The Correlation Between Knowledge Level with Attitude and Behavior Toward the Diarrhea Self-medication Among Parents of Toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia in 2021

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Abstract. Diarrhea is the second leading cause of death in children aged 5 < years worldwide. Diarrhea is also a potential endemic disease of Extraordinary Events (*Kejadian Luar Biasa*/KLB) followed by mortality in Indonesia. Diarrhea is a disease that can be treated with self-medication. Knowledge affects attitudes and daily health behavior. When the knowledge is not sufficient, it may result in wrong drugs selection and finally therapy failure. Knowledge of diarrhea among mothers of toddlers indicates the ability to understand any information related to diarrhea, whereas parents with low levels of knowledge are twice more prone to a risk of suffering from diarrhea. Parents of toddlers must possess adequate knowledge to perform self-medication for diarrhea in children, therefore self-medication can be carried out accordingly and there are no medication errors. The purpose of this study was to determine the correlation between knowledge, attitudes, and behavior on self-medication of diarrhea among parents of toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia. This research is a cross-sectional study with a sampling technique using accidental sampling. The inclusion criteria in this study were mothers of children aged 5 years, agreed to be respondents, could read and write, had practiced self-medication, and followed research procedures. While the exclusion criteria for this study were parents whose educational or occupational backgrounds were in the health sector. The instrument used is a questionnaire. Data analysis applied the Spearman rank test. The results obtained that parents of children under five in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia had a moderate level of knowledge (73.3%), moderate attitudes (55.6%), and good behavior (73.3%). The level of knowledge implied a correlation to attitudes of 0.596 with a p-value of < 0.05 and the correlation between knowledge and behavior was 0.245 with a p-value of < 0.05. All things considered, there was a correlation between the level of knowledge, attitude, and behavior of self-medication for diarrhea among parents of toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia in 2021.

Keywords: Self-medication · diarrhea · toddler

1 Introduction

World Health Organization (WHO) defines diarrhea as the discharge of three or more liquid stools per day which causes the body to lack water and salt needed for survival. Diarrhea can be prompted by viral, bacterial, or parasitic infections and other causes, such as drugs, functional disorders, and food intolerance [13]. WHO estimates that every year 1.7 billion cases of diarrhea attack children globally. Diarrhea is the second leading cause of death among children aged < years, as a result, 525,000 children under five died annually [26].

In Indonesia, diarrhea is categorized as the potential endemic disease of Extraordinary Events (KLB) with mortality. In 2018, 10 outbreaks of diarrhea spread across 8 provinces and 8 regencies/cities. The number of patients with diarrhea at any age category reached 4,504,524 people. The number of patients under five included 1,637,708 or 40.90% who were treated in health facilities [9].

Diarrhea is a disease that can be treated with self-medication. Knowledge affects attitudes and daily health behavior. If the possessed knowledge is insufficient, it may lead to incorrect drugs selection, therefore therapy failure occurs [16].

According to Notoatmodjo, knowledge can influence the development of one's attitude and action. Based on experience and research, the knowledge that underlies attitudes and behavior will be more permanent. Knowledge of diarrhea among mothers of toddlers shows the ability to understand any information related to diarrhea [15].

When a toddler experiences diarrhea, the mother plays a role in the incident. Toddlers are usually closest to the mother figure so the mother's actions will affect the course of the disease. Knowledge influences whatever actions are taken. One of the risk factors for toddlers suffering from diarrhea is the low level of mother's knowledge. Mothers with a low level of knowledge have two times greater risk of developing diarrhea than those with better level of knowledge [4]. Parents must possess a good level of knowledge so that they can practice self-medication properly and medication errors can be avoided [25].

