

Improving Students Knowledge of Clean and Healthy Living Behavior through Health Education

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Abstract—According to World Health Organization, health education is any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes. School communities are one of primary communities in every city include Manado City. These students are prone to communicable disease such as diarrhea. This study aims to explore the differences of health education intervention on students. This was a pre-experiment study (one group pre-test post-test) which conducted on Manado 12 Public Elementary School located in Tuminting Subdistrict. Total sampling technique was used with total of 44 respondents. This study used pre-test and post-test questionnaires, standing banners, posters, leaflets, videos, LCD projector, and laptop. Data were analyzed by paired t-test. Results showed most respondents were at low category, amounting to 29 people (65.9%) before intervention and afterward, all respondents scores increased to good category, amounting to 44 people (100%). Paired t-test analysis obtained p value of 0.000, so there was a significant difference before and after intervention on elementary students in Manado 12 Public Elementary School. The study suggested the school should provide more facilities which can support and enable students to implement clean and healthy living behavior around the school environment.

Keywords—health education

I. INTRODUCTION

School communities are groups which has high risk of developing disease [1]. Therefore, at this time elementary students need to get health supervision, because the development process is regularly built at this stage. Children at this age every 5-6 days a week will go home and go to school by passing various kinds of traffic and environmental conditions that are affected by pollution, sources of illness, associating with friends who are all at risk of developing the disease [2].

The age of elementary school is also often referred to as the intellectual period or the period of school harmony. In the period of harmony in this school in relative terms, children are more easily educated than before and after [3]. Schools other than functioning as a place of learning can also possess a threat of disease transmission if not managed properly. Moreover, elementary students are vulnerable to disease [1].

On average 30% of Indonesia's total population are children and elementary year is a golden age to instill Clean and Healthy Living Behavior (CHLB) so that they have the potential as agents of change or agents of change to promote CHLB, both in schools, families, and society. Students are essentially the easiest and quickest groups to accept change. It is expected that with the target group of these elementary students, if it has been accustomed since childhood, the culture of clean and healthy living will be carried to large and when adulthood the culture will not change again [1].

Schools are one of the targets of CHLB in the educational institutions. This are due to the large number of data that states the emergence of some diseases that affect school-age children (aged 6-10 years), such as diarrhea, worms and anemia are generally associated with CHLB. Other impacts of the lack of implementation of CHLB include a learning atmosphere that is not supportive because of the dirty school environment, decreased enthusiasm and achievement of learning and teaching in schools, decreased image of schools in the general public. Therefore, planting CHLB values in schools is an unavoidable need [4]. The poor sanitation conditions will have a negative impact on many aspects of life, ranging from the decline in the quality of life of the community, the contamination of drinking water sources for the community, the increasing incidence of diarrhea and the emergence of diseases [5].

Based on the 2013 Basic Health Research by the Indonesian Ministry of Health, the average percentage of national CHLB is only 32.3%. This means that only 32.3% of the total number of Indonesians who have implemented CHLB. Indonesia's Health Profile data for 2014 shows that the achievement of CHLB households in 2014 reached 76.61% of the total 311,206 households that were CHLB, out of 406,199 households observed, with the total number of households in North Sulawesi as big as 634,990 households [6]. Based on data from the North Sulawesi Provincial Health Office Profile, the percentage of CHLB households by district/city in North Sulawesi Province is: North Minahasa District 81.1%, Bolaang Mongondow District 80.5%, Sangihe Islands District 79.1%, South Minahasa District 76.4%, Talaud Islands District 76.1%, Bitung City 74.5%, Kotamobagu City 72.2%, Southeast Minahasa District 68%, East Bolaang Mongondow District 67.9%, North Bolaang Mongondow District 66%, Minahasa

District 65.1%, Manado City 64.7%, Tomohon City 61.9%, South Bolaang Mongondow District 47.6% and Siau Tagulandang Biaro Islands District 35.8% [7].

