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THE RELATIONSHIP OF HAND WASHING BEHAVIOR TOWARDS DIARRHEA CASES IN SCHOOL-AGE CHILDREN

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Research Report

A B S T R A C T

Introduction: *Hand washing is one of the current clean and healthy living behaviours that is a world concern. The problem of bad-hand washing behaviour not only occurs in developing countries but also in developed countries where most people still forget the importance of washing hands. The prevalence of diarrhoea among children aged 5-14 years reaches 182.338 (6.2%). The objective of this study was to determine the relationship between hand-washing behaviour and cases of diarrhoea in school-age children at Angkasa 2 Elementary School.* ***Methods:*** *This research method is quantitative, with a descriptive correlation research design, and uses a cross-sectional approach. The sample in this study was 63 respondents taken by purposive sampling. Data collection used questionnaires and observation sheets, analyzing data using a Chi-square test.* ***Results:*** *73.01% of respondents had good hand-washing behaviour, while 26.98% had less hand-washing behaviour. Then, the respondents with good diarrhoea cases were 69.84%, and those with fewer diarrhoea cases were 30.15%. The statistical test showed a relationship between the variables of hand-washing behaviour with cases of diarrhoea (p =<0.001).* ***Conclusions:*** *There is a relationship between hand-washing behaviour and cases of diarrhoea in school-age children at Angkasa 2 elementary school. Hand washing is the most important basic technique in preventing and controlling the transmission of diarrheal diseases. It is necessary to have good facilities and knowledge about hand-washing, and the delivery of messages must be done recur so that understanding can align with these behavioural practices.*

A R T I C L E I N F O

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INTRODUCTION

Hand washing is one of the clean and healthy living behaviors (PHBS) is currently a world concern. The problem of bad-hand washing behavior does not only occur in developing countries but also in developed countries where most people still forget about the importance of washing hands. As a result, the incidence of diarrhea is still high in countries such as Indonesia. Therefore, on October 15, 2008, the United Nations (UN) set a global handwashing day with a soap that focuses on school children as agents of change (Kementerian Kesehatan Republik Indonesia, 2011).

School-age children have a habit of not paying attention to the need for hand washing in daily life. This behavior is certainly influential and can contribute to the diarrheal disease. Hand washing is the most important basic technique in preventing and controlling the transmission of diarrheal diseases (Kementerian Kesehatan Republik Indonesia, 2016).

According to the World Health Organization (WHO), diarrhea is the occurrence of bowel movements with a more fluid consistency than usual, with a frequency of three or more times in 24-hours caused by infection with microorganisms including bacteria, viruses, parasites, protozoa, and fecal-oral transmission. There are 1.7 billion cases of diarrhea child mortality reach 525,000 annually (Hamzah et al., 2020).

The prevalence of diarrhea in Indonesia according to the characteristics based on the 2018 Riskesdas was recorded as 18,225 (9%) children with diarrhea in the <1 year age group, 73,188 (11.5%) children with diarrhea in the 1–4-year age group, 182,338 (6.2%) children with diarrhea in the age group 5-14 years, and as many as 165,644 (6.7%) children with diarrhea in the age group 15-24 years (Riset Kesehatan Dasar, 2019).

Cases of diarrhea in West Java according to the characteristics based on the 2018 Riskesdas, there were 1,287 (10.40%) children with diarrhea in the <1 year age group, 5312 (13.43%) children with

diarrhea in the 1–4 year age group, 12,806 (6.98%) children with diarrhea in the age group of 5-14 years, and as many as 12,409 (7.24%) children with diarrhea in the age group of 15-24 years. Furthermore, in cases of diarrhea in the Subang district based on the 2018 Riskesdas, the incidence of diarrhea was recorded at 2,378 (5.61%) people, while in toddlers there were 184 (9.58%) (Riset Kesehatan Dasar, 2019).

