International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 03 Issue 11 November 2023

Page No: 2883-2888

DOI: https://doi.org/10.47191/ijmscrs/v3-i11-64, Impact Factor: 6.597

Prevention of Helminthiasis Through Increased Knowledge with Poster and Video Media: An Intervention Study

Ratna Dian Kurniawati[1], Rifaldi Luqman Pratama[2], Yosef Pandai Lolan[3]

[1,2,3] Department of Public Health, Faculty of Health Sciences, Bhakti Kencana University, Indonesia

ABSTRACT

In 2016, the World Health Organization (WHO) stated that 24% of the world's population is infected with helminthiasis. In Indonesia, the highest prevalence at 30%-90% occurs at the age of 1-12 years, namely in preschool and elementary school children. Helminthiasis infection is transmitted through eggs in human feces. Contaminated soil environments occur in populations with poor sanitation. Helminthiasis can lead to nutritional, physical, intelligence, and productivity problems. Open defecation behavior in the environment makes the soil polluted with feces containing worm eggs. An unhealthy environment and behavior are risk factors for helminthiasis. Health efforts through health education need to always be carried out through the media to disseminate information to the public to prevent helminthiasis. This study aims to determine the effectiveness of video media compared to poster media in the prevention of helminthiasis in increasing the knowledge of mothers who have toddlers. The research method used was a quasi-experiment with a non-equivalent control group design. The population was mothers who have toddlers in the working area of the Ibrahim Adjie Community Health Center with a sample determination through a purposive sampling technique of 18 mothers of toddlers in both the video group and the poster group. The Data analysis used was a paired t-test and independent t-test. The results of the research that has been carried out found that there is a difference in the average knowledge of preventing helminthiasis in the video and poster groups with P-value = 0.000. There is effectiveness of intervention through video media and poster media on knowledge with P value=0.000. Video and poster media on the prevention of helminthiasis can increase the knowledge of mothers who have toddlers. This means that video and poster media on the prevention of helminthiasis can be used as intervention media in increasing the knowledge of mothers who have toddlers to prevent helminthiasis.

KEYWORDS: Helminthiasis, Knowledge, Intervention, Video Media, Poster Media

ARTICLE DETAILS

Published On:
25 November 2023

Available on:
https://ijmscr.org/

INTRODUCTION

The World Health Organization (WHO) states that helminthiasis infection indicates the sanitation index in the community. Unfulfilled sanitation is a result of the low socioeconomic capacity of the community, leading to poor hygiene and sanitation conditions. Helminthiasis is one of the Neglected Tropical diseases (NTDs) or neglected tropical diseases. There are eight Neglected Tropical Diseases caused by helminths, namely Taeniasis, Dracunculiasis, Echinococcosis, Trematodiasis, Filariasis, Onchocerciasis, Schistosomiasis and Helminthiasis (Kurniawati, 2023). The Ministry of Health of the Republic of Indonesia targets the elimination of 5 helminthiases including filariasis, helminthiasis, frambusia, schistosomiasis, and leprosy. Helminths are NTDs for which there is no vaccine, so health protocols, detection and surveillance, and therapy or treatment are efforts in treatment and prevention. Public health is influenced by sanitation and environmental health. Low contamination of drinking water sources for the community, and sanitation coverage can reduce the quality of the community's living environment, and increase the transmission of environment-based diseases such as diarrhea. (Kurniawati & Abiyyah, 2021).