Tuminting Subdistrict is one of eleven districts in Manado City. Data from Manado Central Bureau of Statistics [8] showed that Tuminting Subdistrict has the highest population density per highest household in Manado City. The number of primary schools located in Tuminting District is 36 elementary schools, both public and private. On early observations, the team found that there was still lack of knowledge of children on CHLB, there were still children who bought snacks on the streets, there were still children who did not know how to wash hands properly and so on. Based on the description above, researchers are interested in conducting research on the implementation of CHLB in schools and the development of health education through counseling activities for children in elementary schools in Tuminting Subdistrict, Manado City to increase awareness to maintain health from an early age. The aim of this study was to explore the differences of health education intervention on students.

II. METHODS

The research design was carried out as a pre-experimental design (one group pre-test post-test). This research was conducted in Manado 12 Public Elementary School. The time of this research was carried out in September-December 2017. The population in this study were all 5th grade elementary school students. Total sampling was used so total respondents amount to 44 students. Independent variable is the health education with CHLB' counseling and dependent variable is the knowledge level of CHLB. The instruments used were pre-test and post-test questionnaires, standing banners, posters, leaflets, videos, LCD projector, and laptop. Data sources in this study were primary data obtained through direct interviews with respondents using questionnaires while secondary data was obtained from the North Sulawesi Provincial Education Office, Manado City Education Office, Manado Central Bureau of Statistics, and Manado 12 Public Elementary School. Bivariate analysis is performed using paired t-test.

III. RESULTS AND DISCUSSIONS

A. Characteristics of Respondents

Characteristics of respondents based on age and gender can be seen in the following table.

TABLE I. CHARACTERISTICS OF RESPONDENTS BASED ON AGE AND GENDER

Characteristics	Male		Female		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
9 years old	7	15.9	7	15.9	14	31.8
10 years old	9	20.5	19	43.1	28	63.6
11 years old	2	4.5	0	0	2	4.5
Total	18	40.9	26	59.1	44	100

Data obtained showed that most respondents were female, amounting to 26 students (59.1%) and men numbering 18 students (40.9%). Most respondents aged 10 years with 28

students (63.6%), then followed by 9 years of 14 students (31.8%) and 11 years of 2 students (4.5%).

B. Questionnaire Results

The results of the pre-test measurements can be seen in the following table.

TABLE II. RESULTS OF THE PRE-TEST QUESTIONNAIRE MEASUREMENT

Knowledge Category	<i>n</i>	%
Low	29	65.9
Moderate	14	31.8
High (Good)	1	2.3
Total	44	100

The data obtained shows that most respondents are in the low category with total of 29 people (65.9%). Measurement results based on 6 CHLB indicators can be seen in the following table.

TABLE III. RESULTS PER INDICATOR BASED ON PRE-TEST

Indicator		
<i>Hand Washing</i>		
Low	4	9.1
Moderate	27	61.4
High (Good)	13	29.5
<i>Eat Healthy Snacks</i>		
Low	-	-
Moderate	20	45.5
High (Good)	24	54.5
<i>Using Clean and Healthy Toilets</i>		
Low	16	36.4
Moderate	11	25
High (Good)	17	38.6
<i>Regular and measured exercise</i>		
Low	3	6.8
Moderate	27	61.4
High (Good)	14	31.8
<i>Weighing weight and height every month</i>		
Low	34	77.3
Moderate	8	18.2
High (Good)	2	4.5
<i>Disposing of garbage in its place</i>		
Low	12	27.3
Moderate	17	38.6
High (Good)	15	34.1

The table above shows that the lowest CHLB indicator with the most percentage is the indicator weighing weight and height every month with 27 people (77.3%) while the highest CHLB indicator with the highest percentage is the indicator of consuming healthy snacks with 24 people (54.5%)The results of post-test measurements can be seen in the following table.

TABLE IV. RESULTS OF MEASUREMENT OF POST-TEST QUESTIONNAIRE

Knowledge Category	<i>n</i>	%
Moderate	0	0
High (Good)	0	0
Moderate	107	100
Total	107	100

The data obtained showed that after health education intervention about the implementation of CHLB, all respondents were in the category of high (good) knowledge with a total of 44 students (100%). To see if there were statistically significant differences, a paired t-test was conducted to compare the total score of respondents before and after intervention. The results of paired t-test analysis can be seen in the following table.

