# Differences in Knowledge, Attitudes and Actions of Clean and Healthy Living Behaviors in School-Age Children Through Health Lore Games

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***ABSTRACT***

The emergence of various diseases that often attack school-aged children is generally related to PHBS. Therefore, Instilling PHBS values in schools is an absolute necessity and can be done through a school health business (UKS) approach. The data obtained is that not all students have implemented the eight PHBS indicators at school. The aim of this research was to determine differences in respondents' knowledge, attitudes, and actions before and after being given intervention with health lore games to State Elementary School Students 09 Pandan Airmati Market Solok City, West Sumatra. The design of this research is e-quasi-experimental without any comparison group with a population of all students in grades III, IV and V. The sampling technique is by *random sampling*, with the number of respondents 30 people. Data was collected using a questionnaire containing knowledge and attitudes. Meanwhile, for action, use an observation sheet. Data processing and analysis are carried out individually univariate and bivariate using the t-dependent statistical test and the Wilcoxon test. The research results showed that there was a significant difference in the average level of knowledge, attitudes, and actions of students before and after being given intervention through the Health Lore game arena.

Keywords, , Health Lore, PHBS, Playing

## INTRODUCTION

According to(Fadillah, 2019)Play is a series of activities or activities for children to have fun. Playing is an effort to obtain pleasure and mental satisfaction from every activity carried out, whether using game tools or not. Apart from playing, there are also the terms player and game. What is meant by players are people who carry out playing activities. A game is something that is used and used as a means of playing activities. The purpose of play is intended to determine the role of play in early childhood development. Utami Munandar stated that playing is an activity that helps children achieve complete, good physical, intellectual, social, moral and emotional development.(Fadillah, 2019)

Traditional games are game activities that grow and develop in certain areas, which are full of cultural values and community life values and are taught from generation to generation.(Euis, 2016). Traditional games, in general, provide joy to the children who play them(Euis, 2016).

Health Lore is a game that is played by jumping with one foot from one box to the next by mentioning each indicator in the box which contains health messages about the eight indicators of Clean and Healthy Living in schools which aims to increase knowledge and action. as well as character formation in the health sector in everyday life.(Gafar & Syahrum, 2022)

One way to increase knowledge, attitudes and actions of Clean and Healthy Living Behavior (PHBS) which contains positive values in it is by instilling Clean and Healthy Living Behavior

habits in schools. Cultivating the implementation of PHBS in schools is an important role in instilling The PHBS value is in an effort to support a fun learning process.

Director General of Public Health RI, 2011 in journal(Sugandini & Erawati, 2020). Clean and Healthy Living Behavior (PHBS) is a set of behaviors that are practiced on the basis of awareness as a result of learning, which makes a person, family, group or community able to help themselves (independently) in the health sector and play an active role in realizing public health.

Syafaruddin, 2021, stated that PHBS in schools is an activity to empower students, teachers and the school community to want to adopt a healthy lifestyle to create a healthy school. The benefits of PHBS in schools are able to create a clean and healthy environment, improve the teaching and learning process and make students, teachers and the school community healthy.

Irjus et al., 2022Indicators of clean and healthy living behavior at school include the following: Washing hands with running water and using soap, consuming healthy snacks from the school canteen, using clean and healthy latrines, exercising regularly and in a measured manner, eradicating mosquito larvae, not smoking at school, Weighing and measuring height, throwing rubbish in the right place.

Law Number 36 of 2009 article 79 concerning health, it is emphasized that "School Health" is implemented to improve students' ability to live healthily in a healthy living environment so that students can learn, grow and develop harmoniously and to the fullest so that it is hoped that they can become a source of quality human resources.

In theory, washing your hands with soap is useful for avoiding the spread of germs, and has been proven to reduce the risk of diarrhea by around 45%. According to WHO, 100,000 Indonesian children die from diarrhea, while data from the Ministry of Health shows that out of 1,000 residents, there are as many as 300 people who suffer from diarrhea throughout the year.(Lina, 2016). Based on data(Indonesian Ministry of Health, 2018)The proportion of correct behavior in washing hands among residents aged ≥10 years in West Sumatra is 37.9%, while in Solok City it is 25.64%. Data obtained from the Tanjung Paku Community Health Center in 2019 showed that there were 10 worm cases among students at SD 09 PPA with a percentage of 4.78%.