Helminthiasis is also an environmentally based disease. The incidence of helminthiasis is still high, in early 2023 Helminthiasis cases were above 10% in 26 districts/cities in Indonesia. Infection by parasitic worms, also known as helminths, infects the digestive tract. Helminth parasites multiply through feces that are discarded freely in the environment. Four types of worms that infect the human

body, including Pinworms which are transmitted through contact with dirty hands or consuming food or drinks contaminated with pinworm eggs, Tapeworms (Cestoda or taeniasis) which are transmitted through the consumption of undercooked meat. Roundworms (Ascaris lumbricoides) enter the human body through soil contaminated with roundworm eggs, and Hookworms (Nematodes enter the human body by penetrating the skin, for example through bare feet. An environment polluted with worm eggs can be a risk factor for helminthiasis. Environments with poor sanitation such as lack of clean water, poor household waste management, lack of healthy latrines, and unmanaged household waste are exacerbated by the practice of handwashing with soap which has not become a good habit after defecating and before eating. The majority of respondents infected with helminthiasis in Antang landfill had poor personal hygiene and environmental sanitation (Amalia, 2022). Maternal knowledge about helminthiasis, the habit of washing hands after defecation, the presence of latrine sanitation, the habit of defecating in a healthy latrine, and the presence of a dirt floor are associated with the incidence of helminthiasis in children under five years of age (Yudhastuti, Ririh; Lusno, 2012).

Feces that are not managed properly and disposed of directly into the open environment can cause worm eggs to spread easily in the environment. Good sanitation is useful to prevent the spread of worms and their proliferation so that worms do not easily enter the human body and cause helminthiasis. Helminthiasis affects the health of the human body, both in children and adults. In adults, helminthiasis can cause anemia and malnutrition, making it difficult to concentrate. In children, helminthiasis can cause malnutrition, which can lead to a decrease in intelligence. The government is currently intensifying efforts to eradicate stunting. If analyzed further, malnutrition can be one of the main causes of stunting. Malnutrition can be caused by helminth infections where nutrients are absorbed by worms. This condition causes children to get sick easily because the immune system decreases, stunting or physical children become shorter and smaller than their peers, mental and physical development of children becomes disrupted, reduced intelligence of children and in some cases can cause death in children. because worms have spread to organs such as the lungs and others.

Since there is no vaccine, the only health measures that can be taken are treatment and prevention of helminthiasis. Prevention is a health effort that can be done in groups that are at high risk of contracting helminthiasis. Toddlers are one of the high-risk groups for contracting helminthiasis, including pinworms, tapeworms, roundworms, and hookworms. Toddlers still in the process of growth and development often put their hands or toys into their mouths. Toys or hands contaminated with worm eggs will enter the mouth, and hookworms enter the body due to not wearing footwear while on soil contaminated with feces, or consuming food and drinks contaminated with worm eggs. Personal hygiene can also affect the occurrence of helminthiasis, namely the habit of washing hands, using footwear, cutting nails, and bathing. Personal hygiene (handwashing habits, defecation habits, nail hygiene, snacking habits, and environmental sanitation (wastewater disposal, clean water use, and sewage disposal) are associated with the incidence of helminthiasis (Fattah, 2020). Age is a variable that influences the level of worms in toddlers (Wulandari, 2019). Therefore, researchers are interested in conducting a study that aims to determine the effectiveness of video media compared to poster media in the prevention of helminthiasis in increasing the knowledge of mothers who have toddlers.

METHODS

This research is a Quasi Experiment or Quasi Experiment research with a Non-equivalent Control Group Design approach. The research was conducted by comparing the results of the intervention in the 1st experimental group and providing the 2nd experimental group as a comparison (Sutriyawan, 2021)

The research sample which is the research subject is divided into two groups, namely the 1st treatment group given video media and the 2nd treatment group given poster media. In this research design, the samples of the treatment group and the comparison group were not randomized. This study aims to determine the effectiveness of video and poster media in the prevention of helminthiasis in increasing the knowledge of mothers who have toddlers. The study was conducted in the Ibrahim Adjie Health Center work area from April to August 2023.

