Description of Knowledge, Attitudes, and Practices of Mothers who have Toddlers against Diarrhea

Abstract

Diarrhea is a bowel movement or feces with liquid or semi-solid fecal water content over 200gram or 200ml / 24h (IPD Books 2014). This study aims to determine the description of Knowledge, Attitudes, and Behavior Against Mothers Who Have Toddler Diarrhea In East Jakarta Sub 2017. This research method is a descriptive survey; the population is all mothers with children in Cawang Districts samples. How sampling in this study conducted probability sampling with a simple random sampling technique. The number of samples that the researchers used was 100 respondents (people). This research was conducted on April 5, 2016. The study results found that most mothers know enough about diarrhea, that is, 41 people (41%). For the attitude of mothers and children against diarrheal disease most negative attitude is 57 people (57%). While the practice of mothers and children against diarrheal at most have a pretty good practice, which amounted to 56 (56%).

Keywords: *attitudes, diarrhea, knowledge, practice, todler*

Introduction

Diarrhea is still a public health problem in developing countries such as Indonesia because of its high morbidity and mortality. Diarrhea is the second leading cause of death in children under five after pneumonia. It is estimated that 4 billion cases of diarrhea occur yearly in children under five worldwide. Every year, 1.5 million children under five die from diarrhea. Diarrhea causesdeath more quickly in children than in adults due to dehydration and malnutrition (1).Various factors influence the occurrence of death, malnutrition, or recovery in patients with diarrhea. Diarrhea is caused by weather, environment, and food factors. The main factors are climate change, dirty environmental conditions, and lack of attention to food hygiene. Diarrhea is generally transmitted through 4F, namely, food, flies, feces, and fingers (2). In toddlers, the incidence of diarrhea is more dangerous than that in adults. If diarrhea occurs, toddlers are more susceptible to dehydration and other complications that can lead to malnutrition and death.

In extraordinary events, diarrhea is also still common, with CFR high. In 2008, there were outbreaks in 69 sub-districts with 8,133 cases and 239 deaths (CFR 2.94%)(3). In 2009, there were outbreaks in 24 sub-districts with 556 cases, with 100 deaths (CFR 1.74%), while in 2010, there were diarrhea outbreaks in 33 districts with 4204 patients with 73 deaths (CFR 1.74%).A step in achieving the MDG's target (Goal 4) is to reduce child mortality to 2/3 from 1990 to 2015. Based on the Household Health Survey Mortality Studies and Basic Health Research from year to year, diarrhea is still the leading cause of under-five mortality in Indonesia (3). The leading cause of diarrhea death is improper management at home and in health facilities (4). Fast and appropriate management is needed to reduce deaths due to diarrhea.

Diarrhea is included in the ten diseases that often cause extraordinary events. Based on the integrated disease surveillance extraordinary event in 2010, diarrhea ranks 6th in the highest frequency of outbreaks after Dengue Haemoragic Fever **(**DHF), Chikungunya, food poisoning, Diphtheria, and Measles(5). This situation is not much

different from 2009. According to 2009,Integrated Disease Surveillance (IDS) Extraordinary events data, the 7th most common diarrheal disease outbreak causes outbreaks [6].

What is the description of the knowledge, attitudes, and behavior of mothers who have toddlers toward diarrheal diseases in the Cawang sub-district, East Jakarta, in 2017? Based on the problems stated above, this research's objective is: "What is the description of the knowledge, attitudes, and behavior of mothers who have toddlers toward diarrheal diseases in Cawing sub-district, East Jakarta in 2017? The study aims to describe the knowledge, attitudes, and behavior of mothers who have children under five with diarrheal diseases in the Cawang sub-district, East Jakarta, in 2017.

Literature Review

The digestive tract consists of the mouth, throat (pharynx), esophagus, stomach, small intestine, large intestine, rectum, and anus. The physiology of the digestive system or gastrointestinal system (from the mouth to the anus) is an organ system in humans that functions to receive and digest food into nutrients and energy, then absorbs nutrients into the bloodstream and removes parts of food that cannot be digested.

