
**THE RELATIONSHIP BETWEEN MATERNAL BEHAVIOR
(KNOWLEDGE, ATTITUDE, ACTIONS) ON THE CARE OF BABY
BOTTLES AND INCIDENCE OF DIARRHEA IN TODDLERS AT
BALOI PERMAI PUBLIC HEALTH CENTER, BATAM CITY, IN 2024**

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Abstract

Diarrhea is the disease with the second highest mortality rate in the world, especially in children under five, more than 1,200 children under five die every day or around 444,000 children per year. Based on the results of the Batam City Health Office presurvey, the Baloi Permai Health Center has the most diarrhea among children under five with a total of 389 in 2023. This study aims to determine the relationship between maternal behavior (knowledge, attitude, action) about how to care for milk bottles and the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City. The design of this study uses a quantitative approach with a cross sectional approach. The research sample includes mothers who have toddlers. The number of samples in this study was 79 mothers with purposive sampling techniques. The location of the research was carried out at the Baloi Permai Health Center which was carried out in July 2024. The data collection tool used a questionnaire (knowledge, attitudes, actions) about how to care for milk bottles with the incidence of diarrhea in toddlers. Data analysis using the chi-square statistical test. The results of the study were that most mothers had behaviors about bottle care in the poor category (60.8% knowledge, 57.0% attitude, and 64.6% action). The results of the study showed that there was a significant relationship between the knowledge, attitude, and actions of mothers who calmed down how to care for milk bottles with the incidence of diarrhea in toddlers with a p-value of 0.000, so it can be concluded that maternal behavior (knowledge, attitude, action) about how to care for milk bottles has a significant influence on the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City.

Keywords: Maternal Behavior, Baby Bottle Care, Diarrhea in Toddlers

HUBUNGAN PERILAKU IBU (PENGETAHUAN, SIKAP, TINDAKAN) TENTANG CARA PERAWATAN BOTOL SUSU DENGAN KEJADIAN DIARE PADA BALITA DI PUSKESMAS BALOI PERMAI KOTA BATAM TAHUN 2023

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Abstrak

Diare merupakan penyakit dengan angka kematian kedua tertinggi di dunia terutama pada anak balita, lebih dari 1.200 balita meninggal setiap hari atau sekitar 444.000 anak per tahun. Berdasarkan hasil presurvey Dinas Kesehatan Kota Batam, bahwa di Puskesmas Baloi Permai diare pada balita terbanyak dengan jumlah 389 pada tahun 2023. Penelitian ini bertujuan mengetahui hubungan antara perilaku ibu (pengetahuan, sikap, tindakan) tentang cara perawatan botol susu dengan kejadian diare pada balita di Puskesmas Baloi Permai, Kota Batam. Desain penelitian ini menggunakan kuantitatif dengan pendekatan cross sectional. Sampel penelitian meliputi ibu yang memiliki balita. Jumlah sampel pada penelitian ini adalah 79 ibu dengan teknik purposive sampling. Lokasi penelitian dilakukan di Puskesmas Baloi Permai yang dilakukan pada bulan Juli tahun 2024. Alat pengumpulan data menggunakan kuesioner (pengetahuan, sikap, tindakan) tentang cara perawatan botol susu dengan kejadian diare pada balita. Analisa data menggunakan uji statistik chi-square. Hasil penelitian sebagian besar ibu memiliki perilaku tentang perawatan botol susu dalam kategori kurang (pengetahuan 60,8%, Sikap 57,0%, dan tindakan 64,6%). Hasil penelitian menunjukkan adanya hubungan yang signifikan antara pengetahuan, sikap, dan tindakan ibu tentang cara perawatan botol susu dengan kejadian diare pada balita dengan p-value 0,000, sehingga dapat disimpulkan bahwa perilaku ibu (pengetahuan, sikap, tindakan) tentang cara perawatan botol susu memiliki pengaruh signifikan dengan kejadian diare pada balita di Puskesmas Baloi Permai Kota Batam.

Kata Kunci: Perilaku Ibu, Perawatan Botol Susu, Diare Pada Balita

INTRODUCTION

Diarrhea is a condition in which a person has loose or liquid bowel movements (FEC) with a soft or liquid consistency, even in the form of water alone and the frequency is more frequent (usually 3 times or more) in one day. Diarrheal disease is the disease with the second highest mortality rate in the world, especially in children under five (Ayu, 2016).

