

Improving Knowledge, Attitude, and Perception towards Childhood Diarrhea Using Interactive Discussion in Kulon Progo Community

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Abstract Diarrhea is still a leading cause of death globally in children, especially in children under five years. Diarrhea is a contagious disease with relatively high morbidity and mortality rates. Rotavirus is a cause of diarrhea in children and is a fundamental public health problem in developed and developing countries. Lack of knowledge, attitude, and perception towards childhood diarrhea might result in ignorance of the prevention and management of diarrheal diseases among children. This explanatory mixed quantitative-qualitative method with a quasi-experimental design study determines the effect of interactive discussion on changes in knowledge, attitudes, and perceptions towards the prevention and management of childhood diarrhea among children, young adults, and mothers living in the area of The Ash-Shiddiqiyah Orphanage located in Central Sremo, Hargowilis, Kokap, Kulon Progo Regency, Yogyakarta. We conducted the activities on November 29th, 2020, with 76 participants consisting of 59 children / young adults and 17 mothers from the area. Among mother & child / young adult groups, the results showed that the post-test scores in all sections (knowledge, attitudes, and perceptions) were significantly higher than the pre-test scores. Sixty-seven participants (54 children/young adults and 13 mothers) who completed the pre-and post-tests were included in quantitative analysis. Generally, there were increments of 1.3 points in knowledge ($p < 0.001$), 0.5 points in attitudes ($p < 0.001$), 0.4 points in perception ($p < 0.05$), and 0.8 points in overall scores ($p < 0.001$). All interviewees from both mother and child/young adult groups agreed that the intervention had been properly conducted with precise delivery, easy to understand for adults and children, and ability to two-way communication. Technology utilization might help the understanding of the audience. Besides, a small group discussion in the session may benefit the participants to ask more confidently than asking in the middle of a large group

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due to shame. The interactive discussion could improve knowledge, attitude, and perception towards childhood diarrhea. The delivery of interactive debate using simple language for the targeted population, adoption of small group discussions, and technology utilization might help the effectiveness of the intervention. Further study is needed to identify effective ways to promote childhood diarrhea management and prevention in the community.

1. INTRODUCTION

Diarrhea is still a leading cause of death globally in children, especially in children under five years (WHO, 2017). Diarrhea is loose stool more frequent than usual (3 or more times a day) and characterized by symptoms of dehydration, fever, nausea, and vomiting, anorexia, weakness, pale, abdominal pain, sunken eyes, dry mucous membranes, decreased urine output, and so on (Al-Gallas et al., 2007; Ju et al., 2008).

Diarrheal disease is an endemic disease with a potential for an outbreak and death risk in Indonesia. According to *Riset Kesehatan Dasar (Kemenkes RI, 2020)*, the prevalence of diarrhea based on diagnosis by health workers is 6.8% and based on diagnosis by health professionals or symptoms at 8%. The age group with the highest prevalence of diarrhea (based on diagnosis by health professionals) was in the 1-4 years age group at 11.5% and in infants at 9%. Under-five children are most at risk for morbidity and mortality due to diarrhea. According to data reported to the Directorate of Family Health through komdat.kesga.kemkes.go.id, in 2019, out of 29,322 under-five deaths, 20,244 (69%) occurred during the neonatal period. Meanwhile, 6,151 deaths (21%) occurred at the age of 29 days – 11 months, and 2,927 deaths (10%) occurred at 12–59 months. Infectious diseases contributed to death in children aged 29 days - 11 months. Based on 2019 data, pneumonia and diarrhea are still the main problems that caused 979 and 746 deaths, respectively. Other causes of extinction include gastrointestinal disorders, neurological disorders, malaria, tetanus, and others (Kemenkes RI, 2020).

In Indonesia, rotavirus causes 60% of diarrhea in children under five hospitalized, and 41% of diarrhea cases are outpatient (Soenarto et al., 2009). Improvements in environmental sanitation and hygiene and oral rehydration efforts with oral rehydration solution alone cannot reduce the mortality and morbidity rates of rotavirus diarrhea, so vaccination is the most effective prevention effort (Kim et al., 2005). The goal of administering the rotavirus vaccine is to provide the same level of protection as protection from natural infections. Natural infection does not provide lifelong immunity to rotavirus infection and mild disease but prevents the subsequent onset of severe

rotavirus infection (Dennehy, 2008; Grimwood & Lambert, 2009). Rotavirus is a cause of diarrhea in children and is a very important public health problem in both developed and developing countries. On average, 531 billion rupiahs per year must be lost to children who are hospitalized and outpatient due to rotavirus diarrhea. Not only the government has to bear the economic burden of rotavirus diarrhea, but families and communities must also share the economic burden of around 20% of it (Wilopo et al., 2009).

