia, the government has developed a community-based total sanitation program. However, the development of the implementation of this program has not been maximized in Indonesia, including in the province of Southeast Sulawesi. In general, households in Indonesia dispose of their waste directly into sewers (46.7%) and without storage (17.2 %). Only 15.5% use closed shelters in the yard equipped with Wastewater Sewerage. Meanwhile, 13.2% use open shelters in the yard, and 7.4% use shelters outside the yard (3). For example in Southeast Sulawesi province, the percentage of villages in Southeast Sulawesi that have implemented community-based total sanitation implementation is only around 46.36% in 2018. This percentage only increased slightly in 2019 which was 51.82%. In general, the achievement of the program is still considered low (4). One of the regencies in Southeast Sulawesi province that has low coverage of wastewater disposal

facilities is in the Konawe Regency area. In 2020, the number of houses that have waste water disposal facilities is 36,855 houses that meet the standard (58.3%). Where, Soropia sub-district is one of the sub-districts in Konwe district which has a low percentage of sewerage, which is only 38% of houses (5).

In the Soropia sub-district, there is the village of Samajaya which has a sewerage that meets very low standards. Samanjaya village is a coastal area and most of its residents live above the sea. So the availability of sewerage is still a problem. Therefore, the waste water resulting from daily activities is simply flowed into the sea. The impact of this condition is that many infectious diseases appear, such as diarrheal diseases. Diarrhea disease ranks 6th out of the top 10 diseases in the Soropia Health Center area in 2020. The number who suffer from diarrheal disease is 254 cases of which 140 are male and 114 female (6).

The few residents in Samajaya Village who have a sewerage system may be due to the lack of public awareness and knowledge about the importance of the sewerage system. Thus, it is important to provide health education for the people in Samajaya Village in order to increase their knowledge. Various counseling has been carried out by health workers, however, there is no increase in the percentage of residents who have these sanitation facilities. Health promotion really needs the right method in order to increase knowledge and awareness to act. Therefore, this researcher aims to analyze the effect of health promotion using booklet media on the level of public knowledge about sewerage in the coastal area of Samajaya Village.

## METHOD

### Research desian

This study uses a pre-experimental method using the One Group Pre-test and Post-test Design. Pre-Experimental Research is an

experimental research that only uses the experimental group, without the control group. The sample of the subject is chosen simply without using randomization (7).

This research was conducted in May-June 2021 in Samajaya Village.

The research design is as below:

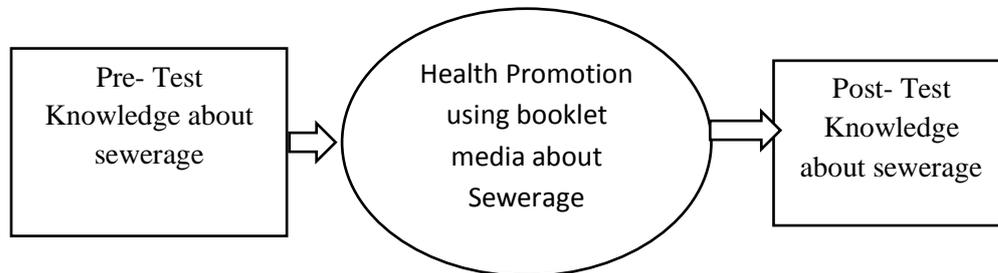


Figure 1. One Group Pretest-Posttest Research Design

The independent variable in this study is health promotion using booklet media. Meanwhile, the dependent variable in this study is knowledge of sewerage. Health Promotion using booklet media is one of the media to convey health messages in the form of books containing text and pictures (8). A booklet is a small book consisting of no more than 24 sheets. The contents of the booklet must be clear, firm and easy to observe. Booklet sizes vary usually from 8 cm to 13 cm.