Previous research conducted by Yeekaji at UIN Maulana Malik Ibrahim Malang found that there was an influence of knowledge level on diarrhea self-medication behavior among freshmen of UIN Maulana Malik Ibrahim Malang in the academic year 2018/2019. The knowledge level of self-medication for diarrhea was "high" with 60.95% and the majority category of self-medication for diarrhea was "good", with a percentage of 45.45%. It was concluded that there was a significant correlation between the knowledge level and behavior of self-medication for diarrhea among freshmen of UIN Maulana Malik Ibrahim Malang in the academic year 2018/2019 [28]. This study entails novelty compared to previous studies. Previous studies investigated the correlation between the knowledge level and behavior of self-medication for diarrhea, while this study examined the correlation of knowledge level, attitudes, and behavior of self-medication for diarrhea. Respondents and sites in the previous research involved students of the State Islamic University of Maulana Malik Ibrahim, while the respondents in this study consisted of parents of toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia. Parangjoro Village is a rural area which is 4 km away from health facilities. It was aggravated by the expensive cost of hospital and clinic checks. Therefore, the majority

prefer to handle health problems by themselves. In Parangjoro Village, four pharmacies are established, facilitating the community to procure medicine for self-medication.

Based on the aforementioned background, the high rate of diarrhea in children, and the knowledge level among parents may affect children's attitudes, behaviour, and health levels; thus, it is necessary to conduct research to determine the correlation between the level of knowledge on attitudes and behavior of self-medication for diarrhea among parents of toddlers in Indonesia. Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia in 2021.

2   Method

2.1   Types of Research

This research is descriptive analytic research in the form of survey using a cross-sectional study. Respondents were distributed a written questionnaire consisting of two parts. The first part contains demographic data of respondents and the second part contains knowledge, attitudes, and behaviors related to diarrhea and self-medication. This research was granted approval from the Ethical Clearance number 3900/B.1/KEPK-FKUMS/XI/2021 from the Health Research Ethics Commission, Faculty of Medicine, Universitas Muhammadiyah Surakarta.

2.2   Research Variable

The variables used in this study consisted of the independent variable (the level of knowledge of parents about diarrhea) and the dependent variable (the attitude and behavior of self-medication for diarrhea by parents).

2.3   Operational Definition

- Knowledge

The ability of the respondents to understand any information about self-medication for diarrhea, either understanding the definition, causes, symptoms, prevention, or treatment. This study applied 23 knowledge questions on the questionnaire. It was measured using the Guttman scale questionnaire. Respondent knowledge is fallen into three categories, namely, good category ($\geq$ 76–100%), moderate category (56–75%), and sufficient category ($\leq$55%) [3].

- Attitude

Attitudes is feeling arising from a person when performing self-medication for diarrhea. In this study, this variable was measured using a Likert scale questionnaire. Respondent attitude is broken down into three categoriess; good category ($\geq$76–100%), moderate category (56–75%), and sufficient category ($\leq$ 55%) [3].

- Behavior

This is defined as actions taken by a person against self-medication for diarrhea. This study was assessed using the Guttman scale questionnaire. Respondent behavior is divided into three categories; good category ($\geq$ 76–100%), moderate category (56–75%), and sufficient category ($\leq$55%) [3].

2.4 Population and Sample

The population involved in this study was parents with children aged 5 years in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia. The total population of toddlers in Parangjoro, Grogol, Sukoharjo is 115 people. The samples used are calculated using the Slovin formula:

$$n = \frac{N}{1 + N(d^2)} \qquad (1)$$

Description:
n: Minimal sample taken from population
N: Population
d: Tolerable sampling error (*sampling error*)

By using the Slovin formula calculation, the minimum number of samples used is:

$$n = \frac{115}{1 + (115.0,05^2)}$$
$$n = 89.32 \text{ orang.}$$

The minimum sample participated in this study was 90 people. Samples were taken using accidental sampling according to the inclusion criteria: mothers of children aged 5 years in Parangjoro, agreed to fill out questionnaires, could read and write, had practiced self-medication, and followed research procedures. Meanwhile, the exclusion criteria for this study were mothers working or having educational backgrounds in the field of Health. This research was conducted on December 20, 2021, in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia.