As one of the top 10 diseases in Yogyakarta, as many as 66,698 or 82.8% diarrhea cases occurred in children, 28.3% were under five. Of the 12,657 toddlers, 89.6% received zinc. In 2019 alone, there were still 3 deaths of children under five (12-59 months) due to diarrhea in the Kulon Progo area, and this was the highest in the DIY area (Dinkes DIY, 2019). A qualitative study conducted by Seale et al. (2015) found that people do not acknowledge diarrhea as a significant health problem in Indonesia. The most effective delivery of information is interpersonal communication due to the direct face-to-face communication causing a stimulus, namely messages or information conveyed by the communicant directly to get a response (Seid & Hussen, 2018). Early management of diarrhea is a form of health behavior because it is still related to a person's response to illness and disease. Three aspects that shape a person's health behavior consist of predisposing, enabling, and reinforcing factors. One of the predisposing factors that influence behavior is knowledge. Knowledge is influenced by several factors, including education, occupation, age, interests, experience, culture, and information (Mubarak, 2011). Lack of knowledge, attitude, and perception towards childhood diarrhea might result in ignorance of the prevention and management of diarrheal diseases among children.

The Ash-Shiddiqiyah Orphanage is located in Central Sremo, Hargowilis, Kokap, Kulon Progo Regency, Yogyakarta Special Region. Kokap District is one of the sub-districts in Kulon Progo which has an area of 73.80 km² with a distance of 10 km from the district's capital (BPS Kulon Progo, 2020). This orphanage is an orphanage located in an area that still has low socio-economic conditions. In addition, the location of orphanage is also located in the middle of a forest and on a hill, which limits access to health

facilities. The objective of the study is to evaluate the effectiveness of interactive discussion on knowledge, perception, and attitudes (KAP) towards the prevention and management of childhood diarrhea.

2. METHOD

The method used is the explanatory mixed quantitative-qualitative method design in this method, data collection, and data analysis using the quantitative approach. The study used was a quasi-experimental design study to determine the effect of interactive discussion on changes in KAP towards the prevention and management of childhood diarrhea. Quantitative data obtained by measuring before (pre) and after (post) interactive discussion intervention using questionnaires for each participant. In the end, qualitative data collection was acquired by interviewing six representatives from each group. The inclusion criteria of participants include the residents who live in the Ash Shiddiqiyah Orphanage home and surrounding area with age above seven years old and obtained consent from the participants or guardians (for participants below 18 years old). The exclusion criteria include the caretakers of the orphanage home, residents living in the area yet not present during the activities. We divided participants into four groups: group A (orphans currently at elementary or junior high school), group B (orphans now at senior high school or higher degree), and group C (non-orphans currently at elementary or junior high school), and Group D (mothers). Ethics Committee has reviewed the discussion materials, questionnaires, and interview guidelines at the Faculty of Medicine, Public Health, and Nursing of Universitas Gadjah Mada (letter number: KE/FK/1205/EC/2020) before the activities.

One session of interactive discussion was facilitated by a pediatrician and general physicians who have been experienced in managing childhood diarrhea. The discussion material contains diarrhea definition, the burden of the disease, epidemiology, causes of diarrhea, transmission route, risk factors, signs and symptoms, warning signs of diarrhea and dehydration, management of diarrhea, home management, and prevention. The facilitators and researchers have

reviewed all the material contents for its language appropriateness for laypersons, validity, information sources and updates, and applicability. The interactive method was ensured by maintaining the two-way interactions between the facilitators and audience during the presentation and question-and-answer (Q&A) session.