When the body receives food, food will be cut into pieces by the teeth and chewed into small parts that are easier to digest. The saliva from the salivary glands will wrap the parts of the food with digestive enzymes and start digesting them. The swallowing process starts consciously and continues automatically. After the food is digested in the mouth, it enters the pharynx and esophagus. In the esophagus, food will go to the stomach through the peristaltic process (7; 8). Food should mixed with hydrochloric acid (HCL) and digestive enzymes that digest protein, so it becomes chyme when in the stomach. Then channeled into the small intestine little by little.

The small intestine consists of the duodenum, the empty intestine (Jejenum), and the absorptive intestine (Ileum). The duodenum continues the digestion process of food that the previous digestive tract organs carried out. Subsequent digestion processes by the duodenum, such as the digestion of carbohydrates, fats, and proteins into simpler substances with the help of enzymes from the pancreas (9). To digest fat, bile salts are also needed to synthesize it. The process occurs when fat in contact with the duodenal mucosa causes gallbladder contraction mediated by the action of cholecystokinin, which results from the secretion from the duodenal mucosa (10). In the small intestine epithelium, essential enzymes break down disaccharides and small-glucose polymers into monosaccharides, namely, lactase, sucrase, maltase, and alpha dextrinase (11). The next process is the absorption of essential substances from the previously digested food. Sugars, amino acids, and fats are absorbed mainly in the duodenum and jejunum (4). Likewise, the absorption of iron and calcium requires vitamin D. Fat-soluble vitamins (A, D, E, K) are absorbed in the duodenum, and bile salts are needed in the process (12). The food will then enter the jejunum. In the jejunum, protein and carbohydrates will be absorbed. Food is then passed to the ileum, which has a pH between 7 and 8 (neutral or slightly alkaline) and functions to absorb vitamin B12 and bile salts (6). After the absorption process from the ileum, the food is channeled to the large intestine (colon). The primary function of this organ is to absorb water and minerals and form feces. In this organ, there are bacteria as regular flour, which functions to make essential substances, such as vitamin K (13). After the process in the large intestine (colon) that produces feces, the feces will be channeled into the rectum.

The rectum is a space that begins at the large intestine (after the sigmoid colon) end and ends at the anus. This organ serves as a temporary storage place for feces. If the descending colon is entire and feces enter the rectum, the urge to defecate arises (14). The expansion of the rectal wall due to the accumulation of material in the rectum will trigger the nervous system, which causes the urge to defecate.

The anus is the opening at the end of the digestive tract, through which waste materials exit the body. Part of the anus is formed from the body's surface (skin) and partly from the intestine. The opening and closing of the anus are regulated by the sphincter muscle (15). Feces are removed from the body through defecation (defecation), which is the primary function of the anus.

Diarrhea is defecation or defecation with liquid or semi-solid stools. The water content of the stool is more than usual, more than 200 gmor 200 ml/24 hours (16). According to Elizabeth J Crown, Diarrhea is an increase in the dilution and frequency of stool. Diarrhea may be in large or small volumes and may be accompanied or without blood. Another definition uses the frequency criterion, watery stools more than three times per day. The bowel movements may be accompanied by mucus and blood. According to the 2013 RISKESDAS, the highest diarrhea prevalence occurred in Papua provinces at 6.3%, South Sulawesi at 5.2%, and Aceh, while in DKI Jakarta, it was 4.3%. For the prevalence of diarrhea by age, the highest age was <1 year at 7.0%, followed by age 1-4 years at 6.7%. It means that the prevalence of diarrhea in children under five is very high. Based on the age of toddlers, the most experienced diarrhea was the age of 12-23 months, 9.7%, followed by the age of 24-35 months with a presentation of 7.4% (1).

The etiology of acute diarrhea is divided into four causes: bacteria, viruses, parasites, and non-infections (17). The risk factors for diarrhea are divided into three parts, namely, the host (age, gender, immunization status, exclusive breastfeeding, and nutritional status), agent (diarrhea due to viruses, diarrhea due to bacteria, diarrhea due to parasites), environment (environmental sanitation, personal, clean water supply).