The study began with a pre-test to determine the knowledge of research samples or respondents in the treatment group with video media and in the comparison group with poster media. Then for 4 weeks, the intervention was carried out as a knowledge stimulus, namely providing information on the prevention of helminthiasis through video media in the treatment group and poster media in the comparison group three times. At the end of week 4, the questionnaire was filled out again as a post-test of knowledge about preventing helminthiasis. During the 4-week intervention period, video and poster media were distributed through the WhatApp Group. Pre-test and post-test were conducted to determine the difference in the average knowledge of respondents in the treatment group with video media and in the comparison group with poster media on knowledge of preventing helminthiasis.

The dependent variable in this study is the intervention of providing video media in the treatment group and providing poster media in the comparison group. The independent variable is knowledge before and after being given intervention in the form of video media in the treatment group with video media and in the comparison group with poster media on knowledge of prevention of helminthiasis. The study population was mothers who had toddlers in the

Ibrahim Adjie Health Center working area in Bandung City in 2022 as many as 1393 people, with a research sample of 36 respondents, namely 18 respondents in the treatment group with video media and 18 respondents in the comparison group with poster media.

RESULTS

Based on the results of the research and data analysis that has been carried out, the following results can be obtained:

Table 1: Characteristics of mothers with toddlers

Mother's Characteristics	Video		Poster	
Age (Years)				
18-25	2	11,1%	7	38,9%
26-35	10	55,6%	5	27,8%
>35	6	33,3%	6	33,3%
Education				
Elementary School	4	22,2%	1	5,6%
Junior High	2	11,1%	7	38,9%
High School	9	50,0%	10	55,6%
College	3	46,7%	-	-
Jobs				
Work	6	33,3%	3	16,7%
Not Working	12	66,7%	15	83,3%
Family Income				
Minimum Wage	3	16.7%	3	16.7%
Under Minimum Wage	15	83.3%	15	83.3%
Total	18		18	

Almost half (41.6%) of mothers with children under five were between 26 and 35 years old. Most had a high school education (52.7%) and were not working (75%). Almost all (83.3%) mothers had a family income below the Regional Minimum Wage. Most (75%) mothers of children under five do not work so the source of income is only from the head of the family as a family income.

Table 2. Average Knowledge before and after given Video Media

Prevention of Helminthiasis	*Mean*	*Std. Deviation*	*T*	*P-Value*
Video				
Pre-test	9,8333	1,42457	-17,318	0,000
Post-test	14,7778	1,35280		
Selisih	5%			

The table above shows that in the intervention group through video media the T value is -17.318 with a pre-test and post-test difference of 5%. This means there is an increase of 5%. The P-value of 0.000 <0.05 means that H0 is rejected so that there is a difference in the average knowledge before and after being given an intervention using a video on the prevention of helminthiasis in mothers who have toddlers in the Ibrahim Adjie Health Center working area in Bandung City.

Table 3. Average difference in knowledge before and after being given poster media

Prevention of Helminthiasis	*Mean*	*Std. Deviation*	*T*	*P-Value*
Poster				
Pre-test	9,0556	1,39209	-22,049	0,000
Post-test	14,4444	1,78958		
Selisih	5,4%			

The table above shows that in the intervention group using poster media, the T value is -22.049 and there is a difference in pre-test and post-test of 5.4%. The p-value of 0.000 <0.05 means that H0 is rejected so that there is a difference in the average knowledge before and after being given the intervention of preventing helminthiasis with poster media for mothers of toddlers in the working area of the Ibrahim Adjie Health Center, Bandung City.

Table 4. Effectiveness of Video Media Provision on Knowledge of Toddler Mothers

Group		Mean	Std. Dev	t	P value	Mean differences	95% confidence interval of the differences Lower	Upper
Given video	a	19,25	2,251	2,936	0,015	1,950	0,524	2,408
Given poster	a	17,45	3,899				0,422	2,428

Source: SPSS Data. 2023

Table 4 shows that in the group given video and poster media on Independent T, the P value is 0.015 <0.05, which means that H0 is rejected. So there is an effect of giving video and poster media on the knowledge of mothers of toddlers in the Ibrahim Adjie Health Center work area, Bandung City.