Questionnaires were collected from the participants before and after the interactive discussion. The questionnaire was divided into four sections, demographic and characteristic information, knowledge, attitude, and perception. Questionnaire results (KAP sections) were scored then categorized using modified Bloom's cut-off points into good (≥ 6 from 0-10) or poor (< 6 from 0-10) (Benjamin et al., 1968). The educational method given to participants was through a 90-minute interactive discussion where the population was divided according to age and gender. The intervention is provided by 1) interactive discussion on diarrhea, signs and symptoms, risk factors, early management, complications, treatment, prevention, 2) demonstration and practice of preventing diarrhea by washing hands, and 3) interactive questions and answers. Both pre-and post-test results were included in quantitative analysis using SAS version 9.4 statistical analysis software. All demographic characteristics were displayed descriptively by groups. At the same time, pre-and post-test were analyzed by group and KAP domain for normality test then analyzed using paired t-test (normal distribution) or Wilcoxon signed-rank T-test (non-parametric). For the knowledge section, we conducted Chi-square analysis or Fisher's exact test to compare proportions of correct answers between pre-and post-tests and by groups.

The interviews using a structured guideline were collected from 3 representatives randomly selected from group B (orphans with high school / higher degree) and three representatives randomly selected from group D (mothers). The interviews were then verbatim transcribed and interpreted by two researchers independently. The interview questions include the diarrheal causes in the area, effort to prevent and manage the diarrheal disease, suggestions to improve, feedback, and recommendations on the interactive discussion intervention.