Diarrhea can be classified according to: a) duration of diarrhea (acute diarrhea, persistent diarrhea, chronic diarrhea); b pathophysiological mechanisms (osmotic diarrhea and secretory diarrhea); c) infectious causes (infective-non-infective).Gastrointestinal symptoms may include loose stools, stomach cramps, and vomiting. At the same time, the systemic manifestations vary depending on the cause. Patients with watery diarrhea pass stools that contain sodium, chloride, and bicarbonate ions (18). This loss of water and electrolytes increases when vomiting, and water loss also increases when there is heat. It can lead to dehydration, metabolic acidosis, and hypovolemia.

Diarrhea can also cause mild to severe dehydration. Dehydration is the most dangerous condition because it can cause hypovolemia, cardiovascular collapse, and death if untreated properly. Dehydration that occurs according to plasma tonicity can be isotonic, hypertonic, or hypotonic (19). According to the degree of dehydration, it can be without dehydration, mild dehydration, moderate dehydration, or severe dehydration.

Diagnosing diarrhea begins with a history, asking for the patient's identity. It is necessary to ask about the history of the disease to the family or patient, such as the duration of diarrhea, its frequency, volume, color, weight before birth, presence or absence of cough, runny nose, and fever before, during, or after diarrhea. Then they were asked what they did before experiencing diarrhea, such as the type of food they ate, where they ate, and so on. In addition, the patient's habits should also be asked

about, such as eating habits outside the home, washing hands before eating, patient hygiene, and others. For the history of diarrhea in toddlers, it is necessary to ask whether the toddler has eaten food or is still drinking breast milk, made his food for toddlers or bought packaging, whether his immunizations are complete or not, and so on(8).

After that, a physical examination was carried out, namely, a physical examination of the abnormalities was found to be very useful that determine the severity of diarrhea. Volume status is assessed by observing orthostatic changes in blood pressure and pulse, body temperature, and signs of toxicity (7). On abdominal examination, the quality of bowel sounds and the presence or absence of abdominal distension and tenderness are signs of determining the etiology. Additionally, it is no less essential to know the signs of dehydration. The BMI should be measured for patients under five, such as weight, head circumference, and body length (7).

Investigations in patients with diarrhea or severe toxicity or diarrhea that lasts longer than a few days require several investigations. Complete peripheral blood examination (hemoglobin, hematocrit, leukocytes, leukocyte type count), serum electrolyte levels, urea and creatinine, stool examination, and Enzym-Linked Immunosorbent Assay (ELISA) examination is done to detect giardiasis and amebiasis serological tests and abdominal X-rays (20). Patients with viral diarrhea usually have an average leukocyte count and type of lymphocytosis. Patients with bacterial infections, especially those with bacterial infections invasive to the mucosa, have a leukocytosis with excess leukocytes. Urea and creatinine are checked to see if there is a lack of fluid and mineral volume in the body. A stool examination is performedto examine the presence of leukocytes in the stool, which indicates bacterial infection, worm eggs, and adult parasites (21). Patients who have received antibiotic treatment in the previous three months or had diarrhea in the hospital should have their stools examined for Clostridium difficile toxin measurement. Retinoscopy or sigmoidoscopy should be considered in toxic patients, patients with bloody diarrhea, or patients with persistent acute diarrhea. In most patients, sigmoidoscopy may be an adequate as an initial examination.

Research Method

Descriptive survey research is a data processing procedure by describing and scientifically summarizing data to determine the characteristics of knowledge, attitudes, and behavior of mothers who have children under five with diarrheal disease in Cawang sub-district, East Jakarta, in 2017. In descriptive survey research,the research is directed to describe or describe a situation in a community or society.A research population is an object under study. In research, the researchers only take part of the object whose results can represent or cover all the objects studied. The population in this study wasall mothers who hadtoddlers in the Cawang sub-district, East Jakarta totaling 1000 people. The sample is part of the overall object under study, which is considered to represent the entire population. The size of the sample will affect the results obtained, and the sampling method in this study was carried out by probability sampling with a simple random sampling technique. The number of samples was determined using the general sampling formula. This study was conducted in April 2017. The researchers chose the research location in Cawang Village, East Jakarta because the location was closer to their residence. The research instrument used in this study was a questionnaire with a

list of questions created and developed based on the concepts and theories described in the literature review.