TABLE V. DISTRIBUTION OF AVERAGE SCORE SCORE TOTAL QUESTIONNAIRE BEFORE AND AFTER INTERVENTION

Variable	n	Mean	SD	p-value
Knowledge of CHLB				
Before Intervention	44	25.89	3.16	0.000
After Intervention	44	44.77	0.42	

Of the 44 respondents observed, it was seen that the average (mean) total score of the questionnaire before intervention was 25.89 and the average total questionnaire score after extension was 44.77. Statistically, there were significant differences between the average total score of the questionnaire before and after the health education intervention was carried out.

C. Discussions

There are several factors that influence the formation of behavior, according to Lawrence Green in Notoatmodjo, including predisposing factors, which manifest in knowledge, attitudes, beliefs, values and so on [9]. Mubarak also explained that a behavior based on knowledge will run better than behavior that is not based on knowledge, because this behavior occurs due to coercion or rules that require to do [10]. One form of behavior is knowledge.

Clean and healthy living behavior (CHLB) in schools consists of 8 indicators, but researchers took 6 indicators, which consisted of washing hands with running water and using soap, consuming healthy snacks in the school canteen, using clean and healthy latrines, sports that regular and measurable, weighing weight and measuring height every month and throwing garbage in its place.

Based on the results of the study it was found that 13 respondents (29.5%) already knew how to wash their hands properly but for the low category there were 4 respondents (9.1%). According to the 2013 Basic Health Research what is meant by the indicator of hand washing correctly is that it involves washing hands with clean water and soap before preparing food, every time the hands are dirty, after defecating, after using pesticides (when using), after feeding the baby and before breastfeeding baby (when breastfeeding) [6].

There was an increase in the proportion of the population with proper hand washing behavior compared to 2007, which was only 23.2%. North Sulawesi Province is at a prevalence above the national prevalence of 65.9%. Based on the 2013 Basic Health Research, the higher the education, the better behavior in defecation and hand washing. This is in line with the research conducted by Amalia which shows that there is an association between education and CHLB ($p = 0.003$). The

results of this study indicate that the level of education influences a person's clean and healthy behavior [11].

hand washing behavior shows good knowledge, this is the same as that of Zuraidah and Elviani which states that there is an association between knowledge and hand washing behavior correctly with Fisher's Exact Test statistic test results with a p value of 0.029 ($\alpha \leq 0, 05$) [12]. In line with research conducted by Luthviatin et al. shows that there is a relationship between elementary school students' knowledge about CHLB and CHLB actions for elementary students with a p value of 0.012 [13].

Healthy snacks indicators based on the results of the pre-test measurements have shown good results with a total of 24 respondents (54.5%). The definition of street food/snacks according to the Food and Agricultural Organization (FAO) is food and beverages prepared and sold by street vendors in the streets and in other public places that are consumed directly or consumed without further processing or preparation. The term snack food is not far from the terms junk food, fast food, and street food because the term is part of the term snack food [14].

The results of this study are different from the results of research conducted by Iklima where the results show that 57.3% of children choose unhealthy foods. As for the results of the selection of food-related research as many as 54.3% chose unhealthy snacks, related to personal as much as 64.5% chose unhealthy snacks, social-economic related as many as 55.4% chose unhealthy snacks, and selection Related to the availability of snacks at school, the results are that children choose unhealthy snacks [15].

Indicators of clean and healthy toilets indicate that most respondents already have good knowledge to use clean and healthy latrines with a total of 17 respondents (38.6%). A latrine is a room that has a human waste disposal facility consisting of a squat or sitting area with a goose-neck or no goose-neck (traditional) toilet which is equipped with a storage unit for dirt and water to clean it. There are several conditions for healthy latrines, namely not contaminating drinking water sources, odorless, non-contactable by insects and mice, not polluting the surrounding soil, easy to clean and safe to use, equipped with protective walls and roofs, adequate lighting and air ventilation, floors water resistant, water, soap and cleaning tools available [16].