3. RESULT AND DISCUSSION

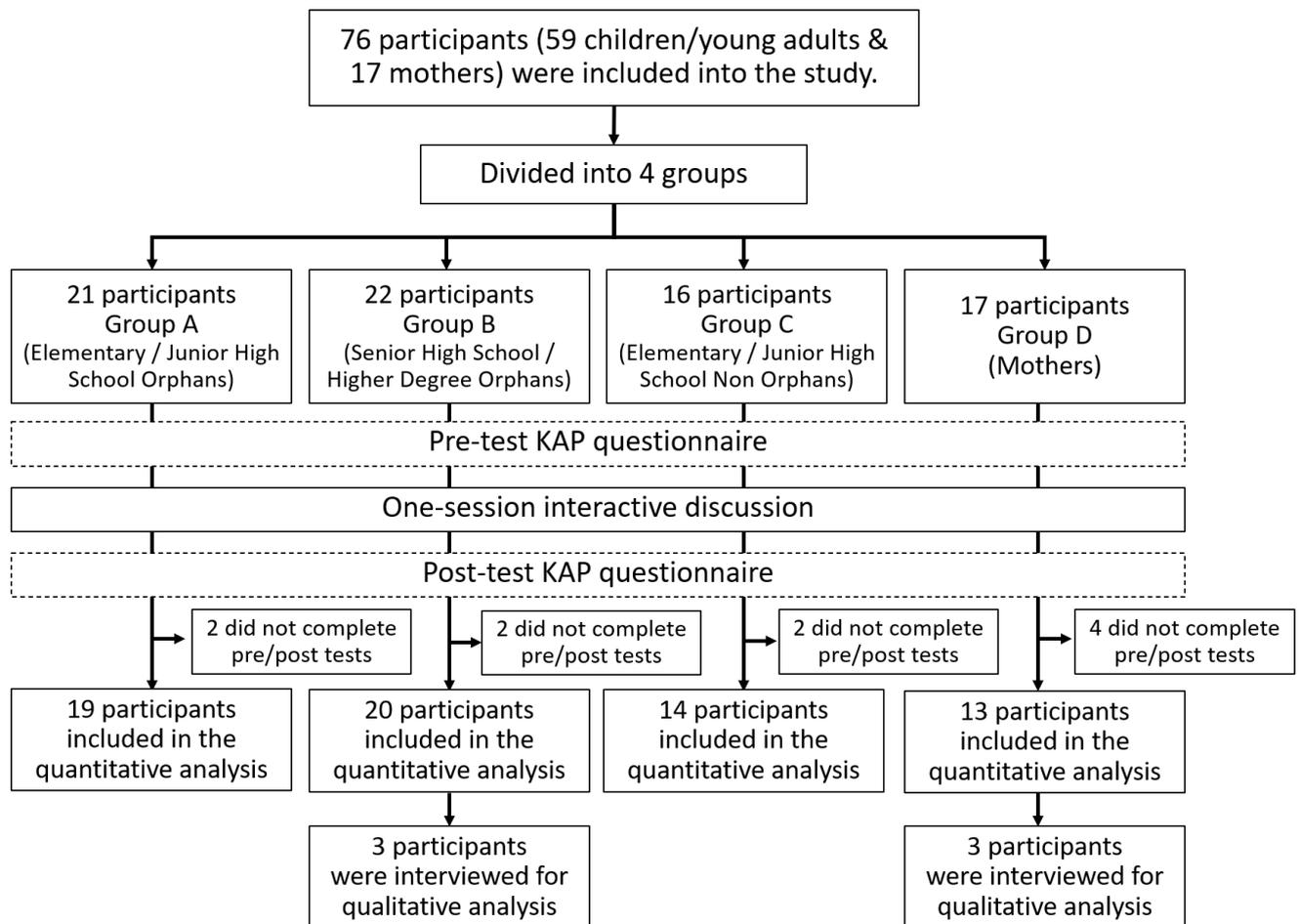


Figure 2. Study flow diagram

About 67 participants (13 mothers and 54 children/young adults) who completed both pre-test and post-test were included in quantitative analysis (see Figure 2). The demographic characteristics of participants were described in Table 1. Most children/young adults (group A, B, and C) (53.7%) had diarrhea ever in the last year compared to about 38.5% of mothers who had diarrhea in the past year.

Approximately 74.1% of children/young adults had been informed about diarrhea compared to only 30.8% of mothers who had been informed previously. The information sources among child and mother participants were described in table 2. Most children obtained the information source from teachers (38.9%) and television (29.6%), while most mothers obtained it from television (53.9%) and newspaper (30.8%).

Table 1. Demographic characteristic of participants (N=67)

Characteristics	Group A (Elementary / Junior High School Orphans) n= 19	Group B (Senior High School / Higher Degree Orphans) n = 20	Group C (Elementary / Junior High School Non Orphans) n = 14	Group D (Mothers) n=13
Age in years, median (min-max)	13 (8-17)	17 (15-23)	10 (7-16)	44 (29-58)
Sex, n (%)				
Male	10 (52.6)	6 (30.0)	8 (53.3)	0 (0)
Female	9 (47.4)	14 (70.0)	7 (46.7)	13 (100)
Education, n (%)				
Elementary school	8 (42.1)	0 (0)	10 (66.7)	2 (15.4)
Junior high school	11 (57.9)	0 (0)	5 (33.3)	4 (30.8)
Senior high school	0 (0)	15 (75.0)	0 (0)	7 (53.9)
Diploma	0 (0)	3 (15.0)	0 (0)	0 (0)
Bachelor	0 (0)	1 (10.0)	0 (0)	0 (0)

Diarrhea history in the last 1 year, <i>n (%)</i>				
Yes	15 (78.9)	7 (35.0)	7 (46.7)	5 (38.5)
No	4 (21.1)	13 (65.0)	8 (53.3)	8 (61.5)
Frequency of diarrhea, median (<i>IQR</i>)	2 (1-3)	5 (1-6)	3 (2-3)	2 (1-2)
Receiving medication, <i>n (%)</i>				
Yes	3 (20.0)	3 (42.9)	5 (71.4)	5 (100)
No	12 (80.0)	4 (57.1)	2 (28.6)	0 (0)
History of diarrhea hospitalization, <i>n (%)</i>				
Yes	0 (0)	0 (0)	0 (0)	1 (7.7)
No	19 (100)	20 (100)	15 (100)	12 (92.3)
Information exposure about diarrhea, <i>n (%)</i>				
Yes	16 (84.2)	16 (80.0)	8 (53.3)	9 (30.8)
No	3 (15.8)	4 (20.0)	7 (46.7)	4 (69.2)

Table 2. Details of information exposure

Source of information	Children / Young Adults (Group A, B, C) n=54	Mothers (Group D) n=13
Electronic media, <i>n(%)</i>		
Television	16 (29.60)	7 (53.85)
Radio	3 (5.56)	1 (7.69)
Others	2 (3.70)	0 (0.00)
Print media, <i>n(%)</i>		
News paper	13 (24.07)	4 (30.77)
Leaflet	1 (1.85)	0 (0.00)
Others	2 (3.70)	0 (0.00)
Social media, <i>n(%)</i>		
WhatsApp	7 (12.96)	2 (15.38)
Facebook	8 (14.81)	2 (15.38)
Others	0 (0.00)	1 (7.69)
Directly, <i>n(%)</i>		
Parents	9 (16.67)	2 (15.38)
Teachers	21 (38.89)	3 (23.08)
Orphanage managers	1 (1.85)	0 (0.00)
Friends	3 (5.56)	1 (7.69)
Others	7 (12.96)	1 (7.69)