The questionnaire wasdivided into four parts. Part A is the respondent's identity, including respondent number, age, last education, and profession, and part B contains statements regarding the respondent's knowledge about diarrhea in the form of definitions, causes, signs, and symptoms, and how to prevent diarrhea. Part C contains statements about the respondent's attitude in dealing with diarrhea. Part D contains statements about the respondent's behavior when diarrhea occurs in their toddlers. Answers that match the respondent's data are answered by circled or crossed. The data collection method was conducted through several stages: the questionnaire testing stage, validity and reliability, and the questionnaire distribution stage. In this study, respondents were explained how to fill out the questionnaire and were encouraged to ask if something was not understood. The completed questionnaires were collected, and when the questionnaires were complete, the researcher ended the meeting with the respondents. Data areprocessed through editing, coding, data entry, cleaning, and tabulation. Data analysis is to be carried out in the form of univariate analysis or descriptive analysis. This univariate analysis aimedto describe the characteristics of the research variables. The variables in this study were age, education level, type of work, the level of knowledge, attitudes, and behavior.

Result and Discussion

Table 1. Characteristics of Respondents Based on Maternal Age

Variable	Mean	Median	Mode	Min-Max
Age	29,24	29,00	25	16-44

Based on the table above, the mean and median of the respondents in this study were 29.24 and 29.00. The maximum age is 25 years. The youngest is 16 years old, and the oldest is 44.

Table 2. Characteristics of Respondents Based on Mother's Occupation

Mother's Profession	Frequency	%
Does not work	43	43,0
Entrepreneur	32	32,0
Teacher	9	9,0
Civil Servant/Indonesian National Army/Police	9	9,0
Private employees	4	4,0
Laborer	3	3,0
Total	**100**	**100,0**

Based on the table above, 43 mothers do not work (43.0%), 32 entrepreneurs (32.0%), 9 teachers (9.0%), 9 civil servants/TNI/police (9.0%), private employees as many as 4 people (4.0%), and labors as many as 3 people (3.0%).

Table 3. Characteristics of Respondents Based on Father's Occupation

Fathers' Profession	Frequency	%
Entrepreneur	16	16,0

Teacher	50	50,0
Civil Servant/Indonesian National Army/Police	23	23,0
Private employees	10	10,0
Laborer	1	1,0
Total	**100**	**100,0**

Based on the table above, 16 fathers work as entrepreneurs (16.0%), 50 teachers (50.0%), civil servants/TNI/police as many as 23 people (23.0%), and private employees as many as ten people (10.0%), and one person (1.0%).

Table 4. Characteristics of Respondents Based on Mother's Education

Mothers' Education	Frequency	%
Primary School	16	16,0
Junior High School	30	30,0
Senior High School	35	35,0
Bachelor	19	19,0
Total	**100**	**100,0**

Based on the table above, it was found that the mother's education was 16 people (16.0%) elementary school graduates, 30 junior high school graduates (30.0%), 35 high school graduates (35.0%), and bachelor graduates as many as 19 people (19.0%).

Table 5. Characteristics of Respondents Based on Father's Education

Pendidikan Ibu	Frequency	%
Primary School	9	9,0
Junior High School	32	32,0
Senior High School	49	49,0
Bachelor	10	10,0
Total	**100**	**100,0**

Based on the table above, the father's education was obtained; namely, nine people graduated from elementary school (9.0%), 32 people graduated from junior high school (32.0%), 49 people graduated from high school (49.0%), and graduated from college as many as ten people (10.0%).

Table 6. Description of Mothers' Knowledge Levels of Diarrhea in Cawang Village, East Jakarta in 2017

Knowledge Level	Frequency	%
Good	28	28,0%
Moderate	41	41,0%
Poor	31	31,0%
Total	**100**	**100,0**

Based on the table above, respondents who have good knowledge are 28 people (28.0%), sufficient knowledge is 41 people (41.0%), and insufficient knowledge is 31 people (31.0%).

Table 7. Description of Mothers' Attitudes towards Diarrhea in Cawang Village, East Jakarta in 2017

Attitude	Frequency	%
Positive	43	43,0

Negative	57	57,0
Total	**100**	**100,0**

Based on the table above, the respondents with a positive attitude are 43 people (43.0%), and a negative attitude is 57 people (57.0%).