2.5 Research Instrument Test

2.5.1 Content Validity

Content validity is the validity assessed by a competent panel or expert judgment by referring to the feasibility or relevance of the contents of the questionnaire through rational analysis [29]. This research took in 4 (four) experts to assess the contents of the questionnaire. The experts comprise lecturers from the Faculty of Pharmacy and the Faculty of Medicine, Universitas Muhammadiyah Surakarta. The assessment of the questionnaire by experts implemented 4 Likert scales [18]. CVR (Content Validity Ratio)

and CVI (Content Validity Index) were used to measure content validity. According to Lawsce, the minimum CVR value when using 3 experts is 0.99.

$$CVR: \frac{Ne - \frac{N}{2}}{\frac{N}{2}} \qquad (2)$$

Description:
Ne: Total *expert judgments* who agree
N: Total *expert judgement*

$$CVI = \frac{Total\ of\ CVR}{Total\ questionnaire\ items} \qquad (3)$$

The result of the CVR calculation was 1, meaning means that it exceeds the specified minimum CVR value. The result of CVI calculation was1, therefore it is deemed very good. In conclusion, the questionnaire is valid and can be used as an instrument in this study.

2.5.2 *Validity T*est

Validity test is used to determine whether the items in the questionnaire are valid. In this study, the validity test included 30 respondents. The validity test was analyzed using Pearson's Product Moment SPSS 26 program. If r_{count} is greater than r_{table}, the items in the questionnaire are valid [23].

The knowledge items encompassing 23 questions resulted in the valid outcome. The attitude questionnaire showed that of the 14 items in the attitude questionnaire, every item is declared valid. The behavior questionnaire obtained that 9 questions in the questionnaire are valid. All questions are declared valid since the r value is greater than the r_{table}, which is 0.361.

2.5.3 Reliability Test

Reliability test was conducted to determine the consistency of the instrument as a measuring instrument for it to be trusted. An instrument is declared reliable if the value of the arithmetic reliability test is greater than the value of the table reliability test.

The value of Cronbach's alpha reliability test on every item in the questionnaire is considered reliable because the arithmetic test value > table test value (0.60). The results are; knowledge 0.920, attitude 0.911, and behavior 0.766.

2.6 Data Analysis

The data were analyzed using the Spearman rank test method because the data obtained were not normally distributed. Spearman rank test was used to analyze the correlation between knowledge level, attitude, and behavior of self-medication for diarrhea. The conclusion is based on the calculated r value and the comparison of the significance value. If $r_{count} > r_{table}$ or significance value P-value is < 0.05, then Ho is rejected, which

means there is a significant correlation between the level of knowledge on the attitude and behavior of diarrhea self-medication, and vice versa. The correlation coefficient interpretation is according to Sugiyono, with category: very low (0.00–0.199), low (0.20–0.399), moderate (0.40–0.599), strong (0.60–0.799), very strong (0.80–1.00) [23].

3   Results and Discussion

Demographic data of respondents is essential; to perceive the background description and distribution of the social level of the community in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia, which may affect the level of knowledge, attitude, and behavior of self-medication for diarrhea. Based on the results of the questionnaire, data on the demographic characteristics of the respondents were obtained as follows:

3.1   Characteristics of Respondents

Table 1 displays that the gender of the respondents in the study is 100% female according to the inclusion criteria that had been predetermined, which is mother with children aged 5 years. Mothers tend to practice self-medication, seek information about self-medication, and pay more attention to the health of themselves and their families [24].

From the results of this study in Table 1, the most frequent age was 26–35 years (Table 1). Age can affect the self-medication by the community in making decisions

Table 1. Demographic characteristics of respondents

No	Characteristic	Variable	f	%
1	**Gender**	Female	90	100%
2	**Age**	17–25	32	35.%
		26–35	43	46.%
		36–45	15	16.7%
3	**Education**	Elementary School	7	7.8%
		Junior High School	24	26.7%
		Senior High School	46	51.1%
		Diploma/Bachelor	13	14.4%
4	**Profession**	Merchant	12	13.%
		Government Employees	4	4.4%
		Private Employees	26	28.9%
		Housewife	43	47.8%
		Entrepreneur	5	5.6%
5	**Income**	Regional Minimum Wage < (Rp.2.000.000)	63	70%
		Regional Minimum Wage ≥ (Rp.2.000.000)	27	30%

about the treatment choice [22]. At mature level, a person has more experience so his understanding increases and is better prepared to face issues. Those older think about the actions taken and their grasp abilities can develop so that self-medication can be carried out properly for children [14].