Knowledge is everything that is known by the respondent or that the respondent is still able to remember about sewerage, its types and benefits. Also, it is about sewerage requirements, waste management principles, maintenance methods and the impact on welfare if you don't have a sewerage. The question about knowledge uses the Guttman scale which consists of 10 questions, containing two alternative answers. The correct answer is given a score of (1) and the wrong answer is given a score of (0). So that the scores obtained are: The highest score:  $10 \times 1 = 10$  (100%), and the lowest score:  $10 \times 0 = 0$  (0%). The Objective Criteria includes enough and less. Enough is if the respondent

answers the question correctly  $>50\%$  of overall respondent's answer. Less is if the respondent only answers  $\leq 50\%$  of the total respondent's answer.

#### Population And Sample

The population in this study were 131 heads of families in the village of Samanjaya. The sample size in this study was 99 people who used the simple random sampling technique. Where, the sample in Hamlet 1 as many as 52 people, Hamlet 2 as many as 39 families, and Hamlet 3 as many as 40 families. Inclusion criteria are: Willing to be a respondent, people living in Samajaya village, willing to follow the research, signing informed consent, and not sick. Meanwhile, the exclusion criteria were not willing or being sick.

#### Data Analysis

Data were analyzed using two methods, namely univariate and bivariate. Where univariate analysis is performed on each variable. Meanwhile, bivariate analysis: that is, if the data is normally distributed, the Wilcoxon test is used. The significance level of media influence is based on the value of  $t$ . The significance level of media influence is based on  $t$ -count  $>$   $t$  table, then  $H_0$  is rejected. So that there is an effect of health

promotion using booklet media on increasing public knowledge about Wastewater Development Channels in Samajaya Village. Otherwise, if  $t\_count < t\_table$ , then  $H_0$  is accepted. So there is no effect of counseling using Booklet media on the level of public knowledge about Wastewater Sewerage in Samajaya Village.

**Research Ethics**

Conducting research, especially if the subject of research is humans, they must uphold human freedom, and then the participation of respondents in this study is based on Informed Consent. Where, in informed consent, the research objectives, rights and obligations of the respondent are explained. Therefore, if the subject is willing, they must sign the consent form. If not, then the researcher must respect the rights of the

respondent. All respondent documents are anonymous and the researcher guarantees the confidentiality of respondents.

**RESULTS**

**Characteristics of Respondents**

Based on the test, of the 99 respondents studied, the age of the most respondents was 21-30 years of age as many as 21 respondents (21.2%) and the smallest was 71-80 years of age as many as 5 respondents (5.1%) (Table 1).

] Meanwhile, male respondents amounted to 41 respondents (41.4%) and female respondents amounted to 58 respondents (58.6%) (table 2).

**Table 1. Age distribution of respondents in Samajaya Village, Soropia sub-district, Konawe Regency**

Age group(year)	n	%
21-30	21	21.2
31-40	19	19.2
41-50	15	15.2
51-60	20	20.2
61-70	19	19.2
71-80	5	5.1
Total	99	100.0

**Table 2. Gender Distribution of Respondents in Samajaya Village, Soropia District, Konawe Regency**

Gender	n	%
Male	41	41.4
Female	58	58.6
Total	99	100.0

**The effect of health education using knowledge about sewerage in Samajaya booklet media on the level of public Village, Soropia District, Konawe Regency**

The level of knowledge obtained from the community in Samajaya Village, Soropia District, Konawe Regency at the time of the pre test, namely there were 9 respondents with less knowledge with a percentage (9.1%), while those with sufficient knowledge were 90 respondents with a percentage (90.9%) (Table 3).

Meanwhile, the level of knowledge obtained from the community in Samajaya Village, Soropia District, Konawe Regency

at the time of the post test, there were 13 respondents with less knowledge with a percentage (13.1%), while those with sufficient knowledge were 86 respondents with sufficient knowledge with a percentage (86.9%) (Table 4).

The results of the Wilcoxon test show that there is an effect of health promotion using booklet media on the community in Samajaya Village, Soropia District, Konawe Regency (Table 5).

