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Pocket Book to Enhance Knowledge and Attitude Regarding Prevention of Soil-transmitted Helminth

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ABSTRACT

Indonesia, being a tropical area with high humidity, is a source of proliferation of worms. Soil-Transmitted Helminths infection is widespread in all rural and urban areas. Children who are infected usually experience lethargy, pallor or anemia, weight loss and listlessness, as well as decreasing their learning concentration and productivity. Prevention effort to reduce the incidence of Soil-Transmitted Helminths infection is conducted by providing the information on Soil-Transmitted Helminths infection. Health promotion cannot be separated from media because messages delivered through media can be more interesting and easier to understand. The purpose of this study is to determine the effectiveness of a pocket book to increase preventive behavior for Soil-Transmitted Helminthes Infections. This type of research was a quasi-experimental study. The samples of this study were all elementary school infected students in grades 3, 4, and 5 with package of interventions for the provision of a pocket book. The effectiveness of the pocket book is determined by using the t test. There are differences between the mean of knowledge and attitude, but the mean of behavior of Soil -Transmitted Helminths Infection before and after the pocket book is similar.

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1. INTRODUCTION

Intestinal worm disease is another example of a parasitic disease transmitted through food. The disease which is mainly caused by nematodes is also one of the groups of neglected tropical diseases (NTD). It is prevalent throughout the world. It is estimated that more than one billion people in the world are infected by *Ascaris lumbricoides* and approximately 500 million are infected by *Trichuris trichiura*. Together with other worms (hookworms), the worms were classified in the group of soil-transmitted Helminths/STH (worms that are transmitted through the soil) [1].

Prevalence of Soil-Transmitted Helminth infection in Indonesia is still quite high. Wormy disease is widespread in rural and urban areas. Based on a survey of Soil-Transmitted Helminth infections in primary schools in several provinces in 1986-1991 showed a prevalence of approximately 60-80%, whereas for all ages ranged from 40 to 60%. Diarrhea Sudit survey results in 2002 and 2003 in 40 primary schools in 10 provinces showed the prevalence ranged from 2.2 to 96.3% [2].

Wormy disease spreads in all rural and urban areas with tropical and subtropical climates. As tropical country which is a good environment for the development of worm as well as poor hygiene and sanitation, Indonesia has high humidity, leading to high prevalence of the disease [2]. The results showed that the prevalence of worm infection is as much as 14.81% in urban areas and 65.4% in rural areas [3]. Additionally, school-age children become the contributors of the worm infection. Research conducted in

elementary school children grade 1 in Puskesmas Kokap 1 shows a prevalence of 24.6% of children affected by worm infection [4]. Soil-Transmitted helminth infections that usually attack children are roundworm, whipworm and hookworm. Parasitic worms do not only take nutrients in the intestines of children, but also damage the intestinal wall, preventing the absorption of these nutrients. Children who are infected usually experience lethargy, pallor or anemia, weight loss and listlessness, decrease their learning concentration and productivity as the future generation.

The great number of children affected by worm infection is caused by their intense contact with the soil. Wormy is one disease that is transmitted through the soil (Soil-Transmitted helminths). The worm, which habitat is in the intestinal and needs soil to hatch their eggs, becomes infective to humans. Some of the factors that could affect the occurrence of worm infection in children are the habit of biting nails, washing hands using soap before eating and after defecation [4]. The prevention effort to reduce the incidence of worm infection is to foster knowledge about early worm infection. Knowledge is dominant factor essential in a person's actions. Knowledge, attitude, and practice of the primary school children are correlated with helminth infections [5]. Knowledge is gained through a variety of ways, one of which is through the promotion of health. Health promotion plays important roles in the process of society empowering, which is learning from, by, and together with the people in accordance with the local socio-cultural environment. This way, they can help themselves in the field of health [6].

Promotion of health cannot be separated from the media, because through media, the messages can be more interesting and understandable so that the target can learn the message and adopt a positive attitude [7]. Pocket book will provide information about STH infections. It is expected to improve the behavior in preventing STH infection, including knowledge, attitudes and actions. Based on the research results, pocketbooks can increase the score of knowledge about sexually transmitted diseases in the Banyumas State high school students due to an increase in pre and post-test scores [8].