According to *the World Health Organization* (2024), diarrhea is the third cause of death in children under five years old. The disease can be prevented and treated. Every year diarrhea kills about 443,832 children under 5 years old. Most diarrhoeal diseases can be prevented through safe drinking water and adequate sanitation and hygiene. Globally, there are nearly 1.7 billion cases of diarrheal disease in children every year.

UNICEF (*United Nations Children's Fund*) Diarrhea is still the leading killer of children, even though treatment solutions are available. Diarrhea accounted for about 9% of all under-5 deaths worldwide in 2021. This means that more than 1,200 young children die every day, or about 444,000 children per year, despite the availability of simple health services. The highest deaths from diarrhea in children under 5 years of age occurred in South Asia and Sub-Saharan Africa Percentage of deaths due to diarrhea in children under 5 years in 2019. Although the death toll is enormous, progress has been made. From 2000 to 2021, the total number of annual deaths due to diarrhea in children under 5 years of age decreased by 63% (Unicef, 2024).

Based on the results of a preliminary study conducted at the Baloi Permai Health Center, Batam City, from 10 respondents interviewed,

there were 8 mothers who had toddlers washing milk bottles without using a brush to clean or brush bottles. There were 6 mothers who did not rinse bottles using running water. There are 7 mothers who do not soak bottles in boiling hot water. There were 6 mothers who did not dry the bottle by reversing the position of the milk bottle. There are 5 mothers who store milk bottles in a clean, dry and cool place. Based on the description of the background above, the author intends to conduct research with the topic, research "The Relationship between Maternal Behavior (Knowledge, Attitude, Action) on How to Care for Milk Bottles and the Incidence of Toddler Diarrhea at the Baloi Permai Health Center in 2024".

RESEARCH MATERIALS AND METHODS

The research design used is Quantitative with the approach *cross sectional*. The data of this study was collected by interviews using questionnaires and observation sheets. The population in this study is mothers who have toddlers at the Baloi Permai Health Center. Samples were taken using the *Purposive Sampling* By using as many as 79 respondents as a research sample. Data analysis using tests *Chi-square*

RESEARCH RESULTS AND DISCUSSION

A. Univariate Analysis

The results of the study entitled "The Relationship between Maternal Behavior (Knowledge, Attitude, Action) on How to Care for Milk Bottles and the Incidence of Diarrhea in Toddlers at the Baloi Permai Health Center, Batam City in 2024" obtained data on the frequency distribution of respondents as follows:

1. Frequency Distribution of Mother's Knowledge About How to Care for Bottles

Table 1. Mother's Knowledge of How to Care for Bottles

Knowledge	Frequency (f)	Percentage (%)
Good	17	21.5
Enough	14	17.7
Less	48	60.8
Total	79	100

The results of this study show that there are still many mothers in the Baloi Permai Batam City working area health center who do not fully understand the importance of keeping milk bottles clean and the right way to take care of them. Knowledge is a result of curiosity through sensory processes, especially in the eyes and ears towards certain objects. Knowledge is an important domain in the formation of open behavior (Donsu, 2017).

In this study, most of the respondents had knowledge about how to care for milk bottles which tended to be lacking, based on the results of the analysis of the knowledge questionnaire that had been filled in, most of the respondents answered no to the selection of milk bottles that need to be avoided, namely pacifier materials made of glass and many pictures (65.8% answered no), Bottles that are still wet and left in closed places can become germs (67.1% answered no), and How to dry a milk bottle using a tissue or cloth (62% answered no). According to the researcher's assumption, this can happen because education to the respondents is still lacking and may also be caused by the respondent's level of education, as it is known in this study that most of the respondents' educational history is at the elementary and high school levels. The higher a

person's education level, the easier it is for respondents to receive, absorb and understand information. The higher the education of the respondents, it is hoped that the more insight they have so that their knowledge will also increase. Knowledge is closely related to education where it is expected that the higher the education, the more knowledge and insight they have.

This is in line with research conducted by Sudarwati, Sudarwati (2019) regarding the Relationship between the Level of Mother's Knowledge About Diarrhea and the Occurrence of Diarrhea at the Kasun II Toddler Posyandu, Banyukambang Village, Wonoasri Madiun Health Center Working Area. In the study, it was explained that the higher a person's education, the easier it is for the person to receive information. A person who has a high level of education will have good knowledge. In terms of knowledge, a young person does not have much knowledge about something, including diseases, because at this age a person tends to pursue a career and does not pay attention to other things (Sudarwati et al., 2019).