**Table 3. Distribution of respondents' knowledge about sewerage in Samajaya Village, Soropia District, Konawe Regency Prior to promotion in the pre-test**

No	Knowledge	n	%
1	Less	9	9.1
2	Enough	90	90.9
	Total	99	100.0

**Table 4. Distribution of respondents' knowledge about sewerage in Samajaya Village, Soropia District, Konawe Regency After Promotion at the post test**

No	Knowledge	n	%
1	Less	13	13.1
2	Enough	86	86.9
	Total	99	100.0

**Table 5. The Effect of Health Promotion Using Booklet Media on the Level of Public Knowledge About Wastewater Sewerage in Samajaya Village, Soropia District, Konawe Regency**

Knowledge	n	Mean	P value*	Std. Deviation
Pre-Test	99	7,44	0,000	1,327
Post-Test	99	8,81	0,000	1,639

Note: \*Wilcoxon Sign Rank Test

## DISCUSSION

This study has proven that health promotion using booklet media is very effective in increasing the knowledge of coastal

communities in Samajaya village about waste water disposal. It is shown that there is a difference in the average knowledge between before ( $7.44 \pm 1.327$ ) and after health promotion with booklet media ( $8.81 \pm 1.639$ ).

This means that Booklet's media is a medium for conveying health messages. Besides, the form of material used is in the form of writing and pictures. Booklets as channels, tools, supporting facilities and resources to convey messages must adapt to the content of the existing material (9), (10).

Likewise, booklets can be regarded as a medium that can be used as educational material in the form of books and contains writings and pictures. It can be in the form of a small book consisting of no more than 24 sheets. The contents of the booklet must also be clear, firm and easy to understand. Where, the size of the booklet varies from 8 cm to 13 cm (11). Booklet media can be said to be the same as other educational media such as leaflets which are print media that affect the sense of sight (12). Through visual media, booklets containing text and images can influence human perception.

Knowledge basically consists of a number of facts and theories that allow a person to be able to solve the problems he faces. This knowledge is obtained both from direct experience and through the experiences of others. When viewed from the questions asked, from the 10 respondents' questions the average question that experienced an increase was on the question of what is sewerage, the type of that and the distance of sewerage from the water source. On the question what is sewerage, the respondents have not been able to distinguish between sewerage and family latrines. This is due to the lack of education to the public about sewerage. After the researcher conducted counseling using booklet media, then the respondents knew that sewerage. They know that sewerage is a channel used to dispose of waste water from the bathroom, laundry, kitchen or not from the latrine.

On the question about the type of sewerage before the counseling was carried out, the respondents only answered by guessing. It means that the respondent does not know how many types of sewerage exist. After counseling the respondents knew the type of sewerage, there were two types of sewerage.

Then on the question of the distance of sewerage from home, before the counseling was carried out, respondents did not know how many meters the minimum distance of sewerage was. After health promotion, respondents answered less than 10 meters after counseling experienced an increase in knowledge by answering correctly at least 10 meters if there was a water source around the house.

This research is in line with previous research which states that Booklet media is very influential on increasing public knowledge about clean and healthy living behavior compared to video media. Based on this study, the increase in public knowledge with booklet media was 98.9%, compared to 97.5% video media (13). Other study also stated that the booklet media was effective for health education, such as for rheumatoid patient (14), pregnant women (15), and for childbirth companions (16). The booklet media also could influence community perception about covid-19 vaccinations in Kendari City (17). Some of these studies have supported that the booklet media as a print media is also effective in influencing the knowledge and perceptions of individuals and society towards the realization of healthy behavior.

## CONCLUSION

There is a significant effect of health promotion using booklet media on the level of public knowledge about sewerage in Samajaya Village, Soropia sub-district in Konawe Regency. Therefore, booklet media can be applied to carry out health promotion to increase public knowledge. Where by increasing public knowledge about health, including about sewerage, it will have an impact on changing people's attitudes and actions (18). It is hoped that the community will build a sewerage system which is very important to support the health status of the community itself.

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