In Table 1, it is known that the majority of respondents' education was Senior High School. Research conducted by Retno and Siska suggests that education can affect a person's learning process, the higher the education, the easier it is for a person to receive information [19].

In Table 1, the majority of respondents' occupations were housewives, totalling 43 participants. Occupation allows individuals to interact and exchange information, thus making knowledge broader. This corresponds to the research of Kurniasih, et al. that there was a significant correlation between occupation and the level of knowledge of self-medication for diarrhea with a p-value of 0.023 [10]. Individual may gain experience and knowledge through the work setting, either directly or indirectly. Work is also related to income. Respondent average monthly income < IDR 2.000.000 since most of them were housewives and there was no income. Hence, most respondents filled out the questionnaire based on their spouse's income.

In this study, there were 51 boys and 39 girls. Based on Table 6, children aged < 2 years had higher prevalence of diarrhea. This happened since the natural immunity of toddlers aged < 2 years has not yet fully formed. It can be due to the weaning or additional nutrition, such as formula milk, mixed foods, and lack of hygiene during food processing [12]. Socio-economic community and food or drink consumed by toddlers are other factors that can provoke diarrhea [27]. The high number of diarrhea prevalence under five years can be triggered by a lack of dissemination of diarrhea in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia. A total of 62 parents of toddlers have never received education on diarrhea and 28 participants have educated. According to Istiqomah and Sitti, counseling and dissemination carried out by Integrated Services Post (Posyandu) and Community Health Centre (Puskesmas) can diminish the prevalence of diarrhea among toddlers [8] (Table 2).

Respondents practiced self-medication before visiting the doctor < 3 days, with a total of 86 people, 5–6 days as many as 2 people, and 1 week as many as 2 people. Most respondents chose to self-medicate first because the disease was mild (53.3%), saved on treatment costs (20%), and was easy to access (16.7%). Respondents did self-medication by purchasing drugs at pharmacies.

In this study, the supplements used by respondents to treat diarrhea in children were ORT as many as 62 people, 18 people selected Lacto-b, and Zink as many as 10 people. According to Robiyanto, ORT serves to replace electrolytes and body fluids lost during diarrhea so as to prevent dehydration [20]. In line with Siswidiasari, et al., administering ORT (Oral Rehydration Therapy) is the main medication given to overcome the risk of dehydration due to diarrhea [21]. The therapy given apart from ORT is zinc. This can be used as prophylaxis and treatment of acute and persistent diarrhea. When children experience diarrhea, zinc in the body will decrease in large numbers. So that when children have diarrhea, zinc can help heal and maintain their health [11]. Diarrhea treatment in children can also consume probiotics, one of which is Lacto-B. Probiotics are used to reduce the frequency and duration of diarrhea by increasing the immune response,

Table 2. Characteristics of respondents

No	Characteristic	Variable	f	%
1.	**Gender**	Boy	51	56.7%
		Girl	39	43.3%
2.	**Toddler's Age**	0 – ≤ 2	49	45.56%
		> 2–4	41	54.44%
3.	**When was the last time the children experienced diarrhea?**	This month	2	2.2%
		1 month ago	13	8.9%
		3 months ago	15	24.4%
		6 months ago	40	12.1%
		> 6 months	20	12.2%
4.	**Have you ever received education on self-medication for diarrhea?**	Yes	28	31%
		No	62	68.9%
5.	**Get medicine**	Drugstore/ pharmacy	90	100%
6.	**Self-medication reasons**	Mild disease	57	53.3%
		Save on medical cost	18	20%
		Easy to access	15	16.7%
7.	**How long does it take to self-medicate before going to the doctor?**	< 3 days	86	95.6%
		5–6 days	2	2.2%
		1week	2	2.2%
8.	**Supplements used when toddlers experienced diarrhea**	Oral rehydration therapy (ORT)	62	68.9%
		Lacto-B	18	20%
		Zink	10	11.1%

production of antimicrobial substances, and inhibiting the growth of pathogenic bacteria that prompt diarrhea [6]. The reason of mothers to choose Lacto-b for their child diarrhea medication is that the brand is easily remembered, the dosage form is practical, the packaging is attractive, and the taste is not bitter [2].