The high incidence of diarrhea in children is caused by many factors. Factors that increase the risk of diarrhea are: poor sanitation, poor hygiene facilities, poor personal hygiene (not washing hands before, after eating, and after defecating)

Steps taken by the government to reduce the incidence of diarrhea, especially in school-age children, are to organize a School Health Business (UKS). One of the UKS programs designed to improve students' health is by providing Health Education on Clean and Healthy Life Behavior (PHBS). While the PHBS indicators are one of them, namely washing hands with running water and using soap.

Based on research conducted by Awyono (2016) about the relationship between handwashing behavior in diarrhea sufferers in Kintamani Village, Bangli Regency, Bali, the results showed: research showed good handwashing behavior had the least incidence of diarrhea (14.89%), followed by poor handwashing behavior. (53.8%), and the most experienced diarrhea is poor hand washing behavior (64.3%).

The results of a comparative study at SDN Angkasa 2 show that SDN Angkasa 2 has facilitated its students with tap water and hand washing soap in front of each class so that students can wash their hands properly using soap and running water, UKS at SDN Angkasa 2 are also still active in providing health education about Clean and Healthy Life Behavior (PHBS), one of which is washing hands, but at SDN Angkasa 2 itself, there are still many students who experience the diarrheal disease as evidenced by the homeroom teachers often getting sick leave letters from students' parents who say their children have affected diarrhea so that they cannot follow the lessons at school. The results of the researchers' observations on March 9-11 showed that 7 out of 10 children could not wash their hands according to the 6-step handwashing standard from the Indonesian Ministry of Health.

The purpose of this study was to determine the relationship between hand washing behavior and cases of diarrhea in school-age children at SDN Angkasa 2 Subang.

MATERIALS AND METHODS

This research is a type of quantitative research, with a descriptive correlation research design, which uses a cross-sectional approach. This research was conducted at Angkasa 2 Elementary School, Suryadarma Air Base, West Kalijati Village, Kalijati District, Subang Regency, West Java Province. The research was conducted on 7 - 8 April 2022. The population in this study was 221 students in grades 1-6 at SDN Angkasa 2 Kalijati District of Subang Regency. Sampling using the Purposive Sampling technique. The sample used in this study is the population that is included in the inclusion and exclusion criteria.

The inclusion and exclusion criteria in this study are Inclusion Criteria is School-age children (6-12 years old), student at SDN Angkasa 2, can read and write fluently, cooperatives become participants in this study. Exclusion criteria is moderately ill, refuse to participate in research. The sample size in this study amounted to 63 people based on the Arikunto (2015) formula, namely the sample was taken 30% of the total population.

This univariate analysis was to determine the behavior of washing hands and diarrhea cases of respondents. The analyzed data has an ordinal scale, so the statistical test used is chi-square. The results of the analysis will be obtained in p-value. If the p-value <0.05, it means that there is a relationship between hand washing behavior and cases of diarrhea. Meanwhile, to decide whether there is a relationship between the independent variable and the dependent variable, a p-value is used which is compared with the level of significance (alpha) used, which is 5% or 0.05. If the p-value < 0.05 means that there is a relationship between the independent variable and the dependent variable.

RESULTS

Table 1. Distribution of Respondents Characteristics Angkasa 2 Elementary School, Suryadarma Air Base, West Kalijati Village, Kalijati District, Subang Regency, West Java Province (April, 2022).

Characteristics		Frequency	Percentage
Age	9	5	7,93
	10	20	31,75
	11	22	34,92
	12	16	25,40
	Total	**63**	**100**
Class	Class 4	22	34,92
	Class 5	25	39,68
	Class 6	16	25,39

Characteristics		Frequency	Percentage
	Total	**63**	**100**
Gender	Man	47	74,60
	Woman	16	25,40
	Total	**63**	**100**

Data distribution of respondents almost half the age of respondents is 11 years (34.92%). Then the distribution data of respondents by class shows that almost half of the respondents are class 5 (39.68%). And the data on the distribution of gender respondents showed that most of the respondents were male (74.60%).

Table 2. Distribution of Frequency Handwashing Behavior and Diarrhea Cases Respondent at SDN Angkasa 2 Elementary School, Suryadarma Air Base, West Kalijati Village, Kalijati District, Subang Regency, West Java Province (April, 2022).