**Figure 3.** The mothers from the surrounding area of Ash Shiddiqiyah Orphanage were filling post-test questionnaires while being guided by facilitators.

3.1 The KAP Analysis

Each participant fulfilled the pre-and post-tests, while each group was guided by 2-3 trained facilitators without leading to any answer option (see Figure 3). The questionnaire results showed that the post-test scores in all sections (knowledge, attitudes, and perceptions) were significantly higher compared to the pre-test scores by 0.8 points ($p < 0.0001$). The Shapiro-Wilk test showed non-normal distribution for overall KAP sections. The most improvement of KAP score (with 0-10 scale) was shown by knowledge score with

a median increased by 1.3 points from 6.7 at pre-test into 8 (from 0-10 scale) at statistically significant post-test ($p < 0.001$) based on Wilcoxon signed-rank test. Furthermore, there were increments of 0.5 points in attitudes ($p < 0.001$), 0.4 points in perception ($p < 0.05$), and 0.8 points in overall scores ($p < 0.001$).

All scores from all participants had improvement from poor (< 6 from 0-10 scale) at pre-test to good (≥ 6 from 0-10 scale) at post-test, except in the attitude score (**Table 3**). This result showed that educational

intervention could improve the mother's knowledge, attitude, and practice regarding diarrhea and its management. Besides, the longer period of follow-up and interventions showed correlations in improving the knowledge, attitude, and practice regarding diarrhea (*Ansari et al., 2012*). Increasing health education on early case management of childhood diarrhea may be beneficial in reducing the morbidity and mortality due to childhood diarrhea (*Rehan et al., 2003*).

Table 3. Scores of knowledge, attitude, and perception in all groups

Scores	All Participants N=67			Child / Young Adults (Group A, B, C) n = 54			Mothers (Group D) n=13		
	Pre-test	Post-test	P-value*	Pre-test	Post-test	P-value*	Pre-test	Post-test	P-value*
Knowledge, median (IQR)	6.67 (6.0-8.0)	8 (7.3-8.7)	<0.0001	6.7 (6.0-7.3)	7.3 (6.7-8.0)	<0.0001	8.0 (7.3 – 8.0)	8.0 (8.0-8.7)	0.2422
Poor, n (%)	12 (17.9)	3 (4.5)		12 (22.2)	3 (5.6)		0 (0)	0 (0)	
Good, n (%)	55 (85.1)	64 (95.5)		42 (77.8)	51 (94.4)		13 (100)	13 (100)	
Attitude, median (IQR)	8 (7-8.5)	8.5 (7.8-9.3)	0.0002	7.8 (6.8-8.5)	8.5 (7.8-9.3)	<0.0001	8.5 (8.3-9.3)	8.8 (7.8-9.3)	0.7466
Poor, n (%)	1 (1.5)	2 (2.9)		1 (1.9)	2 (3.7)		0 (0)	0 (0)	
Good, n (%)	66 (98.5)	65 (97.0)		53 (98.2)	52 (96.3)		13 (100)	13 (100)	
Perception, median (IQR)	7.5 (6.7 - 8.1)	7.9 (7.3 – 8.8)	0.0157	7.3 (6.5-7.9)	7.9 (7.1-8.5)	0.0026	8.3 (7.5 – 8.9)	8.3 (7.3-8.8)	0.5562
Poor, n (%)	1 (1.5)	5 (7.5)		1 (1.9)	5 (9.3)		0 (0)	0 (0)	
Good, n (%)	66 (98.5)	62 (92.5)		53 (98.2)	49 (90.7)		13 (100)	13 (100)	
Overall scores, median (IQR)	7.4 (6.5 - 7.9)	8.2 (7.5 – 8.6)	<0.0001	6.9 (6.5-7.8)	8.0 (7.4-8.6)	<0.0001	8.3 (7.8-8.5)	8.4 (7.8-8.7)	0.7227
Poor, n (%)	4 (5.9)	3 (4.5)		4 (7.4)	3 (5.6)		0 (0)	0 (0)	
Good, n (%)	63 (94.0)	64 (95.5)		50 (92.6)	51 (94.4)		13 (100)	13 (100)	

