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# THE EFFECTIVENESS OF HEALTH EDUCATION USING VIDEO MEDIA ON KNOWLEDGE OF PULMONARY TB PREVENTION AT NURSING STUDENT IN WAMENA

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**ABSTRACT**

Indonesia is the fifth country in Southeast Asia with the most cases of pulmonary TB. Papua is one of the provinces with a high incidence of pulmonary TB. One of the efforts to reduce the number of pulmonary TB is providing health education about tuberculosis prevention efforts using audiovisual media. This study aims to determine the effectiveness of health education using video media on knowledge of pulmonary TB prevention. The research used the design of The One Group Pre Test – Post Test, with the type of research being Quasi Experiment. It was carried out in the Wamena Nursing DIII Study Program with a sample of 32 respondents. Respondents were given a pre-test questionnaire and a health education intervention using video. After ten days of providing health education, respondents were given a questionnaire (post-test). Statistical analysis using Wilcoxon. The results showed a significant increase in knowledge about pulmonary TB prevention between the pre-test and post-test (p=0.000). It was concluded that health education using audiovisual media was more effective in providing information on the prevention of pulmonary TB.

**Keywords**

***Health Education, Knowledge of Prevention, Pulmonary TB, Video Media***

## INTRODUCTION

Pulmonary TB is a disease transmitted by the bacteria type Mycobacterium tuberculosis. The disease ini attacks the lungs, and other body organs can also be attacked. If pulmonary TB is not treated, it can harm the sufferer to cause complications and even death. Indonesia is the fifth country in Southeast Asia with the most pulmonary TB cases. Jumlah pulmonary TB cases in Indonesia reached 511,873 people consisting of 294,757 men and 217,116 women. The results of tuberculosis case discovery Case Notification Rate (CNR) coverage (193 per 100,000 population. Papua is a province with a high incidence of pulmonary tuberculosis. The number of tuberculosis cases of all types reaches 10,813 (men 5,836 people and women 4,977 people), with CNR reaching 325 per 100. 000 population (Kementerian kesehatan RI, 2018). Meanwhile, pulmonary TB in Siepkosi Village, Jayawijaya Regency, ranks third after ISPA, which is 15.15%. It is related to the local culture of the local community where most of the residents live in honai, which does not have as much as 63.60% ventilation.

The role of nurses as educators is to provide counseling and health counseling in nursing services and care in every health service order so that the community can maintain and improve its health status. Health counseling on pulmonary TB prevention measures is one of the roles of nurses in carrying out their duties and functions as an educator role (Novita, 2012).

Audiovisual media is a tool for conveying messages so that information and materials about health can be provided to groups or communities. A video is an extension tool that can display messages and movements, using special effects to strengthen the learning process and attract audience interest (Notoatmodjo, 2012). Astuti's research also showed that there is a relationship between attitudes and knowledge with efforts to prevent pulmonary TB, with a value of ($p<0.05$) (Astuti S, 2013). Another study by Megawati showed that respondents' knowledge level in carrying out tuberculosis prevention measures increased after being given counseling using video media (Megawati M & Sulistyaningsih S, 2017). Based on this, researchers are interested in conducting research on students of the Wamena Nursing DIII Study Program to determine the effectiveness of health education using video media on knowledge of Pulmonary TB prevention.

## METHOD

Research used the design of The One Group Pre Test–Post Test, a type of Quasi-Experimental research, without using a control group, but already carried out (pre-test) the first observation that allows testing for changes – changes after the experiment (Sulistyaningsih, 2011). The initial stage is carried out Pre-Test, after which health education is provided through video media. At the final stage, a Post Test is carried out. The research was conducted on July 19 – August 13, 2021, at the Wamena Nursing DIII Study Program. The population in this study was second-semester students totaling 80 students with a total sample of 32 respondents—probability sampling method with simple random sampling technique.

The research instrument used was a questionnaire regarding the prevention of Pulmonary TB disease. The questionnaire contains positive questions and a Likert scale with five answer choices. The measurement scale used for answering questions is if the answer is always given a score = 5, often given a score = 4, sometimes given a score = 3, rarely given a score = 2, and never given a score = 1. At the same time, negative questions have a measurement scale always given a score = 5, often given a score = 4, sometimes given a score = 3, rarely given a score = 2, and never given a score = 1. The counseling material was given in this study as an 8-minute animated video. The content in the video contains a narrative in the form of a definition and efforts to prevent TB Lung. The statistical test used is Wilcoxon to find out the difference in knowledge before and after receiving health education treatment with video media.