Furthermore, data from Riskesdas 2018 states that the proportion of unhealthy food consumption habits containing seasonings among residents aged ≥ 3 years in West Sumatra who consume it ≥1 time per day is 57.9%, and in the city of Solok, those who consume it ≥1 time per day as much as 58.91%. Meanwhile, the proportion of correct defecation behavior among residents aged ≥3 years in West Sumatra was 76.5%, and in Solok City it was 69.94%.

According to the results of an interview with the head of the UKS at SDN 09 PPA, the school provides hand washing faucets/sinks to familiarize students with clean and healthy living behavior, however many of the students have not washed their hands when they come to school. The school also provides a healthy canteen, however, there are still many students who leave school for random snacks.

The school also provides rubbish bins placed in each class in order to familiarize students with clean and healthy living behavior. When observed, there were still several people who still threw rubbish carelessly, and did not differentiate rubbish according to type. When observing the school toilet, it was found that the water was collected from a bucket so that the water could be changed every day and there were no mosquito larvae in the bucket, but there was still a latrine that looked dirty.

The information obtained is that there are several teachers who smoke not in the places provided by the school. Even though smoking is very dangerous for everyone's health. Other data obtained regarding eight PHBS indicators, schools carry out weight and height checks at least once every 6 months and there are no students who smoke at school. So it can be stated that the majority of students and school residents have not implemented clean and healthy living behavior at school

Based on the problems above, the researcher conducted research with the aim of finding out the level of knowledge, attitudes and actions of students regarding PHBS at school and to obtain differences in the average value of knowledge, attitudes and actions of respondents regarding the eight indicators of Clean and Healthy Living Behavior at school before and after it was carried out. intervention through health lore games at SDN 09 PPA Solok City. Because implementing clean and healthy living behavior is very important, so that students are trained and accustomed to living clean and healthy consistently and continuously, so that it is truly ingrained in students and eventually becomes a habit that is difficult to abandon in the future.

## METHODS

The research design used in this research is e-quasi experiment. This research aims to get an overview of the level of knowledge, attitudes and actions of students regarding PHBS at school and to obtain differences in the average value of knowledge, attitudes and actions of respondents regarding eight indicators of Clean and Healthy Living Behavior at school before and after the intervention was carried out through the Health Lore game in SDN 09 Pandan Airmati Market, Solok City.

In this study, the researcher administered the questionnaire twice, namely before the intervention was given and after the intervention was given without a comparison group

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The sampling technique was carried out using simple random sampling. The sample size in this study was 30 respondents from the entire population. Data collection for knowledge and attitude variables was carried out using a questionnaire with the tool used being a questionnaire. Meanwhile, action variables are measured by observation with the tool used is an observation sheet. The activity carried out was that the researcher gave a pre-intervention questionnaire to 30

respondents after the pre-intervention questionnaire was completed, collected, checked for completeness and continued by filling in the observation sheet.

Before intervention is carried out with respondents, the researcher will first demonstrate how to play in the Health Lore arena and its rules. After that, the researcher divided the respondents into six groups where each group consisted of five people. Then an intervention stage was carried out in the form of a health lore game which was played by each respondent in one team for two weeks, where each respondent played it twice a week with a duration of 1.5 hours.

After the intervention was carried out, the researcher again gave a post-intervention questionnaire and the respondents filled in the questionnaire sheet, the completed questionnaires were collected again and checked for completeness, after the questionnaires were collected and declared complete, they continued with data processing and analysis, namely univariate and bivariate analysis.