Table 8. Overview of Maternal Practices Against Diarrhea in Cawang Village, East Jakarta in 2017

Implementation	Frequency	%
Good	14	14,0
Moderate	56	56,0
Poor	30	30,0
Total	**100**	**100,0**

Based on the table above, respondents who have good practice are 14 people (14.0%), 56 people who practice enough (56.0%), and low practice, 30 people (30.0%).

Table 9. Relationship between Knowledge Level and Mother's Practice on Diarrhea in Cawang Village, East Jakarta in 2017

			Praktek			Total	P- Value
			Good	Moderate	Poor		
Knowledge Level	Good	Count	14	13	1	28	0,000
		% of Total	14,0%	13,0%	1,0%	28,0%	
	Moderate	Count	0	41	0	41	
		% of Total	0,0%	41,0%	0,0%	41,0%	
	Poor	Count	0	2	29	31	
		% of Total	0,0%	2,0%	29,0%	31,0%	
Total		Count	14	56	30	100	
		% of Total	14,0%	56,0%	30,0%	100,0%	

Based on the table above, it was found that there were 14 respondents (14.0%) who had good knowledge with good practice, 13 people (13.0%) were sufficient, and one person less (1.0). Respondents who have sufficient knowledge with good practice are 41 people (41.0%). Respondents with low knowledge with good practice are two people, and 29 people practice less (29.0%). This study also used the Chi-Square test. The results obtained p - value = 0.000. It shows a significant relationship between the level of knowledge and the practice of mothers on diarrheal diseases in Cawang Village, East Jakarta, in 2017.

Age affects the perception and mindset of a person. The older they get, the more their catching power and mindset will develop, so the knowledge they get is getting better. Age is also one of the factors that influence health behavior. In middle age, individuals will play a more active role in society and social life and make more preparations for successful efforts in adapting to old age. Intellectual, problem-solving, and verbal abilities have almost no decline at this age (22). In this study, the average age of the respondents was 29 years, and the most common age was 25 years. It means that the respondents in this study have a pretty good grasp and mindset when viewed from their age.

In this study, most mothers and fathers studied until they finished high school. Education is how a person develops abilities, attitudes, and other behaviors in the

community (23). Education affects the learning process. The higher a person's education, the easier it is for them to receive information. With higher education, a person will tend to get information from other people and the mass media. Education is also an element of personal characteristics often associated with a person's health status or society. The higher a person's education, the easier it will be to absorb information in the health sector. The more information entered, the more knowledge was gained about health. Knowledge is very closely related to the education of a person with high formal education, who will usually have a higher level of knowledge compared to someone with a lower level of education. However, it should be emphasized that a person with low education does not mean meager knowledge(24).

The environment is everything around the individual, both the physical, biological, and social environment, such as the work environment. Characteristics of a person's job can reflect income, social status, education, socioeconomic status, risk of injury, or health problems in a population group. Most of the mothers in this study were housewives, and most fathers worked as teachers. The environment affects the process of entering knowledge into individuals in that environment (25). It can occur because of a reciprocal interaction or not, which will be responded to as knowledge ofeach individual.

Based on the results of the study, it was found that most of the mothers had sufficient knowledge about diarrhea. It can be influenced by many factors, such as age and education. Moreover, most of the respondents in this study had a negative attitude towards the diarrheal disease. The factors that influence attitudes are personal experience, the influence of others considered necessary, the influence of the mass media, educational institutions, and cultural influences (26). Aryani's research in 2009 stated that the level of knowledge also affects his attitude (27). In this study, the practice of mothers with toddlers against diarrheal disease is quite good. Action or practice is a person's concrete response or reaction to a stimulus or object. There are four causes of a person's health behavior or not health behavior, namely: 1) Thoughts and feelings in the form of knowledge, perceptions, attitudes, beliefs, and one's assessment of health; 2) Health behavior of others who become role models tend to be imitated; 3) Resources that include health facilities, money, time, energy, distance to health facilities will have a positive or negative effect on a person's behavior; 4) Culture that is formed in the long term as a result of community life together, will change either quickly or slowly according to the dynamics of society (28).Based on the Chi-Square test, the p-value = 0.000 was obtained. This shows a significant relationship between the level of knowledge and the practice of mothers on diarrheal diseases in Cawang Village, East Jakarta, in 2017.