2. Frequency Distribution of Mother's Attitude About How to Care for Bottles

Table 2. Mother's Attitude About How to Care for a Milk Bottle

Attitude	Frequency (f)	Percentage (%)
Good	24	30.4
Enough	10	12.7
Less	45	57.0
Total	79	100

Based on research that has been conducted regarding mothers' attitudes about how to care for milk bottles at the Baloi Permai Health Center in Batam City, it was found that more than half of mothers have attitudes

related to how to care for milk bottles with good criteria of 24 (30.4%), sufficient criteria of 10 (12.7)% and less criteria of 45 (57.0%). This research is in line with that conducted by Dunna Izafira (2023), in her research obtained the attitude of mothers on how to care for milk bottles with a poor attitude level of 10 respondents, a sufficient attitude level of 48 respondents and a respondent with a good attitude level of 26 respondents.

This research is also in line with what was conducted by Batubara (2018) in Huta Lombang village and Pijorkoling village, Padangsidempuan Southeast district about the relationship between milk bottle hygiene and the behavior of mothers who have babies and toddlers aged 6-1 years with the incidence of diarrhea found the opposite. The study noted that the majority of 29 (64.4%) respondents had a poor attitude about bottle hygiene in infants and toddlers aged 6 months to 2 years.

In this study, it was found that the attitude of mothers in this study is still lacking related to the care of milk bottles, based on the results of the analysis of the attitude questionnaire that has been filled out, most of the respondents answered that they did not know, disagreed, and strongly disagreed with the item Drying the child's milk bottle must use tissue or cloth (as many as 32.9% answered did not know and 32.9% answered disapproving), Putting a baby bottle before using it must be soaked in warm water for 15 minutes (as many as 41.8% answered not agree and 21.5% answered they did not know), keep dirty milk bottles away from toddlers (as many as 46.8% answered they disagree and 24.1% answered they do not know), and Using a bottle that does

not have many pictures (as many as 48.1% answered not to agree and 12.7% answered strongly disagree). According to researchers, this is likely due to a lack of knowledge, experience and a sense of responsibility for mothers in bottle care. According to the data from filling out the questionnaire, the researcher highlighted the attitude of mothers towards bottle care where most mothers do not dry the bottle using a tissue or cloth, do not keep dirty bottles away from toddlers, and most do not take toddlers to the health center when the bowel movements are liquid more than 4x. This indication is what makes most mothers have a lack of attitude towards bottle care.

Attitude is a way of thinking and feeling about someone or something. Attitude is also meant as the way we behave with someone or something that reflects how someone thinks and feels. Attitude is a statement or assessment about an object, person, and event. Attitude describes how a person feels about something (Simarmata et al., 2021).

The formation of attitudes is influenced by two factors, namely the internal factors of the individual, including personality, intelligence, skills, interests, emotions, and needs and motivations, and external factors including environmental, educational, ideological, economic, and political factors. In addition, the formation of attitudes is also influenced by various factors, including personal experiences, other people's cultures, mass media, educational and religious institutions, and individual emotions (Notoatmodjo, 2014).

The results of this study show that most mothers at the Baloi Permai Health Center in Batam City in 2024 have a poor attitude in terms of baby

bottle care. The highest percentage (57.0%) shows that there are still many mothers who have not shown the right attitude to care for milk bottles. This is a serious concern because the cleanliness of the milk bottle is very important to prevent babies from various diseases, especially gastrointestinal infections.

3. Distribution of Frequency of Mother's Actions on How to Care for Bottles

Table 3. Mother's Actions on How to Care for Bottles

Action	Frequency (f)	Percentage (%)
Good	19	24.1
Enough	9	11.4
Less	51	64.5
Total	79	100

Based on the research that has been conducted related to mothers' actions on how to care for milk bottles at the Baloi Permai Health Center, Batam City, it was found that mothers' actions on how to care for milk bottles with good criteria were obtained by 19 (24.1%) respondents, with sufficient criteria as many as 9 (11.4%) respondents, and respondents with insufficient criteria as many as 51 (64.6%) respondents. This research is in line with what was conducted by Yogantari (2019), in the study obtained maternal actions on how to care for milk bottles with a low attitude level of 75.2% of respondents, a sufficient action level of 18.0% of respondents and a good attitude level of 6.8% of respondents.