DISCUSSION

Based on the results of the study, it was found that mothers who had toddlers had an average age ranging from 26 to 35 years. Adults aged around the early or mid-thirties adults can solve their problems quite well (Hurlock, 1978). The problem of helminthiasis in toddlers will get the attention of mothers. Mothers of children under five will try to find ways to overcome the problem. However, not all mothers of children under five have access to information on preventing helminthiasis.

Almost half (39%) of mothers of children under five have basic education. Basic education here includes 9 years of basic education, namely elementary school (SD) and junior high school (SMP). Education is not always a guarantee of the high knowledge of an individual. In the era of technology, knowledge can be obtained easily through gadgets. Education becomes the background of a person's character in facilitating the understanding of information. The higher a person's education, the easier it is to understand a problem along with efforts as a problem-solving solution.

Almost all (83.3%) housewives have a family income below the Regional Minimum Wage (UMR). Family income is the resources owned by the family to fulfill their daily needs. When viewed from the results of the study, almost all families are included in pre-prosperous families with family income below the Regional Minimum Wage. The Regional Minimum Wage is a government policy to protect the rights of workers so that they get a decent salary, by the workload of workers. However, the phenomenon is that many families who have worked but do not get the Regional Minimum Wage to meet their needs. Social and economic conditions will be directly proportional to the family's income. For example, purchasing power, living environment, and socioeconomic status. There is an effect of income on family welfare (Utaminingsih, Ni Luh Ayu; Suwendra, 2022). An unsanitary environment can be a risk factor for helminthiasis.

Most (75%) mothers of children under five did not work, so the only source of income was the head of the family. This means that family income is obtained from the head of the family alone. Mothers who have toddlers play a full role as housewives. With the total condition of taking care of the family, toddlers should be well cared for. However, with an income below the minimum wage, mothers cannot choose an environment with good sanitation. Compulsion is a result of the inability of purchasing power in the fulfillment of an environment with good sanitation. This condition makes mothers who have toddlers unable to behave healthily in preventing helminthiasis because the environment does not support good sanitation.

The mean value of knowledge before being given intervention with video media is 9.83 with a standard deviation of 1.42. The mean value of knowledge after being given video media intervention is 14.7778 with a standard deviation of 1.35. There is a difference of 5%. The mean value of knowledge before being given intervention with poster media is 9.05 with a standard deviation of 1.39. The mean value of knowledge after being given the intervention was 14.44 with a standard deviation of 1.79. There was a difference of 5.4%. The analysis shows that the post-test value is greater than the pre-test value in the comparison group intervention with poster media.

Increased knowledge occurs as a result of the knowledge stimulus process. Mothers who have toddlers become more knowledgeable and understand the prevention of helminthiasis. Knowledge is the process of sensing certain objects through the five senses of knowledge, namely the eyes and ears (Notoatmodjo, 2012). There are differences in the knowledge of mothers who have toddlers before and after being given interventions with video or poster media. In line with Rohana's research, there was an increase in knowledge about diarrhea before and after being given intervention with video media and treatment groups with poster media (Rohana & Arbianingsih, 2016).

Education of an individual, in this case mothers who have toddlers, can increase knowledge. Education will facilitate the process of understanding an individual. Knowledge stimulus in the form of health education through media both videos and posters makes mothers who have toddlers enthusiastic. Mothers feel the media used is interesting and easy to understand. The intervention was carried out 3x both in the group with poster media treatment and the group with video media treatment. Increased knowledge of behavior change depends on the quality of the organism's stimulus, giving rise to a positive response to increased knowledge (Notoatmodjo, 2007). Media as a tool is one of the important components in research as a stimulus to help the use of the

senses in the process of increasing knowledge (Notoatmodjo, 2007).