Univariate analysis aims to explain/describe the characteristics of each variable studied. Meanwhile, bivariate analysis aims to obtain differences in the average value of students' knowledge, attitudes and actions regarding PHBS before and after the intervention. In this study, for the knowledge and action variables, the dependent t-test with parametric statistics (normally distributed data) was used, while the attitude variable used the Wilcoxon test with non-parametric statistics (non-normally distributed data). The tests used are the dependent t-test and the Wilcoxon test, the dependent t-test with 95% confidence (alpha 0.05). If the p value < aplha (0.05) means there is a difference between the pre test and post test results, and if the p value > aplha (0.05) means there is no difference between the pre test and post test results,

## RESULTS AND DISCUSSIONS

**Table 1** Average Value of Knowledge Level Before and After Giving Intervention to Students Regarding Clean and Healthy Living Behavior at SDN 09 Pasar Pandan Airmati Solok City in 2022

| Variable | Mean | Median | elementary school | Min-Max | Tall | Low |
|---|---|---|---|---|---|---|
| **Pre** | 9,10 | 9.00 | 1,213 | 6-11 | 22 | 8 |
| **Post** | 14,10 | 14.00 | 0.923 | 12-15 | 23 | 7 |

Based on the table above, it can be seen that the average value (mean) of knowledge before the intervention was 9,10, and after the intervention was 14,10, the median before the intervention was 9,00, and after the intervention 14,00, the standard deviation before the intervention was 1.213 , and after intervention 0.923, maximum value before intervention 11, and after intervention 15, minimum value before intervention 6, and after intervention 12. For the pre-intervention knowledge variable it is categorized as high if the value is ≥ median 9 and categorized as low < median 9. For the knowledge variable Post-intervention was categorized as high if ≥ median 14 and categorized as low if < median 14. There was an increase in respondents' knowledge scores after the intervention from 22 people (73,3%) to 23 people (76,7%) with a high level of knowledge.

**Table 2** Average Value of Attitudes Before and After Giving Intervention to Student Regarding Clean and Healthy Living Behavior at SDN 09 Pasar Pandan Airmati Solok City in 2022

| Variable | Mean | Median | elementary school | Min-Max | Positive | Negative |
|---|---|---|---|---|---|---|
| **Pre** | 93.20 | 92.50 | 11,339 | 72-113 | 15 | 15 |
| **Post** | 110.83 | 112.00 | 7,474 | 93-120 | 19 | 11 |

Based on the table above, the average (mean) attitude value before the intervention was carried out was 93,20, the attitude after the intervention was 110,83, the median before the intervention was 92,50, and after the intervention was 112,00, the standard deviation before the intervention was 11,339, and after intervention 7,474, maximum value before intervention 113, and after intervention 120, minimum value before intervention 72, and after intervention 93. For pre-intervention attitude variables, it is categorized as positive if the score is ≥ median 92,50 and categorized as negative if the score is < median 92,50 . There was a change in positive attitude scores after the intervention from 15 respondents (50%) to 19 people (63,3%)

**Table 3** Average Value of Actions Before and After Giving Intervention to Students Regarding Clean and Healthy Living Behavior at SDN 09 Pasar Pandan Airmati Solok City in 2022

| Variable | Mean | Median | elementary school | Min-Max | Done | Are not done |
|---|---|---|---|---|---|---|
| **Pre** | 9.90 | 10 | 0.885 | 8-12 | 20 | 10 |
| **Post** | 15.60 | 16 | 0.770 | 13-16 | 22 | 8 |

Based on the table above, it can be seen that the average value (mean) of the actions before the intervention was (9.90), and after the intervention was (15,60), the median before the intervention (10), and after the intervention (16), the standard deviation before intervention (0,885), and after intervention (0,70), maximum value before intervention (12), and after intervention (16), minimum value before intervention (8), and after intervention (13). For the pre-intervention attitude variable, it was categorized as carried out if the score was ≥ median (10) and categorized as not carried out if the score was ≤ median (10). For the post-intervention attitude variable, it was categorized as carried out if the score was ≥ median (16) and categorized as not carried out if the score was ≤ median (16). There was a change in the action value after the intervention from 20 respondents (66,7%) to 22 respondents (73,3%).

**Table 4** Difference in Average Value of Knowledge Before and After Health Lore Intervention at SDN 09 Pasar Pandan Airmati Solok City in 2022

| Variable | Mean | elementary school | S.E | p.value | N |
|---|---|---|---|---|---|
| **Pre Intervention** | 9,10 | 1,213 | 0.168 | 0,000 | 30 |
| **Post Intervention** | 14,10 | 0.923 | 0.222 | | |

Based on the table above, the average pre-intervention knowledge level is 9,10 with a standard deviation of 1,213, while the average post-intervention knowledge level is 14,10 with a

standard deviation of 0,923. The statistical test results obtained a value of p=0.000, meaning that at alpha <5% there was a significant difference in the average level of student knowledge between pre and post intervention after the health lore game was played.

