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**FIELD NOTE**

**UNDERSTANDING THE DIARRHEA PROBLEM IN THE PHILIPPINES:  
RECOMMENDATIONS FOR HEALTH COMMUNICATION**

**Susan Zimicki**  
**HEALTHCOM Evaluation Group**  
**Annenberg School of Communications**  
**University of Pennsylvania**

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## INTRODUCTION

Health Communication for Child Survival (HEALTHCOM) is a five-year communication project designed to assist developing countries promote the widespread use of effective child survival strategies. HEALTHCOM is sponsored by the Office of Health and the Office of Education within the Bureau for Science and Technology of the U.S. Agency for International Development. The Academy for Educational Development will administer the project in up to 17 countries, using research and development to promote changes in behavior with regard to children's health. This approach draws heavily from the disciplines of social marketing, behavioral analysis, instructional design, and anthropology. Specific activities focus on the control of diarrhea, breastfeeding, nutrition, immunization, growth monitoring, and other related areas such as hygiene and environmental sanitation.

In the Philippines, HEALTHCOM is working with the Ministry of Health to develop communication programs promoting oral rehydration therapy (ORT), immunization, and appropriate treatment for acute respiratory infections. The overall objective of the diarrhea control program is to increase use of rehydration fluids to control the dangerous effects of diarrhea, with slightly different specific objectives in each of the two test markets. This program will run from May 1988 through May 1989. In Regions 6 (Western Visayas) and 7 (Central Visayas), where government service delivery networks are fairly strong, Oresol (the powder sachet to be mixed with one liter of water) will be promoted for home treatment at the onset of diarrhea. Oresol can be obtained free from government clinics and hospitals; it is anticipated that it also will become available at commercial outlets during the test market. In Region 10 (Northern Mindanao), where the delivery system is weaker, the program will promote use of home-prepared fluids for treatment starting at the onset of diarrhea, and use of Oresol at health clinics/hospitals at the first sign of dehydration.

The first phase of activities in the HEALTHCOM methodology is the planning and development stage in which information is collected to help understand the overall problem and to help prepare an effective plan of implementation. The information gathered at this stage answers important questions such as:

Who in the total population should be selected as the target audience?

What behaviors should be advocated based on analysis of the responses to the questions? For example, what do people currently know, believe, and do about diarrhea among their children? What are the possible social, economic, or cultural constraints to change in behavior?

What communication channels are most appropriate to reach the audience?

As part of the research activities on the HEALTHCOM project<sup>1</sup> in the Philippines, the Annenberg School of Communications participated with Consumer Pulse, a market research firm, in developing and analyzing a survey of mothers of young children which was carried out in September and October, 1987, in three regions of the country (Regions 6, 7, and 10). The survey asked questions about the prevalence of diarrhea in children, current knowledge and beliefs about diarrhea and dehydration, treatment of diarrhea cases, and use of the mass media and other information sources.

The sample was designed to provide information about poorer urban and rural households in each of the three regions in which pilot programs are planned. In each region 400 interviews were carried out. Within regions, two provinces were sampled, then two cities (urban) and two municipalities (rural) in each province. Ten neighborhoods were chosen from those in the cities and municipalities; in each neighborhood a cluster of 20 household interviews was completed. Households eligible for interview were those judged by the interviewers to belong to the poorest socioeconomic classes, designated D and E, with at least one child five years old or younger. The results of the survey will be presented in this field note to provide answers to the major questions posed above and give recommendations about audiences and strategies for the campaign.

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<sup>1</sup>The Annenberg School of Communications at the University of Pennsylvania has been contracted to carry out an evaluation of HEALTHCOM activities in up to 15 HEALTHCOM sites, including the Philippines. The evaluation in the Philippines would not have been possible without the support from officials at the Philippine Department of Health, in particular, Undersecretary Mario Taguiwalo and Ms. Mayette Bernaje OIC PIHES, and Dr. Kenneth Farr and Dr. Dodong Capul of USAID Philippines. Darrah Estrada of Consumer Pulse ably managed the survey, coding, and data entry with the assistance of the Consumer Pulse staff. Helpful comments were offered by Dr. Robert Hornik of Annenberg and Dr. Sergio Piesche of WHO. Editorial assistance was offered by Dr. Judith McDivitt and Ms. Lorraine Ritacco, both of Annenberg.

## WHO GETS DIARRHEA?—IS THERE A SUBPOPULATION TO TARGET?

The first question that was examined was the prevalence of diarrhea in the sampled households. Overall, 31 percent of households reported a recent case of diarrhea, either on the day of the survey or during the month prior to the survey.<sup>2</sup> Among the 1200 respondents, seven percent (79) reported that at least one of their children five years old or younger had diarrhea on the day of the survey. An additional 25 percent (296 respondents) reported cases in the past month. Only eight percent of the respondents said that their children five years old and younger had never had diarrhea. There was no consistent difference between rural and urban areas.