Conclusion

Based on the results of the research and discussion, the conclusions from the research results can be explained as follows: a) most of the respondents in this study have a sufficient level of knowledge about diarrheal diseases; b) most of the respondents in this study had a negative attitude towards diarrheal disease; c) respondents with a sufficient level of knowledge also have good practice against dare disease and d) based on the Chi-Square test, there is a significant relationship between the level of knowledge and the practice of mothers in Cawang Village on disease because the probability value (p-value) <0.05. For this reason, researchers who want to conduct research like this should have more communication skills. This makes it easier

to convey the intent and purpose of the questionnaire questions. Moreover, mothers also easier to understand the questions asked by researchers. In addition, mothers are expected to be more active in seeking information about their children diarrhea from various sources.

References

[1] Recha, Charles W., and Winfred Mbinya Manetu. "Diarrhea disease among children under five years of age: a global systematic review." (2021).

[2] Medgyesi, Danielle, Daniel Sewell, Reid Senesac, Oliver Cumming, Jane Mumma, and Kelly K. Baker. "The landscape of enteric pathogen exposure of young children in public domains of low-income, urban Kenya: The influence of exposure pathway and spatial range of play on multi-pathogen exposure risks." *PLoS neglected tropical diseases* 13, no. 3 (2019): e0007292.

[3] Semba, Richard D., Klaus Kraemer, Kai Sun, Saskia De Pee, Nasima Akhter, Regina Moench-Pfanner, Jee Hyun Rah, Ashley A. Campbell, Jane Badham, and Martin W. Bloem. "Relationship of the presence of a household improved latrine with diarrhea and under-five child mortality in Indonesia." *The American journal of tropical medicine and hygiene* 84, no. 3 (2011): 443.

[4] Workie, Hailemariam Mekonnen, Abdilahi Sharifnur Sharifabdilahi, and Esubalew Muchie Addis. "Mothers' knowledge, attitude and practice towards the prevention and home-based management of diarrheal disease among under-five children in Diredawa, Eastern Ethiopia, 2016: a cross-sectional study." *BMC pediatrics* 18, no. 1 (2018): 1-9.

[5] Tulchinsky, Theodore H., and Elena A. Varavikova. "Communicable Diseases." *The New Public Health* (2014): 149.

[6] Gamage, Shantini D., S. M. Kravolic, and G. Roselle. "Emerging infectious diseases: concepts in preparing for and responding to the next microbial threat." *Koenig and Schultz's disaster medicine: Comprehensive principles and practices* (2009): 75-102.

[7] Chen, F. J., Steven Dirven, W. L. Xu, and X. N. Li. "Soft actuator mimicking human esophageal peristalsis for a swallowing robot." *IEEE/ASME Transactions on Mechatronics* 19, no. 4 (2013): 1300-1308.

[8] Goyal, Raj K., and Hiroshi Mashimo. "Physiology of oral, pharyngeal, and esophageal motility." *GI Motility online* (2006).

[9] Schneeman, Barbara Olds, and Daniel Gallaher. "Effects of dietary fiber on digestive enzyme activity and bile acids in the small intestine." *Proceedings of the Society for Experimental Biology and Medicine* 180, no. 3 (1985): 409-414.

[10] Sayegh, Ayman I. "The role of cholecystokinin receptors in the short-term control of food intake." *Progress in molecular biology and translational science* 114 (2013): 277-316.

[11] Sawicka, Barbara, and Purshottam Das Gupta. "Resistant starch in the potato." *Acta Scientiarum Polonorum Agricultura* 17, no. 3 (2018): 153-169.

[12] Franck, A. P., R. O. Ramirez, and R. J. Sokol. "Medical and nutritional management of cholestasis." *Liver Disease in Children. Philadelphia: Lippincott, Williams & Wilkins* (2001): 195-238.