3.2 Level of Knowledge, Attitude, and Behavior of Respondents Toward Self-medication for Diarrhea

Knowledge is the outcome when an individual knows an object through his senses. Everyone has unalike knowledge according to how one evaluates something [15]. The level of knowledge of the majority respondents was moderate (73.3%). Based on Table 1, the latest education of parents was Senior High School (SMA/SMK). A person with higher education does not necessarily imply that he is highly knowledgeable. Therefore, it is important to improve until it is classified as good. Improvements can be seen in

Table 3. Distribution of Respondents' Level of Knowledge, Attitude, and Behavior toward Self-Medication for Diarrhea among Parents of Toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia.

	Level of Knowledge		Attitude		Behavior	
	f	%	f	%	f	%
Good	17	18.9	34	37.8	66	73.3
Moderate	66	73.3	50	55.6	20	22.2
Enough	7	7.8	6	6,7	4	4.4
Total	**90**	**100**	**90**	**100**	**90**	**100**

Description: good ($\geq$76–100%), moderate 56–75% and low ($\leq$55%).

form of providing dissemination regarding diarrhea, its prevention, and self-medication for diarrhea in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia.

Based on Table 3, most of the respondents had a moderate attitude that is equal to 55.6%. According to Yuliastuti et al., one's self-medication attitude is modified by the level of knowledge [10]. In line with the results of this study, the level of knowledge and attitude of the majority of respondents were equally moderate. According to Insany et al., the formation of attitudes and behavior can be affected by a person's personal experience.

According to (Notoatmodjo, 2010), behavior is shaped by three factors; predisposition (knowledge and attitudes of the community towards health), supporters (availability of facilities and infrastructure), and drivers (attitudes, behavior of community leaders, and government regulations). Based on Table 3, the majority of respondents had good behaviour of 73.3%. From the data, it can be determined that the respondents had performed self-medication for diarrhea correctly.

3.3 Answer Distribution of Knowledge, Attitude, and Behavior

Based on Table 4, 22 items of level of knowledge, the majority of respondents had higher percentage of correct answers. The subdomains of knowledge items with a higher correct percentage are definition, non-infectious causes, symptoms of diarrhea, symptoms of dehydration, prevention, pharmacological treatment, non-pharmacological treatment, and diarrhea self-medication. One item of level of knowledge number 4 obtained results more incorrect answers (51%), the question is the subdomain of causes of infectious diarrhea. This type is classified clinically and pathophysiologically into non-inflammatory diarrhea and inflammatory diarrhea. This is caused by the invasion of bacteria and cytotoxins in the colon with manifestations of dysentery syndrome of diarrhea with mucus and blood. Clinical symptoms include heartburn to pain such as nausea, colic, vomiting, fever, and symptoms of dehydration. On macroscopic stool examination, mucus and/or blood can be found, microscopically, polymorphonuclear leukocytes are plausible [1].