This is because the intervention in the form of a health Lore game can create excitement in students, the excitement generated in the learning process can help students' understanding of the material they receive about PHBS. According to Notoatmodjo in the book Adiputra et al(2021)that knowledge is a further effect of individual curiosity regarding objects through the senses they have. Each individual has different knowledge because each person's sense of an object is different.

Research resultNurhidayati and Hilal 2018regarding "The Influence of Health Education about PHBS using the Snakes and Ladders Game Media and Lectures on the Knowledge of Limpakuwus Public Elementary School Students, Banyumas Regency in 2017" it is known that there was an increase in the average (mean) knowledge score before and after being given counseling with the snakes and ladders game. Elementary school children are children aged 6-12 years. In line with this reality, Usman inNurhidayati and Hilal 2018said that the use of teaching aids that are relevant to teaching objectives can improve learning outcomes so that they are more meaningful and long-lasting.

Research result(Sutriyanto et al., 2016) regarding "The Effect of the Kasugi Card Game on Increasing Knowledge of Clean and Healthy Living Behavior in Students" shows that there is an influence of the Kasugi card game given at least once on increasing knowledge of clean and healthy living behavior in elementary school students in West Bandung Regency. This is in line with the results of research in England conducted by Blakely, et al which stated that educational games were proven to be effective in supporting learning, especially for increasing knowledge.

The results of this research are also in line with the results of research in India conducted by Akshatha Nayak, et al which stated that game-based learning is an effective health education method for increasing the knowledge of elementary school children. Playing contains aspects of fun and excitement so that it can arouse children's interest in participating. The joy generated in the learning process can help students' understanding of the material they receive. Georgi Lazanov said that a pleasant learning process will "build positive suggestions" or in other words a pleasant learning situation will provide more optimal learning results.(Sutriyanto et al., 2016)

This research is in line with research(Maimun et al., 2017)with the title "The Influence of Child Health in Improving Knowledge, Attitudes and Actions, Clean and Healthy Living Behavior, Class V Students of State Elementary School 12 Poasia, Kendari City in 2016" shows the results that respondents who have received intervention in the form of PHBS demonstrations by KELI have experienced an increase from 74.5 % to 95.7% which is included in the sufficient category. It can be concluded that there is a significant difference in the respondents' knowledge after being given education by KELI, which is better than before being given education by KELI in the intervention group.

The statistical test used for bivariate analysis was the Wilcoxon test to test the difference in average attitude scores pre and post Health Lore intervention. The statistical test results show the following.

**Table 5** Differences in the Mean Rank Values of Respondents' Attitudes Before and After the Health Lore Intervention at SDN 09 Pasar Pandan Airmati Solok City in 2022

**Ranks**

| | N | Mean Rank | Sum of Ranks | Asymp. Sig (2-tailed) |
|---|---|---|---|---|
| Positive Ranks | 29b | 15.00 | 435.00 | |
| Ties | 1c | | | |
| Total | 30 | | | |
| Negative Ranks | 0a | .00 | .00 | |

Based on table 5 above, it is known that the results of Asymp. Sig (2-tailed) is worth 0.000. Because the value 0.000 < 0.005. So it can be concluded that there is a significant difference in the average pre- and post-intervention attitude scores after the health lore game was played. The results of this research are in accordance with the statementRosenberg's theory in Notoatmodjo (2011) states that knowledge and attitudes are consistently related, if the cognitive component (knowledge) changes, it will be followed by a change in attitude.(Mashitah & Ispriantari, 2017).

Notoadmojo (2010) in book(Awet, 2016). Attitude is a person's closed response to a particular stimulus or object, which already involves the relevant opinion and emotional factors (happy or unhappy, agreeing or disagreeing, good or bad, etc.)

This research is in line with research conducted by(Mashitah & Ispriantari, 2017)by title ""The Effect of the Course Review Horay Method on Knowledge, Attitudes and Practices of Clean and Healthy Living Behavior (PHBS) in School-Age Children" shows that there was an increase in the average attitude score before and after the intervention.