Regular exercise indicators show that most respondents have sufficient knowledge to exercise regularly with 27 respondents (61.4%) on moderate category and 14 respondents (31.8%) on good category. Child sports activities are usually carried out by playing sports, such as baseball and soccer, because elementary school children are more likely to enjoy playing sports than achievement. But based on the fact there are also some children who are lazy to exercise, most are female students. Hieve a good level of physical fitness [16].

The results of this study are in line with the research conducted by Cahyaningrum in Yogyakarta Kraton Public Elementary School which showed that the majority of respondents had good category of sports knowledge, namely 32 children (76.2%)A total of 6 children (14.3%) had enough categories and 4 children (9.5%) had a poor category [17].

Students are able to maintain a balance between time for rest and activity time. Daily activities must be arranged, so there is a balance between activities, rest and exercise. Rest not only reduces muscle activity, but can relieve mind tension and reassure the spirit, a good rest time of about 8 hours a day. Good behavior is indicated by sufficient sleep habits, most hours 8-9 at night most children are asleep and rarely stay up or sleep until late and wake up at around 5 am, so that the need for 8 hours of sleep is fulfilled [18].

Indicators weighing body weight and height indicate that most respondents still lack knowledge about the importance of weighing their weight and height every 6 months with a total of 34 respondents (77.3%). The activity of weighing and measuring height in students is done with the aim to observe the level of growth in students. The results of the measurement and weighting of the students are compared to the standard weight and height that has been set so that the teacher knows the growth of students is normal or not normal. In addition, each school must also hold a related program to measure height and weight once a month and work together with health agencies or local health centers. Not necessarily with a health agency, this activity can be carried out with a teacher or homeroom teacher at school.

Indicators of disposing of garbage in its place shows that most respondents have sufficient knowledge with a total of 32 people (71.7%). According to Evayanti, students and the school community are obliged to dispose of garbage in the trash that has been provided. Students are expected to know in choosing the type of waste such as organic waste and non-organic waste. Garbage that is scattered in the school environment can cause illness and is not beautiful to be seen by the eye. In addition, the school must provide trash bins in each class to avoid students littering for example in the classroom desk drawer. School community awareness needs to be increased to create a healthy school. Creating a healthy school can be started from small things such as throwing garbage in its place according to the type of waste, namely organic and non-organic waste [19].

CHLB coaching is needed to create and preserve the behavior of life that is oriented to cleanliness and health in schools, so that children can be independent in preventing and overcoming the health problems they face. Therefore, CHLB coaching is carried out through the implementation of Health Promotion, which is an effort to help school-aged children to know, want and be able to practice CHLB, through the learning process in preventing and overcoming health problems faced, in accordance with local social culture and supported by policies health-minded public [20].

Healthy living requires a healthy situation, condition and environment. Therefore, environmental conditions need to be properly considered so as not to damage health. Environmental health must be maintained to support the health of everyone who lives in the vicinity [21]. By implementing a good CHLB, it will support the learning activities of school children and increase children's learning motivation. This is supported by research conducted by Lestari with the results of the study that there is a relationship between clean and healthy

living behavior with learning motivation in elementary students with a p value of 0.000 ($\alpha = 0.05$) [22].

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research that has been done it can be concluded that before the health education intervention of clean and healthy living behavior, most respondents were at low category of knowledge which amounted to 29 students (65.9%) and after intervention, all respondents were at good category of knowledge which amounted to 44 students (100%). Based on the bivariate analysis carried out it can be stated that there are significant differences between the level of knowledge before and after health education for elementary students in Manado 12 Public Elementary School in Tuminting Subdistrict, Manado City. The school is expected to provide facilities that can support students in the application of clean and healthy living behavior in the school environment, namely by providing a place to wash their hands with running water, intensify the Morning Gymnastics program regularly every week, supervise the cleanliness and security of food sold in the school canteen as well as external parties selling food around the school, repairing toilet/bathroom facilities in schools, conducting weight and height checks every 3 or 6 months, and providing a place to dispose of garbage in each class and school corner.

It is also expected that the Education Office can include clean and healthy living behavior indicators in schools and in the School Health Program for elementary schools in the Manado City and monitor the course of this program and more actively provide counseling to students in schools in Manado City through monitoring, broadly evaluated and competed between schools to increase the motivation to implement clean and healthy living behavior in the school environment.

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