The results of this study show that as many as 64.6% of mothers carry out milk bottle maintenance actions in the lack category. This shows that most mothers in the region have not fully understood or implemented the correct and hygienic way of caring for milk

bottles. Only 24.1% carried out milk bottle care in the good category. This means that only a small percentage of mothers really understand and apply all the recommended bottle care steps. Mother's behavior in how to care for milk bottles is all actions taken by mothers in maintaining the cleanliness and sterility of milk bottles.

Based on the results of the analysis of the action questionnaire that has been filled out, most of the respondents found their actions on the way to care for milk bottles that are categorized as lacking by answering "No" on the item "I dry my child's milk bottle using a clean tissue or cloth (64.6% answered no), I always choose a milk bottle that does not have many pictures for my child (70.0% answered no), and I always keep my child's unwashed bottle away (69.6% answered no)". According to the researcher, this may be due to the lack of knowledge from respondents about milk bottle care, which is found to be as many as 48 respondents have less knowledge about how to care for milk bottles. Mother's knowledge can influence the actions to be taken. Similarly, in bottle care, mothers who have good knowledge about the importance of bottle care tend to be more consistent in implementing good care practices and vice versa, mothers who have less knowledge about how to care for milk bottles tend to be worse at implementing good bottle care.

Knowledge which is a *predisposing* factor is not the only factor that affects actions, but is still influenced by *reinforcing* and *enabling* factors, but good knowledge encourages a person to take good actions. In line with the research of Megasari (2011) which says that actions are influenced by a person's knowledge. Good diarrhea prevention

behavior is influenced by good knowledge.

4. Distribution of Frequency of Diarrhea Incidence in Toddlers at the Baloi Permai Health Center, Batam City in 2024

Table 4. Incidence of Diarrhea

Criterion	Frequency (f)	Percentage (%)
Diarrhea	44	55.7
No diarrhea	35	44.3
Total	79	100

Based on research that has been conducted related to the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City, it was found that as many as 44 toddlers (55.7%) experienced diarrhea, and 35 toddlers (44.3%) did not experience diarrhea. This research is in line with that conducted by Maya Sartika (2019), in her study as many as 49 toddlers experienced diarrhea, and only 16 toddlers did not experience diarrhea.

The results of this study show that the incidence of diarrhea at the Baloi Permai Health Center, Batam City is relatively high. As many as 55.7% of the total sample experienced diarrhea. This figure shows that the incidence of diarrhea in toddlers in the region is still quite high.

According to the researcher, this is likely to happen because most of the respondents have a lack of behavioral category levels in bottle care, ranging from knowledge, attitudes, and actions of mothers in bottle care. This triggers a chain effect including digestive system disorders in toddlers because Inadequate care of milk bottles, such as not washing or sterilizing bottles properly, can lead to the growth of pathogenic microbes. Contaminated bottles can be a source of infection for

toddlers, whose immune systems are still not fully mature, making them more susceptible to infection.

According to Widoyono, Prevention of diarrhea can be done by avoiding factors that cause diarrhea, such as behaving a clean and healthy life, washing hands with soap, giving exclusive breastfeeding to children until the age of 2 so that children have strong immunity (Widoyono, 2019).

This is supported by research conducted by Lanida & Farapti (2018), in their research found that the technique of keeping milk bottles clean can prevent the occurrence of diarrhea in babies. There was a significant relationship between handwashing techniques with soap and the incidence of diarrhea in infants ($p=0.03$). These results show the importance of milk foam hygiene in preventing diarrhea.

B. Bivariate Analysis

1. The Relationship of Mother's Knowledge About How to Care for Milk Bottles with the Incidence of Diarrhea in Toddlers at the Baloi Permai Health Center, Batam City in 2024

Table 5. The Relationship Between Mother's Knowledge About How to Care for Bottles and the Incidence of Diarrhea

Knowledge	Incidence of Diarrhea				Total	P-value
	Yes		Not			
	n	%	n	%		
Good	0	0.0	17	100	17	100
Enough	8	57.1	6	42.9	14	100
Less	36	75.0	12	25.0	48	100
Total	44		35		79	100

The results of the statistical test using the *Chi-Square* test obtained a *pvalue* = 0.000 which means a *p* value < 0.05 which means H_0 is rejected and H_a is accepted which means there is a relationship between the mother's knowledge and the incidence of diarrhea in toddlers at the Baloi Permai Health Center in Batam City in 2024.