Table 4. Answer Distribution of Level of Knowledge

No	Question for Level of Knowledge	True	False	Percentage of Correct Answers (%)
1.	Diarrhea is bowel movement exceeding 3 times a day, emitted into liquid stools, and is usually followed by abdominal pain.	85	5	94
2.	Acute diarrhea lasts less than 14 days.	71	19	79
3.	Causes of diarrhea include bacteria, viruses, and parasites.	66	24	73
4.	Diarrhea accompanied by blood and mucus is a sign of infectious diarrhea.	44	46	49
5.	Lactose intolerance is one of the causes of diarrhea.	53	37	59
6.	Malnutrition is one of the causes of diarrhea.	67	23	74
7.	Vomiting and fever are symptoms accompanying diarrhea.	61	29	68
8.	Lethargic children, sunken eyes, and indolence of dehydration are signs that a child is moderately dehydrated.	64	26	71
9.	Restless, fussy, and thirsty child is a sign of severe dehydration.	70	20	78
10.	Washing hands with soap and clean water before and after eating are the efforts to prevent diarrheal disease.	62	28	69
11.	Measles immunization can be one of the steps to prevent diarrhea.	60	30	67
12.	When a child (toddler) experiences diarrhea, Entrostop® Anak syrup can be administered.	61	29	68
13.	Zinc can be discontinued after diarrhea improves.	61	29	68
14.	Zinc can reduce the frequency of bowel movements and dehydration during diarrhea.	60	30	67
15.	In children with diarrhea, Interlac®/ Lacto-B® therapy can be administered according to the prescribed dose.	61	29	68

Table 4. (*continued*)

No	Question for Level of Knowledge	True	False	Percentage of Correct Answers (%)
16.	Antibiotics are required in any diarrhea.	59	31	66
17.	The main therapy recommended for children with diarrhea is ORT.	62	28	69
18.	Breast milk is given when the baby has diarrhea.	57	33	63
19.	Child with diarrhea should avoid consuming porridge.	54	36	60
20.	Tea can be used to treat diarrhea.	60	30	67
21.	A solution of sugar and salt can be used as a substitute if ORT is not available.	53	37	59
22.	When a child has diarrhea accompanied by fever, bloody and slimy stools, self-medication can be opted for.	64	26	71
23.	Children under 6 months with diarrhea can be self-treated.	56	34	62

Based on Table 5, 13 items of attitude questions, the majority of respondents scored more than 3–4, with subdomains of prevention, self-medication, treatment, and causes. Most of the respondents agreed on the importance of washing hands before and after eating, consuming boiled water and clean food, administering zinc and ORT to child with diarrhea, the need for vaccines, breastfeeding for infants, giving fluids, and adequate rest for child with diarrhea. Questions with subdomains non-pharmacological treatment obtained lower score from respondents' answers (score 1–2). Most respondents agreed with the statement that porridge can aggravate diarrhea in children. According to cross diarrhea, porridge can be a complementary food to breast milk. In the porridge, there are complex carbohydrates that can replace the energy lost due to diarrhea [17]. Hence, the porridge can be consumed when the child experiences diarrhea.

Based on Table 6, respondents answered with the majority correct answer. The lowest percentage is about the preparation of ORT with 61.1%. This was attained due to the large number of respondents who had never received education regarding self-medication for diarrhea (Table 6) so respondents were unsure about the measurement to dissolve ORT. Making ORT is by dissolving 1 pack of ORT into 200 mL of water [29].

Table 5. Answer Distribution of Attitude

No	Question of Attitude	Score			
		1	2	3	4
1.	I think washing children's hands before and after eating can reduce the risk of being infected by diarrhea.	2	2	32	54
2.	In my opinion, providing boiled water and clean food are ways to avoid diarrhea in children.	3	42	38	7
3.	I think administering ORT to children can overcome the lack of fluids (dehydration) during diarrhea.	6	10	52	22
4.	I think zinc should be administered to children with diarrhea.	4	4	42	40
5.	I think children need to get measles immunization in an effort to prevent diarrhea.	7	25	31	27
6.	In my opinion, when children aged < 5 years have diarrhea, antidiarrheal drugs should be administered, such as Enterostop® Anak Syrup.	6	17	53	14
7.	I think breast milk is good for babies with diarrhea.	4	28	44	14
8.	In my opinion, providing adequate fluids during diarrhea can prevent dehydration.	2	7	36	45
9.	In my opinion, allowing children to have enough rest time can restore energy because of the large amount of body fluids lost during diarrhea.	4	9	42	35
10.	In my opinion, porridge can aggravate diarrhea in children.	7	44	34	5
11.	I think giving tea water can reduce diarrhea symptoms in children.	9	27	41	13
12.	I think formula milk can cause diarrhea in children.	11	28	41	10
13.	In my opinion, diarrhea in children less than 6 months can be self-medicated.	13	31	31	15
14.	In my opinion, when a child has diarrhea accompanied by vomiting, they should be referred to the doctor	9	34	33	14

3.4 Correlation of Level of Knowledge on Self-medication Attitudes and Behaviors

The results of the correlation between the level of knowledge on attitudes and behavior toward self-medication for diarrhea are presented in Table 7.