## RESULTS

**Table 1. Frequency distribution of respondent characteristics**

| Characteristics of Respondents | | Sum | Percentage |
|---|---|---|---|
| Gender | Man | 7 | 21.9 |
| | Woman | 25 | 78.1 |
| Age | < 20 years | 21 | 65.6 |
| | ≥ 20 years | 11 | 34.4 |
| Tribe | Papua | 28 | 87.5 |
| | Non Papua | 4 | 12.5 |
| Sources of Information | Never | 20 | 62.5 |
| | Ever | 12 | 37.5 |

The results showed that the number of respondents was 32 respondents, of which men 7 people and women were 25 people. The majority of respondents aged < 20 years were 21 respondents (65.6%), with 12 respondents who had obtained information related to pulmonary TB prevention

(37.5%) and 20 respondents (62.5%) who had never obtained information

**Table 2. Average Pre-test and Post-test Knowledge Scores**

| eHealth education with video media | Mean | SD |
|---|---|---|
| Before | 71.62 | 6.786 |
| After | 78.59 | 5.369 |

The table above shows the average pre-test knowledge score of 71.62 and post-test of 78.59

**Table 3. Knowledge before and after health education**

| Knowledge Level | Before health education | | After health education | |
|---|---|---|---|---|
| | Sum | Percentage | Sum | Percentage |
| Less | 0 | 0.0 | 0 | 0.00 |
| Enough | 22 | 68.8 | 8 | 25.0 |
| Good | 10 | 31.2 | 24 | 75.0 |

The results of measuring respondents' knowledge about tuberculosis prevention efforts before being given health education (pre-test) were good knowledge of 10 respondents (31.2%), sufficient knowledge of 22 respondents (68.8%). The results of knowledge measurement after being given health education (post-test) increased, with good knowledge of as many as 24 respondents (75.0%) and sufficient knowledge of as many as 8 respondents (25.0%).

**Table 4. Differences in Pre-Test and Post-Test Knowledge in Pulmonary TB Prevention**

| Group | Wilcoxon Test | *p Value* |
|---|---|---|
| *Pre Test* | -4.013 | 0.000 |
| *Post Test* | | |

The results of the analysis showed that there was a significant difference in knowledge in the prevention of pulmonary TB before health e-duction using video media. After health e-duction using video media with a p-value = 0.000

## DISCUSSION

The results showed that majority of respondents aged < 20 years. The level of knowledge is influenced by age factors, including the ability to receive information. It is related to readiness for the receipt of information at a productive age and the weakening of information acceptance as a person grows older (Hasdianah, 2014). Respondents have never been informed about tuberculosis prevention. It is because respondents are less exposed to mass media, both electronic media and the internet. After all, many respondents still do not have television, radio, or Android phones. The public can obtain various kinds of information/materials, so if someone often gets information/material from the mass media, it will impact a person's knowledge level (Azwar, 2013).

The analysis showed a significant increase in the average knowledge score before and after receiving health education with video media. The increase in the value of knowledge shows that audiovisual media can be used continuously as a health education medium to provide information to groups or communities. This study is in line with Fadillah's research, which showed an average knowledge score before counseling of 16.94 and after counseling of 23.97, with a p-value = 0.000 (Fadilah et al., 2019). Massi's research also showed an average knowledge score with a median value before counseling of 24.00 and after counseling of 42.00 (Massi & Kallo, 2018). This research is also in line with the research conducted by Purniawan, where the results obtained there was a significant difference in the knowledge of tuberculosis patients between those who were given health counseling using audiovisual media during the pre-test and post-test. After being given counseling with video media (post-test) tends to be higher (mean = 20.0) than before being given health counseling with video media (pre-test) (mean = 17.6) (Purniawan, 2016). Video media is a medium that contains information for the learning process that

contains material about concepts, procedures, and applications that aims to improve understanding of the material in the learning process presented in audiovisual form. Providing health education with audiovisual media can increase respondents' knowledge about pulmonary TB prevention efforts because respondents can hear and see the message conveyed so that respondents can more easily remember information. According to Azwar, health education is an activity carried out by delivering material or messages so that the public is aware, understands, and is willing to carry out the recommended health information.. (Azwar, 2013).