This research is in line with what was conducted by (I Gede Krisna, 2021). His research shows that there is a significant relationship between Knowledge and Maternal Behavior Regarding Bottle Hygiene. This relationship is shown by the correlation strength ($r = 0.533$) which is included in the medium category (0.41 – 0.60) with a positive correlation direction (+) which means that the higher the knowledge, the better the Mother's Behavior about Milk Bottle Hygiene, and vice versa, the lower the knowledge, the worse the Mother's Behavior about Milk Bottle Hygiene in Toddlers in the Working Area of Puskesmas II West Denpasar. Then this research is also in line with the research of Novitasari (2017), which states that the better the mother's knowledge about diarrhea, the better

the mother's behavior in preventing diarrhea.

According to the researchers, the incidence of diarrhea in toddlers in this study may be caused by the mother's lack of knowledge about how to care for milk bottles. Because knowledge will determine behavior, so if a mother has received the right education about proper bottle care, then the level of knowledge of mothers will improve in bottle care. A person's level of knowledge is influenced by several factors, namely internal factors such as intelligence, interests, and physical conditions as well as external factors such as family and society.

Knowledge or cognition is a very important domain for the formation of one's actions (*overt behavior*). The acceptance of new behavior or the adoption of behavior is based on knowledge, awareness and positive attitudes, then the behavior will be lasting (*long lasting*) (Notoadmojo, 2014).

On the other hand, if the behavior is not based on knowledge and consciousness, it does not last long. So the importance of knowledge

here is that it can be the basis for changing behavior so that behavior lasts. Knowledge as a parameter of social circumstances can greatly determine public health. People can avoid diseases as long as knowledge about health can be improved, so that attitudes and behaviors become healthy.

This is in line with the statement

by Erisa (2014), the action of handling diarrhea at home by mothers can be influenced by the level of knowledge of the mother, the better the mother's knowledge, the better her action towards handling diarrhea, while the mother's knowledge is influenced by the mother's age, mother's education, and mother's work (Erisa, 2014).

2. The Relationship between Mother's Attitude About How to Care for Bottles and the Incidence of Diarrhea in Toddlers at the Baloi Permai Health Center, Batam City in 2024

Table 6. The Relationship between Mother's Attitude About How to Care for a Milk Bottle and the Incidence of Diarrhea

Attitude	Incidence of Diarrhea				Total	P-value
	Yes		Not			
	n	%	n	%		
Good	1	4.2	23	95.8	24	100
Enough	5	50.0	5	50.0	10	100
Less	38	84.4	7	15.6	45	100
Total	44		35		79	100

The results of the statistical test using the *Chi-Square test* were obtained with *pvalue* = 0.000 which means a *p* value < 0.05 which means H_0 is rejected and H_a is accepted, which means that there is a relationship between the mother's attitude and the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City in 2024.

This research is in line with what was conducted by Batubara (2018) in huta lombang village about the relationship between the cleanliness of milk bottles and the behavior of mothers who have babies and toddlers aged 6-1 years with the incidence of diarrhea. The study found that the majority of 64.4% of respondents had a poor attitude about bottle hygiene in infants and toddlers aged 6 months to 2 years. The attitude of mothers in the

study is still lacking related to the hygiene of milk bottles, this is likely due to the lack of experience and sense of responsibility of mothers in caring for milk bottles.

The hygiene of milk bottles is said to be good if the respondents do 5 things in washing milk bottles, namely, first, separating the bottles, pacifiers, and bottle caps and washing them with soapy water, second, using a special brush to clean the milk bottles, pacifiers and bottle caps, thirdly brushing the bottom of the bottle and the neck of the bottle, fourthly rinsing the bottles until they are completely clean using clean running water, and the fifth boiling a bottle in warm water (Harris, et al. 2017).

According to the researcher, in this study, most of the mothers' attitudes towards bottle care are

relatively lacking. Based on the results of filling out an attitude questionnaire, most mothers do not soak their milk bottles in warm water for 15 minutes. A person's attitude is directly proportional to behavior, if a person has a positive attitude, they will tend to pay attention to the care of the milk bottle that will be given to their baby as an effort to prevent diarrhea in their toddlers.

In line with Septianingtyas, Aggorowati, and Nurrahima (2018), sterilizing milk bottles by boiling takes approximately 15 minutes. Regulation of the Minister of Health of the Republic of Indonesia, No. 39 (2013) states that the standard operating procedure for sterilizing milk bottles by boiling them is by boiling them for

5-10 minutes.