This research is in line with research conducted by(Mawaddatin & Festy, 2015)by title "The Effect of Imaginative Pretend Play Using Animation Video Media: Knowledge and Attitudes of Clean and Healthy Living Behavior" was obtainedChildren's knowledge about clean and healthy living behavior (PHBS) before being given imaginative pretend play with animated video media is in the poor classification, while children's attitudes regarding clean and healthy living behavior (PHBS) before being given imaginative pretend play with animated video media is in the negative attitude classification. Children's knowledge about clean and healthy living behavior (PHBS) after being given imaginative pretend play with animated video media is in the good classification, while children's attitudes regarding clean and healthy living behavior (PHBS) after being given imaginative pretend play with animated video media are in the positive attitude classification. There is an influence of imaginative pretend play using animated video media on knowledge and attitudes towards clean and healthy living behavior (PHBS) in school children at SDN 1 Sutorejo and SDN 2 Sutorejo.

This research is in line with research conducted by(Maimun et al., 2017)by title "The Influence of Child Community Health in Increasing Knowledge, Attitudes and Actions for Clean and Healthy Living Behavior in Class V Students of State Elementary School 12 Poasia, Kendari City in 2016" there are significant differencesThis means that the respondent's attitude after being given education by KELI was better than before being given education by KELI.

**Table 6** Differences in the Average Value of Respondents' Actions Before and After the Health Lore Intervention at SDN 09 Pasar Pandan Airmati Solok City in 2022

| Variable | Mean | elementary school | S.E | p value | N |
|---|---|---|---|---|---|
| **Pre Intervention** | 9.90 | 0.885 | 0.141 | 0,000 | 30 |
| **Post Intervention** | 15.60 | 0.770 | 0.162 | | |

Based on the table above, the average pre-intervention action score is 9,90 with a standard deviation of 0,885, while the average post-intervention action score is 15.60 with a standard deviation of 0,770. The statistical test results obtained a value of p = 0,000, meaning that at alpha <5% there was a significant difference in the average student actions between pre and post intervention after the health lore game was played.

The results of this study showed that of the 30 respondents, 22 people carried out health lore intervention actions 100% correctly, 5 people carried out health lore intervention actions 87.5% correctly, 2 people carried out health lore intervention actions 75% correctly, and 1 person carry out health lore intervention actions correctly 62.5%.

According to Zulkifli in Nurhidayati and Hilal 2018 stated that children have the nature of playing. Games are activities that are chosen by oneself without any element of coercion, without being pressured by a sense of responsibility. Children like to play because within them there is an inner drive and a drive to develop themselves.

In this study, the intervention carried out was a health lore game. Health lore is a game played by jumping with one foot from one box to the next by mentioning each indicator in the box which contains health messages about eight indicators of Clean and Healthy Living in schools which aims to increase knowledge and action. as well as character formation in the health sector in everyday life. (Gafar Abdul, et al. 2021. The implementation of this intervention uses a lore arena that has been prepared, so that the intervention given can be implemented effectively with students.

Based on the research results, 30 students after carrying out the health lore intervention regarding Clean and Healthy Living Behavior using the lore arena that had been provided, that 30 students were correct in taking action regarding the 8 PHBS indicators. This is due to an increase in knowledge, attitudes and actions after the intervention.

This research is in line with research conducted by(Mashitah & Ispriantari, 2017)by title ""The Influence of the Horay Course Review Method on Knowledge, Attitudes and Practices of

Clean and Healthy Living Behavior (PHBS) in School-Age Children" shows an increase in the average practice score before and after the intervention of 4.46.

The results of this research are also in line with the theory of reasoned action put forward by Glanz et al (2008) that behavior is influenced by attitudes towards that behavior. The attitudes formed together with knowledge will influence a person's behavior. So it can be concluded that with good knowledge, good attitudes, a person's actions or practices will be good too.(Mashitah & Ispriantari, 2017)

The results of this study are also in line with research(Maimun et al., 2017)There was a significant difference in the respondents' actions after being given education by KELI which was better than before being given education by KELI in the intervention group.

## CONCLUSION

1. There was an increase in students' knowledge, attitudes and actions regarding eight PHBS indicators in schools after intervention through health lore games.
2. There is a difference in the average value of knowledge, attitudes and actions before and after the intervention through the health lore game.

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