Among all participants' knowledge section, correct answers on diarrheal causes (no.3), transmission route (no.4), symptoms (no.7), prevention (no.9), and management (no.14) were significantly different between pre-and post-test scores. Almost all of the proportions of correct answers increased from pre-test to post-test, except for the definition of diarrhea (no.1) and role of Oral Rehydration Solution (no.11) that

decreased among the mother group that might be attributable to challenging to understand the specific questions. Furthermore, no questions answered by mothers were significantly different between pre-and post-tests, most likely due to the small number of participants in the mother group. The details of the knowledge questionnaire were described in **Table 4**.

Table 4. Analysis of knowledge section

No.	Questions	Group	Correct Answers		p-value
			Pre-test n (%)	Post-test n (%)	
1	Diarrhea is a condition where the consistency of defecation is more liquid with a frequency more often than usual (≥ 2 times a day). <i>Answer: Wrong</i>	All participants	21 (31.3)	23 (34.3)	0.9077*
		Children / Young Adults	9 (16.7)	22 (40.7)	0.0232**
		Mothers	12 (92.3)	1 (7.7)	0.0769**
2	Diarrhea is a disease that causes death in children. <i>Answer: Correct</i>	All participants	59 (88.1)	63 (94)	0.067**
		Children / Young Adults	47 (87.0)	50 (92.6)	0.0771**
		Mothers	12 (92.3)	13 (100)	-
3	Diarrhea is a disease caused only by bacteria. <i>Answer: Wrong</i>	All participants	25 (37.3)	44 (65.7)	0.015*
		Children / Young Adults	19 (35.2)	34 (62.9)	0.0731*
		Mothers	6 (46.2)	10 (76.9)	0.1923**
4	Diarrhea can be transmitted through the air (sneezing, coughing). <i>Answer: Wrong</i>	All participants	55 (82.1)	41 (61.2)	0.001**
		Children / Young Adults	43 (79.6)	30 (55.6)	0.0052*
		Mothers	12 (92.3)	11 (84.6)	0.1538**
5	Diarrhea can be transmitted through contaminated food and water that causes diarrhea. <i>Answer: Correct</i>	All participants	56 (83.6)	61 (91)	0.254**
		Children / Young Adults	46 (85.2)	48 (88.9)	0.2127**
		Mothers	10 (76.9)	13 (100)	-

6	Rotavirus is not a cause of diarrhea. <i>Answer: Wrong</i>	All participants	32 (47.8)	40 (59.7)	0.345*
		Children / Young Adults	27 (50)	31 (57.4)	0.1688*
		Mothers	5 (38.5)	9 (69.2)	1.000
7	Diarrhea can be accompanied by nausea, vomiting, fever, and loss of appetite. <i>Answer: Correct</i>	All participants	60 (89.6)	61 (91)	0.013**
		Children / Young Adults	47 (87.0)	48 (88.9)	0.0235**
		Mothers	13 (100)	13 (100)	-
8	Diarrhea can cause dehydration <i>Answer: Correct</i>	All participants	59 (88.1)	64 (95.5)	0.321**
		Children / Young Adults	46 (85.2)	51 (94.4)	0.3880**
		Mothers	13 (100)	13 (100)	-
9	The spread of diarrhea can be suppressed by washing hands with soap. <i>Answer: Correct</i>	All participants	54 (80.6)	64 (95.5)	0.006**
		Children / Young Adults	42 (77.8)	52 (96.3)	0.0461**
		Mothers	12 (92.3)	12 (92.3)	0.0769**
10	Diarrhea can also be prevented with vaccines. <i>Answer: Correct</i>	All participants	37 (55.2)	64 (95.5)	0.583**
		Children / Young Adults	31 (57.4)	51 (94.4)	0.569**
		Mothers	6 (46.2)	13 (100)	-
11	Taking ORS is one way to prevent diarrhea. <i>Answer: Wrong</i>	All participants	5 (7.5)	61 (91)	0.060**
		Children / Young Adults	4 (7.4)	6 (11.1)	0.330**
		Mothers	1 (7.7)	0 (0)	0.0769
12	Providing exclusive breastfeeding for 6 months can prevent diarrhea in babies <i>Answer: Correct</i>	All participants	51 (76.1)	61 (91)	0.142**
		Children / Young Adults	39 (72.2)	48 (88.9)	0.3312**
		Mothers	12 (92.3)	13 (100)	-
13	Keeping the environment and sanitation healthy is one way to prevent diarrhea. <i>Answer: Correct</i>	All participants	65 (97)	66 (98.5)	1.000**
		Children / Young Adults	52 (96.3)	53 (98.2)	1.000**
		Mothers	13 (100)	13 (100)	-
14	ORS solution can be drank within 24 hours <i>Answer: Correct</i>	All participants	44 (65.7)	52 (77.6)	<0.001*
		Children / Young Adults	32 (59.3)	41 (75.9)	0.0002*
		Mothers	12 (92.3)	11 (84.6)	1.000**
15	Zinc can treat fluid deficiency due to diarrhea <i>Answer: Correct</i>	All participants	49 (73.1)	64 (95.5)	0.174**
		Children / Young Adults	37 (68.5)	51 (94.4)	0.2303**
		Mothers	12 (92.3)	13 (100)	-