Based on the preliminary study, 15 students of grade 4, 5, and 6 in SD Negeri Moyudan, were positively infected by STH. Besides, from the interview results, most of the students do not know about STH infections and how to prevent it. Therefore, the researcher conducted a research on the effectiveness of pocketbook in increasing the knowledge of elementary school students about worm infection. The research is expected to give more insight to the society, especially children that defecation in inappropriate places can lead to several diseases, one of which is worm infestation.

To overcome the problem, it is necessary to improve the knowledge through the use of pocketbooks as the media to promote health in relation to STH infection. This way, it is expected that more children are protected from the infection. If it is not conducted early, there will be more children infected, which may lead to decrease their learning concentration. According to the facts, the problem of this research is how effective the Pocketbook is to the Behavior towards Soil-Transmitted Helminth Infection in Elementary School Children in SD Negeri Moyudan Sleman Yogyakarta.

2. RESEARCH METHOD

This research belongs to quasi-experimental research with the intervention group. To determine the increase of knowledge, attitudes and behavior of children of Soil-Transmitted Helminths infection in elementary school children, pre and post tests were conducted. The samples were taken using totality sampling technique, which is 57 respondents from grade 4, 5, and 6. The data were collected using questionnaire given to the respondents. It consists of the variables of knowledge, attitude, and behavior before and after the intervention of the pocketbook. The confounding variable is controlled using restriction. The data were analyzed using non-parametric Wilcoxon statistics because they were not normally distributed.

3. RESULTS AND ANALYSIS

This research was conducted in SD Negeri Moyudan Sleman Yogyakarta Special Region. The samples were elementary school children of grade 4,5, and 6 with the number of 57 respondents. Results of univariate analysis are based on the knowledge, attitudes and behavior of elementary school children in the prevention of Soil-Transmitted Helminths infection. Results are presented in Table 1.

Table 1. Knowledge, attitudes and behaviors in the prevention of Soil-Transmitted helminth infections

Variable	Before giving the pocket book	After giving the pocket book
Knowledge	15.46	17.32
Attitude	14.91	16.56
Behavior	9.67	9.93

Table 1 illustrates that in the variable of knowledge, there is an increase of 1.86 and 1.65 of the attitude. Children's behavior in preventing the Soil-Transmitted Helminth infection also increases as much as 0.26. Based on normality test done before the paired t-test, the data were not normally distributed. The next step is transformation of data, and then another normality test is repeated. The final results were stable, showing that the data were not normally distributed that to solve it the researchers chose to apply non-parametric Wilcoxon test. Wilcoxon test results are presented in Table 2:

Table 2. Results of Wilcoxon test on the variables of knowledge, attitudes and behavior of children to prevent Soil Trnasmitted Helminth infections

Varible	Median (Minimum-Maximum)	P value
Knowledge before using the pocket book	16 (10-20)	0.000
knowledge after using the pocket book	18 (11-20)	
Attitude before using pocket book	15 (8-20)	0.000
Attitude after using the pocket book	17 (10-20)	
behavior before using the pocket book	10 (5-12)	0.441
behavior after using the pocket book	10 (5-16)	

Wilcoxon's test: 4 subjects knowledge decreased, 6 fixed and 47 increases
8 subjects attitudes decreased, 9 fixed and 40 increases
16 ubjects with behavioral decline, 24 fixed and 17 increases

Table 2 illustrates the results of the Wilcoxon test that using the pocketbook has proven to increase the knowledge of the respondent. It can be seen from the biological significance that the number of respondents whose score of knowledge of Soil-Transmitted helminth infections increased by 47 people and respondents whose score remains the same is as much as 6 people. Statistically, indicated by the value of p=0.000 both on knowledge variable, it means that there are differences between the mean values of knowledge and good attitude value before and after using the pocket book.

Giving pocket book also increases the variable attitude of the respondent in the prevention of Soil-Transmitted helminth infections, proven by 40 people whose demeanor increases, while the remains were 9 people. The statistics also show the value of p = 0.000, which means that there are differences between the mean values attitudes before and after the pocket book.

Based on the biological significance, the behavior of respondents in preventing Soil Transmitted helminth infections also increased after using pocketbook. It can be seen from the number of respondents who showed an increase, as much as 17 people. The number is lower than that whose score does not increase, which is 24 respondents. This is in contrast with the statistical results, showing that p = 0.441, which means there are no differences between the mean values of behavior before and after the pocket book.