Category	Interval	f	(%)
Hand Washing Behavior			
Good	11-20	46	73,01
Bad	0-10	17	26,98
	Total	**63**	**100**
Diarrhea Cases			
Low	0-2	44	69,84
High	3-5	19	30,15
	Total	**63**	**100**

It shows that most respondents have good hand washing behavior as much as 73.01%, and respondents who have less hand washing behavior as much as 26.98%. Table 3 shows that most of the respondents who had low cases of diarrhea were 69.84%, and those who had high cases of diarrhea were 30.15%.

Table 4. Handwashing Behavior Against Diarrhea Cases at SDN Angkasa 2 Elementary School, Suryadarma Air Base, West Kalijati Village, Kalijati District, Subang Regency, West Java Province (April, 2022).

Hand washing behavior	Diarrhea Cases				Total	
	Low		High			
	f	(%)	f	(%)	f	%
Good	42	66.66	0	0	42	66,66
Bad	4	6,34	17	26,98	21	33,33
Total	46	73,01	17	26,98	63	100

P *value* < 0,001

Statistical test results obtained p value <0.001 with a correlation value of 92.5%. This shows that there is a relationship between the variables of hand washing behavior with cases of diarrhea (p <0.05).

DISCUSSION

Most of the respondents had diarrhea cases in the low category, namely 69.84%, but there were still respondents with high diarrhea cases. This is in line with the research conducted by Indriyan et al., (2018) with the title of diarrhea prevalence in elementary school children in the working area of the Mulyorejo Health Center, Surabaya, showing that the prevalence of diarrhea is 51.5%,

Based on Witsqa Firmansyah et al., (2021) the factors that influence cases of diarrhea in children are water sources, latrines and snack habits. The water source at SDN Angkasa 2 is good because the water used is odorless, tasteless and colorless. The latrines also look clean with good water sources. Snacking habits, when snacking carelessly, especially in places where cleanliness is not guaranteed, diarrhea is the most common disease experienced. This problem occurs because the food consumed is not necessarily clean and of good quality. Both from the raw materials, processing processes, to storage.

This is reinforced by the research conducted by Utama et al., (2019) with the title of the relationship between family latrine conditions and clean water facilities with the incidence of diarrhea in children, the results show that there is a relationship between latrine conditions and the incidence of diarrhea (p = 0.001) and there is a relationship between the condition of the facilities clean water with diarrhea (p=0.009). In a study conducted by Almanfaluthi & Hidayat Budi (2015) entitled the relationship between street food consumption and diarrheal disease in elementary

school children, the results showed that there was a relationship between street food and diarrhea (p = 0.002).

Good water sources and latrines at SDN Angkasa 2 will not reduce cases of diarrhea if the habit of snacking, washing hands, and the respondent's clean and healthy living behavior is still bad. This is what causes there are still respondents who experience diarrhea.

Hand washing behavior is related to diarrhea cases (p=<0.001) with a correlation value of 92.5%. This is in accordance with the opinion of World Health Organization (2019) that washing hands with soap has been shown to reduce the incidence of diarrheal diseases by approximately 40%. Washing hands here is more emphasized at the time before eating and after defecating. Hand washing is one of the most cost-effective interventions to reduce the incidence of diarrhea in children.

This is reinforced by the results of research conducted by Rompas et al., (2013), with the title of research on the influence of handwashing with soap and the incidence of diarrhea in school-age children at SD GMIM 2 Tareran District (p=0.003), Sunardi; & Ruhyanuddin, (2017) with the title handwashing behavior has an impact on the incidence of diarrhea in school-age children in Malang Regency (p=<0.001), and Radhika (2020) with the title the relationship between handwashing behavior with soap and the incidence of diarrhea in elementary school-aged children (p=0.013), of the three The research journal shows that the results of statistical tests have a relationship between hand washing behavior and the incidence of diarrhea.