[13] Godswill, Awuchi Godswill, Igwe Victory Somtochukwu, Amagwula O. Ikechukwu, and Echeta Chinelo Kate. "Health benefits of micronutrients (vitamins

and minerals) and their associated deficiency diseases: A systematic review." *International Journal of Food Sciences* 3, no. 1 (2020): 1-32.
[14] Levin, Michael. "Anatomy and physiology of anorectum: the hypothesis of fecal retention, and defecation." *Pelviperineology* 40, no. 1 (2021): 50.
[15] Aigner, Felix, Hannes Gruber, Friedrich Conrad, Jasmin Eder, Thilo Wedel, Bettina Zelger, Victoria Engelhardt, et al. "Revised morphology and hemodynamics of the anorectal vascular plexus: impact on the course of hemorrhoidal disease." *International journal of colorectal disease* 24, no. 1 (2009): 105-113.
[16] Sibarani, Abraham Talent Bawadi, Hesti Triwahyu Hutami, Nani Maharani, and Yora Nindita. "Antidiarrheal Effect of Lime Peel Extract on Bisacodyl-Induced Mice." *Diponegoro Medical Journal (Jurnal Kedokteran Diponegoro)* 10, no. 6 (2021): 438-444.
[17] Brintz, Ben J., Joel I. Howard, Benjamin Haaland, James A. Platts-Mills, Tom Greene, Adam C. Levine, Eric J. Nelson, Andrew T. Pavia, Karen L. Kotloff, and Daniel T. Leung. "Clinical predictors for etiology of acute diarrhea in children in resource-limited settings." *PLoS neglected tropical diseases* 14, no. 10 (2020): e0008677.
[18] Alam, Nure H., and Hasan Ashraf. "Treatment of infectious diarrhea in children." *Pediatric Drugs* 5, no. 3 (2003): 151-165.
[19] Rowlands, David S., Brigitte Hani Kopetschny, and Claire E. Badenhorst. "The Hydrating Effects of Hypertonic, Isotonic and Hypotonic Sports Drinks and Waters on Central Hydration During Continuous Exercise: A Systematic Meta-Analysis and Perspective." *Sports Medicine* (2021): 1-27.
[20] Wiedmeyer, Charles E., Dawn Ruben, and Craig Franklin. "Complete blood count, clinical chemistry, and serology profile using a single tube of whole blood from mice." *Journal of the American Association for Laboratory Animal Science* 46, no. 2 (2007): 59-64.
[21] Hegazi, Moustafa Abdelaal, Tabarek Ahmed Patel, and Basem Salama El-Deek. "Prevalence and characters of Entamoeba histolytica infection in Saudi infants and children admitted with diarrhea at two main hospitals at South Jeddah: a serious re-emerging infection with unusual presentation." *The Brazilian Journal of Infectious Diseases* 17, no. 1 (2013): 32-40.
[22] Chen, Xi, Christopher Hertzog, and Denise C. Park. "Cognitive predictors of everyday problem solving across the lifespan." *Gerontology* 63, no. 4 (2017): 372-384.
[23] Heimlich, Joe E., and Nicole M. Ardoin. "Understanding behavior to understand behavior change: A literature review." *Environmental education research* 14, no. 3 (2008): 215-237.
[24] Hirst, Paul H. "Liberal education and the nature of knowledge." In *Philosophical analysis and education*, pp. 76-93. Routledge, 2010.
[25] Horton, Alice A., Alexander Walton, David J. Spurgeon, Elma Lahive, and Claus Svendsen. "Microplastics in freshwater and terrestrial environments: evaluating the current understanding to identify the knowledge gaps and future research priorities." *Science of the total environment* 586 (2017): 127-141.
[26] The story Mary, Dianne Neumark-Sztainer, and Simone French. "Individual and environmental influences on adolescent eating behaviors." *Journal of the American Dietetic Association* 102, no. 3 (2002): S40-S51.

[27] Aryani, Puspita Ayu, Margono Margono, and Munica Rita Hernayanti. "Tingkat pengetahuan, sikap, dan keterampilan ibu dalam penanganan awal diare pada balita." *Jurnal Kesehatan Ibu dan Anak* 8, no. 2 (2015).
[28] Mcnutt, L.A., Carlson, B.E., Persaud, M. and Postmus, J., 2002. Cumulative abuse experiences, physical health, and health behaviors. *Annals of epidemiology*, *12*(2), pp.123-130.