The statistic test showed a difference in the mean score of knowledge of the respondent about Soil-Transmitted Helminth infection before and after using the book, with the value of p=0.000. The difference arises since the respondents have read the pocketbooks, providing them new information about Soil-Transmitted Helminth infection. The knowledge they gained from the reading lasts longer because they directly sense the knowledge. Human's knowledge is gained mostly through sight and hearing. Knowledge is one key factor in shaping the behaviour [9].

The increase in knowledge scores from pre-test to post-test is achieved after using the pocketbooks, since it contains simple and practical information and they can read it at anytime. The knowledge about PMS increases as much as 31.2%. Practical and handy characteristics of the pocketbooks encourage the students to read. Indeed, the book is focused and meets the needs of the students [10]. The use of booklet is also effective to improve the students' knowledge about sample nutrition for anemia. It is evident in the increase of the score before and after using the pocketbook [11]. This booklet is intended for used by mental health care professionals to assist them develop a better understanding of neo-typical in families with children with high or low autism [12].

Improving the students' knowledge using media, which is the pocketbook, is effective to help them in absorbing the information they read. The combination group, comprising of students and parents, achieved significant score (p=0.000). Significant improvement is achieved by the students after they use the media [13]. In another case, patients in the pilot study were satisfied with the re-designed booklet. Practitioners reported that its use in consultations enabled change implementation and facilitated patients' understanding of connections between lifestyle and health outcomes [14]. Staff identified useful elements of the booklet and made suggestions for dissemination in line with prior research. A better understanding of how print materials are utilized to supplement media campaigns can improve their usefulness and potential influence on health behaviors [15].

The statistic test showed a difference in the mean of respondents' attitude towards Soil-Transmitted Helminth infection before and after using the pocketbook, with the value of p=0.000. The respondents show positive attitude in preventing Soil-Transmitted Helminth infection, which is evident in the increasing score before and after using the book. Reading and re-reading the pocketbook improve their confidence and self-awareness to prevent the infection. The use of gouty arthritis pocketbook increases the mean, as much as 0.55. It means that the intervention group reaches higher output compared to that in the control. This way, pocketbook has proven to be one good solution to help patients in healing themselves [16].

The respondents' improvement in their attitude towards the infection is also the results of their response to the pocketbook. Attitude is not only an action in certain activity, but also a predisposition of actions in a behavior. Attitude is also the readiness to react to particular object in particular environment as their appreciation of the object [17]. The role of the media is quite effective. Media generates the interests of the target, stimulating them to spread the messages to other people and facilitate the delivery of information [18]. Media shapes particular knowledge, opinion, attitude, behavior among individuals, groups, institutions, or society. In turn, it also influences the audiences [19].

Based on the variable of behavior in the prevention of Soil-Transmitted Helminth infection, the similar mean reached before and after using the pocketbook is probably caused by short measurement stage, which was only 5 days after using the book. It is possible that the respondents have not internalized the knowledge they gained from the pocketbook. The similar mean scores are found both in the intervention groups and the control groups. Behavior takes time to change. Different from learning principles applying evolution process, it requires specific considerations of others. Changing behavior depends on the stimulus. If it is strong, it improves attention, understanding, acceptance, and reaction, which leads to action [20].

In contrast, different results in increasing behavior of PHBS (behavior of clean and healthy) before and after health promotion to experimental and control groups is probably caused by the availability of health facilities at school. Facilities and infrastructures are the enabling factors in improving healthy behaviour [17].

4. CONCLUSION

There are differences in the mean scores of knowledge on Soil-Transmitted Helminth infection o f the elementary school students before and after using the Pocketbook in SD Negeri Moyudan Sleman Yogyakarta. As the media of health promotion, the pocketbook is proven to be effective in improving the knowledge on and attitude towards Soil-Transmitted infection in the students. However, it is not effective in improving the behavior of preventing Soil-Transmitted Helminth.

Primary Health Care (PHC) can mentoring school children through UKS program in schools by providing counseling on an ongoing basis, especially on Soil Transmitted helminth infections and skrinning the Primary Health Care (PHC) can conduct a mentoring activity to students through School Health Unit program at school by providing continuous counseling in relation to Soil-Transmitted Helminth infection.

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