According to the hand washing is one of the sanitation actions by cleaning hands and fingers using water and soap by humans to clean and break the chain of germs, washing hands using soap is also known as an effort to prevent disease. Based on research by Cordita et al., (2019) in the title of comparing the effectiveness of washing hands using soap with hand sanitizer, washing hands using soap is much more effective in killing germs with a decrease in the number of germs reaching 73%.

Based on the research journal above, it can be concluded that hand washing can reduce cases of diarrhea, by washing hands can kill the germs that cause diarrhea itself because the germs that cause diarrhea are transmitted fecal-oral, namely through food or drink contaminated with germs or direct contact with sufferers or indirectly, through flies.

Hand washing behavior most of the respondents were in the good category as much as 73.01%, but there were also respondents whose hand washing behavior was still lacking. This is in line with Lawrence Green's theory in Notoatmodjo (2010) that behavior is formed due to three factors, namely predisposing factors (knowledge), enabling factors (adequate facilities), and reinforcing factors. Students at SDN Angkasa 2 have been given knowledge about hand washing, and in terms of facilities it is very adequate where in front of each class there is a water tap with a good source of water and soap.

This is reinforced by research conducted by (Pauzan & Fatih, 2107) with the title of research on the relationship of knowledge with hand washing behavior of students at SDN Cicadas 2 Bandung City, which shows the results of a relationship between knowledge and hand washing behavior (p = 0.015). In a study conducted by Nufus & Tahlil (2017) with the title the availability of facilities and hand washing behavior in elementary school age children, it was shown that there was a significant relationship between the availability of facilities and hand washing behavior of school age children (p = 0.002).

The survey conducted by Kementerian Kesehatan Republik Indonesia, (2016) If someone already understands the importance of washing hands with soap, they do not automatically practice it. The fact shows that the introduction of hand washing with soap in Indonesia has started since the 1980, but the survey of hand washing behavior in Indonesia on the 5 important times of washing hands with soap shows very low results, 12% after going to the toilet, 9% after defecating, 14% before eating, 7% before handling food, and only 6% before preparing food.

This is in line with Merlina (2021), entitled the relationship between knowledge and behavior of washing hands with soap in elementary school students in the working area of the Gedong Tataan Health Center, with the result that 62.2% of students have good knowledge but only 53.3% have good knowledge. have good hand washing behavior, the results also show a relationship between knowledge and behavior in washing hands with soap (p = 0.022).

Therefore, in addition to providing good facilities and knowledge about hand washing, the delivery of messages must also be done repeatedly so that understanding can be in line with these behavioral practices. This is what causes there are still respondents who have poor hand washing behavior.

CONCLUSIONS

There is a relationship between handwashing behavior and cases of diarrhea in school-age children at SDN Angkasa 2. (p=<0.001), with a correlation value of 92.5%. Develop community nursing practice, especially in schools in the School Health Unit program.

REFERENCES

Almanfaluthi, M. L., & Hidayat Budi, M. (2015). Hubungan antara konsumsi jajanan kaki lima terhadap penyakit diare pada anak sekolah

dasar. *MEDISAINS: Jurnal Ilmiah Ilmu-Ilmu Kesehatan*, *13*.

Arikunto. (2015). *Prosedur Penelitian*. Rineka Cipta.

Awyono, S. (2016). Gambaran perilaku mencuci tangan pada penderita diare di Desa Kintamani Kabupaten Bangli Bali Tahun 2015. *Intisari Sains Medis*, *7*(1), 67. https://doi.org/10.15562/ism.v7i1.11

Cordita, R. N., Soleha, T. U., & Mayasari, D. (2019). Perbandingan Efektivitas Mencuci Tangan Menggunakan Hand Sanitizer dengan Sabun Antiseptik pada Tenaga Kesehatan di Ruang ICU RSUD Dr. H. Abdul Moeloek. *J Agromedicine*, *6*(1), 145–153. https://juke.kedokteran.unila.ac.id/index.php/agro/article/view/2266/pdf

Hamzah, W., Gobel, F. A., & Syam, N. (2020). Kejadian Diare Pada Balita Berdasarkan Teori Hendrik L. Blum di Kota Makassar. *Media Kesehatan Politeknik Kesehatan Makassar*, *XV*(1), 50–58.