According to research by Debora, et al. (2024) that the mother's attitude will determine behavior, so that if a mother who has a good attitude will tend to pay attention to the cleanliness of the milk bottle that will be given to her baby so that as an effort to prevent diarrhea, on the other hand, mothers who have a less attitude are less likely not to pay attention to the cleanliness of the baby bottle. Where the hygiene of the milk bottle needs to be considered for a mother to maintain the health of her baby, the use of milk bottles needs to be considered because it is very susceptible to bacterial contamination and other things that are influenced by the mother's attitude which is a risk factor for diarrhea.

3. The Relationship between Mother's Actions on How to Care for Milk Bottles and the Incidence of Diarrhea in Toddlers at the Baloi Permai Health Center, Batam City in 2024

Table 7. The Relationship Between Mother's Actions on How to Care for Milk Bottles and the Incidence of Diarrhea

Action	Incidence of Diarrhea				Total	P-value
	Yes		Not			
	n	%	n	%		
Good	3	15.8	16	84.2	19	100
Enough	5	55.6	4	44.4	9	100
Less	36	70.6	15	29.4	51	100
Total	44		35		79	100

The results of the statistical test using the *Chi-Square* test obtained a *pvalue* = 0.000 which means a *p* value < 0.05 which means H_0 is rejected and H_a is accepted, which means that there is a relationship between the mother's action and the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City in 2024.

This research is in line with what was conducted by Debora Y, et al (2024) regarding Maternal Behavior

Regarding Bottle Hygiene with the Incidence of Diarrhea in Infants Aged 6-24 Months. In the study, it was found that the results of the chi square test obtained a *p* value of 0.000, meaning that there was a relationship between mothers' actions about the hygiene of milk bottles and the incidence of diarrhea in infants aged 6-24 months. This research is also in line with what was carried out by Lanida (2019) based on the results of the chi-square test, an

Asymp value was obtained. Sig = 0.03 which shows that there is a significant relationship between techniques in maintaining the hygiene of milk bottles and efforts to prevent diarrhea. The incidence of diarrhea can be affected by poor practices during preparing bottles, especially hand washing, sterilization, and bottle cleaning, this allows for the occurrence of germ contamination that causes diarrhea.

Behaviors are classified into 2, namely closed behavior and open behavior. (Notoatmodjo, 2014). Mother's behavior in cleaning the milk bottle is included in open behavior, which is a person's response to stimuli in the form of real or open actions. The stimulus response is clear in the form of actions or practices. There are several ways to form behavior that is in accordance with expectations, including by *conditioning*, understanding or by using models.

Diarrhea prevention measures are activities carried out by the baby's mother before she has diarrhea in order to avoid diarrhea, including maternal activities in sterilizing milk bottles, providing clean water, removing feces, breastfeeding, and washing hands. Mother's actions in maintaining the cleanliness of milk bottles are all actions taken by mothers in maintaining the cleanliness and sterility of milk bottles (Mariyana et al., 2023).

According to researchers based on the research that has been conducted, it can be assumed that the incidence of diarrhea in toddlers is mostly caused by the mother's actions that are still lacking in the care of milk bottles. The mother's action in this case is a form of open behavior, where a person's response to stimuli is manifested in real or open actions. Milk bottles that are not clean and

contain bacteria are the main source of diarrhea in toddlers. Given the weak immunity of toddlers, they are very vulnerable to germs and bacteria that are generally harmful to their health.

This is supported by a statement by Yunita Verda (2021), stating that the lack of cleanliness of milk bottles is a significant factor in the appearance of diarrhea in toddlers. Therefore, the importance of increasing maternal knowledge and action in caring for milk bottles is crucial to prevent the occurrence of diarrhea in toddlers. (Yunita Verda, 2021).

CONCLUSION

Based on the results of a study on the relationship between maternal behavior (knowledge, attitude, action) regarding how to care for milk bottles and the incidence of diarrhea in toddlers at the Baloi Permai Health Center, Batam City in 2024, it was found that the majority of mothers have insufficient knowledge (60.8%), attitudes (57.0%), and actions (64.6%) in caring for milk bottles. In addition, 55.7% of toddlers at the Baloi Permai Health Center experienced diarrhea. This study showed a significant relationship between mothers' knowledge, attitudes, and actions and the incidence of diarrhea in toddlers, with a p value of 0.000 ($p < 0.05$), which means that the lower the mother's knowledge, attitude, and actions, the higher the incidence of diarrhea in toddlers.

REKOMENDATION

The results of this study are expected to be used as basic data for future research, especially factors related to the incidence of diarrhea in toddlers.

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