The results of the respondent's knowledge analysis of efforts to prevent tuberculosis with video media showed an increase in good category knowledge by 43.8%. The preceding shows that health information provided through audiovisual media can affect respondents' level of knowledge. According to Daryanto, students' ability to absorb and remember learning materials can increase meaningfully if learning activities are provided through audio and visual (Daryanto, 2016). It is in line with Juliana's research, which shows that tuberculosis prevention before counseling is given in the majority of the category is sufficient (56.7%), and after being given counseling in the majority of good categories (90%), with the conclusion that counseling provided through video media can increase tuberculosis prevention measures (Juliana & Sulistyaningsih, 2017). Syarif's research also concluded that audiovisual education improves knowledge and healthy family living behaviors about preventing tuberculosis transmission (Muhammad. et al., 2015). Another study by Suhendra showed that the level of knowledge of respondents in carrying out tuberculosis prevention measures increased after being given health promotion using video media (Suhendra et al., 2020). Health education provided through audiovisual media is considered exciting and easier to understand, so it can stimulate the brain and make it easier for a person to receive information (Haqiqi Ilham mardiantun, 2019). Media audiovisual emits audible sounds, observable colors, and moving images that will increase respondents' desire to participate in health education activities. One of the advantages of using audiovisual media is that it can be played repeatedly to provide clarity of message or information so that respondents easily remember the material or message conveyed.

The results showed that there was a significant difference in knowledge in the prevention of pulmonary TB before health e-duction with after education using video media. Health education using electronic media can affect a person's knowledge. It is shown by the results of research conducted by Khayati with the result that there is an influence of education on knowledge after health education with video media, namely Wilcoxon p-value 0.000 (Khayati et al., 2020). Adha's research showed a significant difference in the level of knowledge after being treated with video media, with Wilcoxon test results p=0.000 (Adha et al., 2016). In Kumboyono's research, there were differences in the effect of health counseling using audiovisual media on increasing the knowledge of tuberculosis patients, with a significance value of 0.009 (Kumboyono, 2011). Putri's research also influenced the level of knowledge and attitudes before and after the intervention using video media with a value of p = 0.000 (Putri et al., 2021). Media audiovisual as health education media is a health promotion media approach by combining moving images and text messages accompanied by voice will attract more children (Maemunah et al., 2021). Audiovisual media is considered more effective than other media because it has sound, moving images, and observable objects, as well as messages/information conveyed through video in the form of live images that can be observed on a monitor or through a projector so as to increase respondents' interest in participating in counseling and increase understanding which has an impact on increasing respondents' knowledge.

## CONCLUSIONS

The knowledge of respondents before being given health education with video media, had sufficient knowledge, and

after being given health education with video media increased, namely most of the knowledge was exemplary. Health education using audiovisual media is more effective in providing information to respondents. This research is expected to provide input to teaching staff and students in developing learning media for the lecture process by making audiovisual media as an alternative in providing health education about efforts to prevent Pulmonary TB

## REFERENCES


Adha, A., Wulandari, D., & Himawan, A. (2016). Perbedaan Efektivitas Pemberian Penyuluhan Dengan Video Dan Simulasi Terhadap Tingkat Pengetahuan Pencegahan Tb Paru (Studi Kasus Di Ma Husnul Khatimah Kelurahan Rowosari Kecamatan Tembalang Kota Semarang). *Jurnal Kedokteran Diponegoro*, *5*(4), 565–579.

Astuti S. (2013). Hubungan Tingkat Pengetahuan dan Sikap Masyarakat terhadap Upaya Pencegahan Penyakit Tuberkulosis di RW 04 Kelurahan Lagoa Jakarta Utara Tahun 2013. *Universitas Islam Negri Syarif Hidayatullah, Jakarta*, *1*, 1.

Azwar, S. (2013). *Sikap Manusia Teori dan Pengukurannya*. Pustaka Belajar.

Daryanto. (2016). *Media Pembelajaran*. Gava Media.

Fadilah, M., Syakurah, R. A., & Fikri, M. Z. (2019). Perbandingan Promosi Kesehatan melalui Media Audiovisual dan Metode Ceramah terhadap Tingkat Pengetahuan Anak SD mengenai Penyakit TB Paru. *Sriwijaya Journal of Medicine*, *2*(2), 136–143. https://doi.org/10.32539/sjm.v2i2.67

Haqiqi Ilham mardiantun, sentana D. a'an. (2019). Efektivitas Pendidikan Kesehatan Dengan Video Tentang Pencegahan Penularan Penyakit Terhadap Pengetahuan Pasien Tuberculosis Di Wilayah Kerja Puskesmas Sedau. *Jurnal Keperawatan Terpadu (Integrated Nursing Journal)*, *9698*(1), 65–75.