Video media is one of the modern interactional media, supported by technology with recordings that can be seen and heard. Video media acts as a stimulus in increasing knowledge through the five senses. The eyes play a role of 83%, the sense of hearing (ears) which is 11%, the sense of taste 1%, the sense of touch 2%, and the sense of smell 3% (Angriani et al., 2019). Video media as a tool for health education has several advantages: it is more interesting and easier to understand. Through video, a person can learn repeatedly and independently as needed. There is a difference in the average knowledge before and after being given the intervention of preventing helminthiasis in the intervention group with poster media. the results show the presence of posters in mothers who have toddlers. Poster media is effective in increasing the learning value (Juniarti, 2023).

The research process in the intervention group with poster media was the same as the research in the group given video media. The lowest knowledge pre-test score was 7 with wrong answers on questions number 3, 7, 9, and 14 related to symptoms and prevention of helminthiasis. The first post-test score of the mother's knowledge value became 11 and the value of the mother's knowledge in the second measurement was the same as the first post-test value with the lowest score of 12. There are still low scores because some mothers do not pay attention to the posters displayed. Mothers felt bored and less interested in the posters displayed, and not all mothers were able to follow the information conveyed through posters. Poster media is one of the graphic media and visual communication media for message delivery and education. Posters have a special purpose in reminding very quickly about an important idea, so posters must have visual appeal to attract attention and have a strong impact in delivering messages.

The results showed that there was an effect of providing video and poster media on the knowledge of mothers of toddlers in the working area of the Ibrahim Adjie Health Center, Bandung City by 0.015 <0.05. The mother's level of education plays a role in determining attitudes in dealing with problems. plays a role in child health and growth. Mothers with higher education get the opportunity to live and grow better than mothers who graduated from elementary school which can affect the ability to prepare food that meets nutritional requirements. However, with motivation and desire, mothers with low education can improve their nutritional knowledge (Sutrisno, 2023). Mothers with a higher educational background find it easier to understand information, especially health information.

The results showed that mothers who have toddlers in both treatment groups can increase their knowledge. The group with poster treatment had better knowledge. When viewed from the distribution of maternal characteristics based on education level, the poster group had junior high school 38.9%, high school 55.6%, and college 5.6% while the characteristics of mothers in the video group at the education level were elementary school 22.2%, junior high school 11.1%, high school 50% and college 16.7%.

The level of maternal knowledge in preventing helminthiasis was better in the group with intervention or poster treatment compared to the group with video group. Maternal education is one of the things that can underlie this condition. The level of education in the poster group was better than in the video group where in the group with video intervention, more mothers had elementary school education, namely 22.2% compared to only 5.6% in the poster group. Health education requires tools or media to convey information. The results of the study stated that the knowledge of mothers who were given a poster media intervention was better than that of video media. Theoretically, video media is better because audiovisual delivery is more effective audiovisually but posters are more familiar to have advantages considering they are often used in health facilities.

CONCLUSIONS

There is the effectiveness of interventions related to knowledge of the prevention of helminthiasis through video media and poster media. Poster media on the prevention of helminthiasis is more effective than video media in improving the knowledge of mothers with toddlers.

ACKNOWLEDGMENT

We would like to thank the Ibrahim Adjie Health Center for giving permission to conduct the research and helping with the ease of data and also thank the research team. Hopefully the results of the intervention by comparing two media, namely videos and posters, can be a reference in increasing knowledge about preventing helminthiasis.

CONFLICT OF INTEREST

The authors have no financial or other potential conflict of interest to disclose.

STATEMENT OF INFORMED CONSENT

All respondents had obtained research information, filled out informed consent, and agreed to participate. Researchers maintain research ethics and ensure the confidentiality of the pekerjat's identity.

REFERENCES

I. Amalia, R. (2022). Karakteristik Personal Hygiene Sanitasi Lingkungan Infeksi Kecacingan Pengangkut Sampah TPA Manggala Antang. *Jurnal Mahasiswa Kedokteran*, *2*(2), 93–102.