Based on the research data, it can be implied that the level of knowledge on self-medication attitude for diarrhea was obtained by the calculated r value of 0.596 so that it was categorized as moderate with a significance value (p value) of 0.000. This shows p-value < 0.05, which denotes H_0 is rejected. Therefore, there was a significant correlation between the level of knowledge, attitude, and self-medication for diarrhea among parents of children under five in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia. This study is in line with research conducted in 2020 by Bambungan, which found p-value = 0.000 < (0.05), thus H_0 is rejected. This means there was a correlation

Table 6. Answer Distribution of Behavior

No	Question of Behavior	True	False	percentage correct (%)
1.	I take my child to the doctor if the child has diarrhea accompanied by vomiting, dizziness, increased thirst, and fever.	88	2	97,8%
2.	Before the child take the diarrhea medicine, I read the warnings, directions for use, side effects written on the medicine package.	80	10	88,9%
3.	I continue to breastfeed while the baby experiences diarrhea.	62	28	68,9%
4.	I prepare ORT by dissolving 1 sachet in 200 mL of water.	57	33	63,3%
5.	I give sweet tea water to reduce diarrhea in children.	55	35	61,1%
6.	I reduce the portion of food and nutritional intake when the child experiences diarrhea.	60	30	66,7%
7.	If my child has diarrhea, I administer ORT by giving it after every bowel movement	74	16	82,2%
8.	I gave my child the measles vaccine at the age of 9 months in an effort to prevent diarrhea.	71	19	78,9%
9.	I give porridge when the child experiences diarrhea.	85	5	94,4%

Table 7. Correlation of level of knowledge on attitude and behavior of self-medication for diarrhea

No		r value	Sig.	Strength
1	Level of knowledge of attitude	0.596	0.000	Moderate
2	Level of knowledge of behavior	0.245	0.020	Low

between community attitudes and self-medication for diarrhea in the Mariat District, Sorong Regency [7].

Meanwhile, for the level of knowledge on self-medication behavior for diarrhea found the calculated r value of 0.245, so it was included in the low category with a significance value (*p value*) of 0.020. This result shows p-value < 0.05, which means H_0 is rejected, hence there was a significant correlation between the level of knowledge and self-medication behavior for diarrhea. In line with research conducted by Artiani,

it can be concluded that there is a correlation between the level of knowledge and self-medication for diarrhea among boarding house residents in Gatak, Pabelan, Surakarta [5]. Furthermore, this research corresponds to the research conducted by Robiyanto et al. obtaining p-value $= 0.000 < 0.05$. This indicated that there was a correlation between knowledge and self-medication for diarrhea [20]. In the light of these results, the success of self-medication was influenced by the level of community knowledge.

The shortcoming of this research is that the site of the integrated health service post was not sufficient, so it caused a crowd when filling out the questionnaire. Some toddlers were dainty, thus hindering the concentration of parents while filling out the questionnaire.

4   Conclusion

Based on the results of the study, it can be concluded that there was a correlation between the level of knowledge, attitudes, and behavior toward self-medication for diarrhea among parents of toddlers in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia in 2021. The results of the correlation test of knowledge on the attitudes of parents of toddlers towards self-medication for diarrhea yielded 0.596 with the significance level was 0.000, with a moderate correlation. Meanwhile, the results of the knowledge test on the behavior among parents of toddlers toward self-medication for diarrhea was 0.245, with a significance level of 0.020, which had low correlation. Therefore, dissemination about diarrhea, its prevention as well as self-medication can be carried out in order to increase the level of knowledge, attitude, and behavior toward self-medication for diarrhea in Parangjoro, Grogol, Sukoharjo, Central Java, Indonesia.

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