Hasdianah, D. (2014). *Imunologi Diagnosis dan Teknik Biologi Molekuler. Yogyakarka* (Edisi 1 Ce). Nuha Medika.

Juliana, R. H., & Sulistyaningsih, S. (2017). *Penyuluhan Dengan Media Video Meningkatkan Tindakan Pencegahan Tuberculosis Pada Ibu Rumah Tangga*.

Kementerian kesehatan RI. (2018). *Profil Kesehatan RI*. Kemenkes RI.

Khayati, F. N., Mulyani, E. S., & Purnomo, R. T. (2020). Pengaruh Edukasi Dengan Media Video Terhadap Pengetahuan, Sikap Dan Kepatuhan Berobat Pada Penderita TB Paru Di Balkesmas Wilayah Klaten. *Proceeding of The URECOL*, 79–87.

Kumboyono. (2011). Perbedaan Efek Penyuluhan Kesehatan Menggunakan Media Cetak Dengan Media Audio Visual Terhadap Peningkatan Pengetahuan Pasien Tuberkulosis. *Jurnal Ilmiah Kesehatan Keperawatan, Volume 7, No. 1, Februari 2011*, *7*(1), 43–49.

Maemunah, N., Metrikayanto, W. D., & Helly, C. (2021). Pemberian Edukasi Melalui Animasi Tentang TB (Tuberculosisi) Paru Terhadap Pengetahuan Anak Sekolah Dasar Negeri Merjosari 02 Kota Malang. *Jurnal Kesehatan Mesencephalon*, *7*(1). https://doi.org/10.36053/mesencephalon.v7i1.245

Massi, G., & Kallo, V. (2018). Efektifitas Pemberian Edukasi Dengan Metode Video Dan Focus Group Discussion (Fgd) Terhadap Tingkat Pengetahuan Pasien Dm Tipe 2 Di Klinikdiabetes Kimia Farma Husada Manado. *Jurnal Keperawatan, Program Studi Ilmu Keperawatan Fakultas Kedokteran, Universitas Sam Ratulangi*, *6*(1), 1–6.

Megawati M, & Sulistyaningsih S. (2017). Penyuluhan Dengan Media Video Meningkatkan Upaya Pencegahan Tuberkulosis Pada Mahasiswa Manokwari.

Muhammad., S., Siti, Rahmalia., & Arneliwati. (2015). Efektifitas Pendidikan Kesehatan Dengan Audio Visual Terhadap Pengetahuan Dan

Perilaku Hidup Sehat Keluarga Tentang Pencegahan Tuberkulosis Paru. *JOM Volume 2 No 2*, *2*(2), 1–15.

Notoatmodjo, S. (2012). *Promosi Kesehatan dan Perilaku Kesehatan*. Rineke Cipta.

Novita, A. (2012). Pengaruh Model Pembelajaran Kooperatif Tipe Think Pair Share Terhadap Hasil Belajar Fisika. *Gravity Edu ( Jurnal Pendidikan Fisika )*, *2*(2), 1–5. https://doi.org/10.33627/ge.v2i2.23

Purniawan, A. E. (2016). Efektifitas Media Poster Dan Audio Visual (Video) Terhadap Pengetahuan Ibu Tentang Tb Paru (Studi Di Desa Winong Kecamatan Pati Kabupaten Pati). 1–58.

Putri, K. D., Semiarty, R., & Linosefa, L. (2021). Perbedaan Efektivitas Media Promosi Kesehatan Leaflet dengan Video TOSS TB Terhadap Tingkat Pengetahuan dan Sikap Masyarakat di Wilayah Kerja Puskesmas Andalas. *Jurnal Ilmu Kesehatan Indonesia*, *1*(3), 343–351. https://doi.org/10.25077/jikesi.v1i3.85

Suhendra, A. D., Asworowati, R. D., & Ismawati, T. (2020). Pengaruh Metode Promosi Kesehatan Terhadap Pengetahuan dan Sikap Penderita TB Dalam Pencegahan TB di Puskesmas AEK Parombunan Kota Sibolga. *Akrab Juara*, *5*(1), 43–54.

Sulistyaningsih. (2011). *Metodologi Penelitian Kebidanan, Kuantitatif dan Kualitatif* (Edisi Pert). Graha Ilmu.