II. Angriani, S., Merita, M., & Aisah, A. (2019). Hubungan Lama Pemberian ASI dan Berat Lahir dengan Kejadian Stunting pada Balita di Wilayah Kerja Puskesmas Siulak Mukai Kabupaten Kerinci Tahun 2019. *Jurnal Akademika Baiturrahim Jambi*, *8*(2), 82–88. https://doi.org/10.36565/jabj.v8i2.17

III. Fattah, N. et al. (2020). Hubungan Personal Hygiene dan Sanitasi Lingkungan dengan Kejadian Penyakit Kecacingan. *UMI Medical Journal (UMJ)*, *5*(2), 2685–7561.

IV. Hurlock, E. B. (1978). *Child Development*. McGraw-Hill.

V. Juniarti, S. (2023). *Pengaruh penggunaan media poster terhadap motivasi belajar siswa pada pembelajaran ipa di sdn 12 rejang lebong*.

VI. Kurniawati, R. D. (2023). Determinan Sosial Dan Pengaruhnya Terhadap Neglected Disease. In Hairil Akbar (Ed.), *Epidemiologi Sosial* (1st ed., pp. 135–160). Media Sains Indonesia. https://isbn.perpusnas.go.id/Account/SearchBuku?searchTxt=9786231951564&searchCat=ISBN

VII. Kurniawati, R. D., & Abiyyah, S. F. (2021). Analisis Sanitasi Dasar Lingkungan Dengan Kejadian Diare Balita Di Kelurahan Babakansari Kecamatan Kiaracondong Bandung. *Window of Health : Jurnal Kesehatan*, *04 No. 01*(Ratna Dian Fakultas Kesehatan Masyarakat Universitas Muslim Indonesia), 75–84.

VIII. Notoatmodjo, S. (2007). *Kesehatan Masyarakat Ilmu dan Seni*. Rineka Cipta.

IX. Notoatmodjo, S. (2012). *Metodologi Penelitian Kesehatan*. Rineka Cipta.

X. Rohana, & Arbianingsih. (2016). Pengaruh Pendidikan Kesehatan Dengan Media Video Terhadap Pengetahuan Anak Pra Sekolah Tentang Pencegahan Penyakit Diare Di TK Minasaupa. *UIN Alauddin Makassar*, *10*(1), 73–79.

XI. Sutrisno. (2023). Hubungan Tingkat Pendidikan dan Pengetahuan Ibu Tentang Gizi dengan Status Gizi pada Balita di Posyandu Abung Timur Wilayah Kerja Puskesmas Bumi Agung Kabupaten Lampung Utara Tahun 2020. *Jurnal Ilmu Medis Indonesia*, *2*(2), 77–83. https://doi.org/10.35912/jimi.v2i2.1513

XII. Sutriyawan, A. (2021). *Metodologi Penelitian Kedokteran dan Kesehatan* (N. F. Atif (ed.); I). PT Refika Adutama.

XIII. Utaminingsih, Ni Luh Ayu; Suwendra, I. W. (2022). Pengaruh Pendapatan dan Jumlah Anggota Keluarga Terhadap Kesejahteraan Keluarga di Kelurahan Karangasem. *Ekuitas: Jurnal Pendidikan Ekonomi*, *10*(2), 256–263.

XIV. Wulandari, E. P. (2019). *nalisis Pengaruh Faktor-Faktor Infeksi Cacing pada Balita dan Anak Umur 6-12 Tahun di Kabupaten Ende, Nusa Tenggara Timur dengan Metode Regresi Logistik Biner*. *8*(2), 2337–3520.

XV. Yudhastuti, Ririh; Lusno, M. F. D. (2012). Kebersihan Diri dan Sanitasi Rumah pada Anak Balita dengan Kecacingan. *Kesmas, Jurnal Kesehatan Masyarakat Nasional*, *6*(4), 173–178.