3.2 Interview analysis

The interviews were conducted with six representatives who have been randomly selected after the intervention: three representatives from group B (respondent 01, 02, and 03) and three others from group D (respondent 04, 05, and 06).

3.3 Efforts to prevent and manage diarrheal diseases

All representatives agreed that the residents have not maximally made the efforts to prevent and manage diarrheal diseases, including keeping the environment clean, drinking clean and boiled water, washing hands, getting vaccinated, and seeking proper medications.

"Maybe for drinking water, we use water that is already clean & healthy, then if it's from the PDAM (note: local water company), we boil it first, or we filter it first," said respondent 02.

Even though waste processing and management have not been discussed a lot during the interactive discussion, some of the interviewees mentioned waste processing and management as one of the efforts to prevent diarrheal disease, including separating the dry and wet garbage. The wet waste is used by the local community to feed the livestock. One interviewee mentioned garbage bank had managed some of the trash in the community, but there were still people littering in the area. A cross-sectional household survey in Ethiopia suggested that poor waste management and

poor hygiene and sanitation were significantly related to higher odds of diarrheal diseases (Adane *et al.*, 2017).

3.4 The delivery of interactive discussion

For the interactive discussion intervention, most interviewees agreed that the intervention had been appropriately conducted with precise delivery, easy to understand for both mothers and children / young adults, and ability to two-way communication.

"Yes, the language is clear. Easy to understand. It is easy for villagers (like us) to understand," responded respondent 04.

Some interviewees suggested that multimedia and technology utilization can ease the audience's understanding during the interactive discussion. An interviewee also indicated that a small group discussion in the session might benefit the participants to ask more confidently than asking in the middle of a large group due to shame.

"...because if in a large forum you are unlikely to ask, so embarrassed, in a small forum you can ask more questions," said respondent 03.

Small group discussion might benefit some conditions, including the group with a passive audience. Furthermore, by encouraging people's input and contributions, people are more committed and work harder (Harris & Sherblom, 2018).

3.5 Strengths and limitations

This study has some strengths. Firstly, the knowledge, attitude, and perception survey towards childhood diarrhea have not been conducted in the immediate area. Secondly, the informed consents were adequately conducted and obtained from participants & guardians (for child participants below 18 y.o.) before the activities.

However, this study also has some limitations. Firstly, the short period of intervention is unlikely to show much improvement in attitude and perception among the community. Secondly, due to the small sample size and specific population, the study might not be transferred directly to other people without adjustment. Thirdly, the questionnaires were only internally validated.

4. CONCLUSION

The interactive discussion could improve knowledge, attitude, and perception towards childhood diarrhea. The delivery of interactive discussion using simple language for the targeted population, adoption of small group discussion, and technology utilization might help the effectiveness of the intervention. Further study is needed to identify effective ways to promote childhood diarrhea management and prevention in the community.

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