Next, characteristics of the households with recent cases of diarrhea were examined. It was found that households with more children were more likely to have experienced diarrhea: the risk of having had an episode in the month before the survey was about 23 percent for households with one child less than six years old, 35 percent where there were two children, and 45 percent where there were three or more (see Table 1). In addition, families without running water and those of lower socioeconomic status also were likely to report having had diarrhea in the household. This suggests that specific target audiences for the campaign are mothers with more children and mothers with fewer facilities, lower incomes, and less education.

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<sup>2</sup>The questions asked in the survey were about the most recent case of diarrhea in a child from 0-5 years of age in the household. If two children had diarrhea simultaneously, the questions were asked about the younger of the two. Analysis was limited to recent episodes of diarrhea because the data indicated fairly strong recall bias associated with time since an episode.

Table 1

Percent of households having  
at least one child with recent diarrhea

	All households	Controlling for number of children in household		
		1	2	3+
Overall	31.3	22.6	34.8	45.2
Running water:				
Do not have	32.4	23.6	35.6	46.9
Have	24.7	17.4	30.3	30.4
Income:				
< P1000	34.6	22.4	41.2	47.2
P1001-2000	30.0	27.3	27.6	41.5
P 2001+	24.3	14.7	27.2	47.5
Elementary education:				
Did not complete	35.1	22.8	40.3	52.0
Completed	28.5	22.5	33.8	43.2

**HOW ARE DIARRHEA, SEVERE DIARRHEA, AND DEHYDRATION RECOGNIZED?**

Information about how people recognize diarrhea and how they assess its severity is important. Most episodes of diarrhea are mild, and many children with diarrhea do not lose enough fluid to make it advisable that they be given ORS. Because ORS packets are neither free nor available in infinite supply, it is useful to know if there are cues that could indicate when ORS should be used at home or when a child should be brought to the health center for treatment. To examine this, mothers were asked how they could tell if a child had diarrhea, how they could tell if the diarrhea was getting worse, and how they could tell if the case of diarrhea was very serious. The results are presented in Table 2.

Overall, in response to the question "How can you tell if a child has diarrhea?" the sign most frequently mentioned--by about 75 percent of respondents--was loose, watery stools. The next most common signs were more frequent or irregular bowel movements and some kind of abdominal pain--stomachache, cramps, or gas pains--followed by the child's becoming weak or tired, having sunken eyes, and loss of appetite.

When the pattern of responses to the question "How can you tell if a child's diarrhea is getting worse?" were examined, weakness, sunken eyes, and loss of appetite were relatively more important and loose stools, frequent stools, and stomach pain less important than among responses to the previous question. The signs of weakness and loss of appetite were even more important among the responses to the question: "What are the signs that a case of diarrhea is very serious?" Thus, in mothers' minds, weakness, sunken eyes, and loss of appetite seem to be cues indicating the seriousness of the diarrhea.

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**Table 2**  
**Percent of respondents reporting various signs**

	Diarrhea	Getting worse	Very serious
Loose stools	75.8	32.9	34.6
Frequent stools	28.5	31.5	33.6
Stomach pain	24.9	3.3	1.8
Weakness	16.8	44.7	63.8
Sunken eyes	11.8	24.7	26.9
Loss of appetite	4.7	12.8	18.0

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Another way to examine this is to compare the mother's reports of how sick the child was with the symptoms she reported the child had during the most recent episode. While the signs of loose stools, increased frequency of stools, and stomach pain did not show any particular pattern with relation to severity of the episode, the signs of weakness, loss of appetite and sunken eyes were mentioned for increasing proportions of children who were "a little sick" and "very sick" relative to children who were "not at all sick" (see Table 3).

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Table 3

Percent of episodes associated with various symptoms:  
Report of how sick the child was

	Not at all	A little	Very
Loose stools	75.0	68.3	69.2
Frequent stools	39.6	32.2	38.5
Stomach pain	14.6	19.5	15.4
Weakness	6.9	14.6	34.6
Sunken eyes	5.6	10.2	15.4
Loss of appetite	2.8	5.3	7.7
Number of episodes	144	205	26

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Ideally, in order to inform people about when to use ORS, it would be helpful to have a sign that is recognized in most or all severe episodes and that is associated only with severe episodes. Unfortunately, this situation does not seem to exist. The signs that are reported most frequently for severe episodes also are those reported most frequently for mild episodes.

However, the three signs that are associated with severity (weakness, sunken eyes, and loss of appetite) were each reported about twice as frequently for children who were perceived as "a little sick" as they were for children perceived as "not sick at all." Of these three, weakness showed the greatest contrast for children perceived as "very sick" and was reported about five times more for this group than for children who were not sick at all. Sunken eyes and loss of appetite were each only reported three times more frequently for severe than for mild episodes.

"Weakness/tiredness" is one sign that should be considered as a cue for treatment. It was mentioned as a sign of diarrhea by about 17 percent of respondents, as a sign of worsening diarrhea by 45 percent, as a sign of serious diarrhea by 64 percent, and as a consequence of prolonged diarrhea by 61 percent. It was better correlated with perceived severity of last case than any other commonly mentioned signs.