Indriyan, E., DewI, Y. L. R., & Salimo, H. (2018). Biopsychosocial Determinants of Stunting in Children Under Five: A Path Analysis Evidence from the Border Area West Kalimantan. *Journal of Maternal and Child Health*, *03*(02), 146–155. https://doi.org/10.26911/thejmch.2018.03.02.07

Kementerian Kesehatan Republik Indonesia. (2011). *Pedoman Pemberantasan Penyakit Diare*.

Kementerian Kesehatan Republik Indonesia. (2016). *Survei Perilaku Mencuci Tangan Di Indonesia Terhadap 5 Waktu Penting Cuci Tangan Pakai Sabun*.

Merlina, B. (2021). Gambaran pengetahuan dan perilaku cuci tangan pakai sabun (CTPS) pada siswa Sekolah Dasar di Wilayah Kerja Puskesmas Gedong Tataan. *Ruwa Jurai: Jurnal Kesehatan Lingkungan*, *12*(2), 102. https://doi.org/10.26630/rj.v12i2.2763

Notoatmodjo. (2010). *Promosi Kesehatan Dan Perilaku Kesehatan*. Rineka Cipta.

Nufus, H., & Tahlil, T. (2017). Ketersediaan fasilitas dan perilaku cuci tangan pada anak usia sekolah dasar. *Journal Ilmiah Mahasiswa*, *2*(3). http://jim.unsyiah.ac.id/FKep/article/view/4066

Pauzan, & Fatih, H. A. (2107). Hubungan pengetahuan dengan perilaku cuci tangan siswa di SDN Cicadas 2. *Jurnal Keperawatan BSI*, *5*(1), 18–23. https://ejournal.bsi.ac.id/ejurnal/index.php/jk/article/view/1458.

Radhika, A. (2020). Hubungan tindakan cuci tangan pakai sabun dengan kejadian diare pada balita di RW XI Kelurahan Sidotopo, Kecamatan Semampir, Kota Surabaya. *Medical Technology and Public Health Journal (MTPH Journal*, *4*(1). https://journal2.unusa.ac.id/index.php/MTPHJ/article/view/773/1037

Riset Kesehatan Dasar. (2019). *Perilaku Mencuci Tangan Berdampak Pada Insiden Diare Anak Usia Sekolah Di Kabupaten Malang*.

Rompas, M. J., Tuda, J., & Ponindjan, T. (2013). Hubungan antara perilaku cuci tangan pakai sabun dengan terjadinya diare pada anak usia sekolah di SD GMIM Dua Kecamatan Tareran. *Ejournal Keperawatan (e-Kp)*, *1*(1), 1–8. https://ejournal.unsrat.ac.id/index.php/jkp/article/view/2201/1759

Sunardi;, & Ruhyanuddin, F. (2017). Perilaku mencuci tangan berdampak pada insiden diare pada anak usia sekolah di Kabupaten Malang. *Jurnal Keperawatan*, *8*(1), 85–95. http://ejournal.umm.ac.id/index.php/keperawatan/issue/view

Utama, S. Y. A., Inayati, A., & Sugiarto. (2019). Hubungan kondisi jamban keluarga dan sarana air bersih dengan kejadian diare pada balita Di Wilayah Kerja Puskesmas Arosbaya Bangkalan. *Dinamika Kesehatan Jurnal Kebidanan Dan Keperawatan*, *10*(2), 820–832. ksm/article/view/465/421

Witsqa Firmansyah, Y., Fadli Ramadhansyah, M., Fathan Fuadi, M., & Nurjazuli, N. (2021). Faktor-faktor yang mempengaruhi kejadian diare pada balita: Sebuah review. *Buletin Keslingmas*, *40*(1). http://ejournal.poltekkes-smg.ac.id/ojs/index.php/keslingmas/issue/archive

World Health Organization. (2019). *United Nations Interagency Group for Child Mortality Estimation (UNIGME) Levels & Trends in Child Mortality Report 2019 Estimates Developed by the United Nations Interagency Group for Child Mortality Estimation.*