## HOW DO MOTHERS CURRENTLY TREAT DIARRHEA IN THEIR CHILDREN?

Overall, 80 percent of recent cases received some kind of treatment. Seventy-six percent of cases received treatment at home and 55 percent received some kind of treatment outside the home. This shows that mothers who did treat a case were likely to provide more than one treatment.

### What are the Cues for Treatment?

This section examines the signs that are more likely to be associated with getting a child treated. A sense of whether there are any cues for treatment can be discovered by examining information about recent cases of diarrhea and relating the reported signs and the perceived severity of the illness to whether anything was done at all, and to the proportion of cases for which something was done at home and for which outside advice was sought. The results are presented in Table 4.

Table 4

#### Relationship between treatment sought and reported signs of illness during the most recent episode

	N with sign	% of cases	% With sign for whom something was done		
			At all	At home	Outside
<b>Volunteered</b>					
Loose stools	266	70.9	80.5	76.7	33.5
Frequent stools	133	35.5	82.7	78.9	35.3
Pain	65	17.3	83.1	81.5	27.7
Weakness	49	13.1	87.8	85.7	46.9
Sunken eyes	33	8.8	97.0	87.9	57.6
Loss of appetite	17	4.5	100.0	100.0	58.8
<b>Asked specifically</b>					
Vomit	55	14.7	92.7	85.5	47.3
Blood in stool	32	8.5	87.5	81.3	46.9
Fever	137	36.5	88.3	85.4	47.4
<b>Perceived severity</b>					
A little sick	205	54.7	82.0	80.0	38.5
Very sick	26	6.9	92.3	88.5	73.1
Played less	129	34.4	86.8	84.5	43.4
Stopped playing	27	7.2	100.0	96.3	66.7
<b>Total</b>	<b>375</b>	<b>100.0</b>	<b>79.5</b>	<b>76.0</b>	<b>34.9</b>

Overall, something was done for about 80 percent of all recent episodes with 76 percent receiving some treatment at home, and treatment or advice sought outside the home for about 35 percent. The presence of any sign increases the probability of treatment over the average, but the strongest cues are loss of appetite and the child having stopped playing; all children reported as having either sign received some kind of treatment. There are no unequivocal cues for treatment outside the home; against an average rate of 35 percent for all recent episodes, outside advice or treatment was more likely to have been sought only for those children with any of the signs associated with severity.

Similar data shows signs that are cues for particular kinds of treatment--both positive and negative--in the home. Fifty-nine percent of respondents reported giving extra fluid to the child, and 26 percent reported giving special food. In contrast, seven percent of respondents reported giving the child a purgative, and 30 percent of the respondents who were breastfeeding their children reported that they stopped breastfeeding during the episode. However, no sign was very strongly associated with any of these kinds of treatment.

#### **What Home Treatments Were Used?**

All those who reported ever having a case of diarrhea among children in the household were asked if they had ever heard of Oresol, the oral rehydration solution used in health centers. Overall, 79 percent claimed that they had heard of Oresol, with slightly higher proportions in Region 6 and in rural Region 10 reporting knowledge than in Region 7 and urban Region 10 (see Table 5). Those who claimed hearing of it were asked if they or anyone else had given it to the child during the most recent episode. If we assume that those who did not claim to hear about it did not use it, we can compute the proportion of all most recent episodes for which people reported use when they were questioned directly. This can be compared to the proportion of those who mentioned Oresol spontaneously when they reported what they had done or the advice that they had received. Both are much lower than the proportion who claim to have heard of Oresol. The proportion of respondents who mentioned it spontaneously was generally somewhat lower than that of those claiming use in response to a direct question.

Table 5

Percent of Oresol recognition and use

	Total	Urban			Rural		
		6	7	10	6	7	10
Ever heard	79.0	87.2	72.8	72.1	86.0	72.4	83.1
<u>Used in most recent episode:</u>							
Elicited response	24.4	23.2	21.3	24.0	28.7	17.2	31.4
Spontaneous response	18.5	23.2	14.2	18.8	24.2	12.3	19.1

Respondents who had heard of Oresol but had not used it during the most recent episode were asked why they had not (see Table 6). The most common response was that there was no supply available; this is clearly an area where improvement can be made during the pilot projects. The second type of response can also be related to failure of a provider to recommend Oresol or to respondents' lack of knowledge about it and can also be affected by education of mothers and of health providers. The third common type of response was essentially that there was no need for Oresol when the diarrhea was mild, or it was cured by other home remedies or medicines. An additional reason for non-use was that the child did not like the taste.

Table 6

Reasons for non-use of Oresol

	Percent
No supply	37.5
Not prescribed	9.2
Didn't know about it	5.4
Didn't know how to prepare	8.1
Diarrhea mild	18.7
Cured by other medicine	12.9
Cured by home remedies	6.6
Child didn't like taste	7.1

## **How Did Mothers Feed Their Children During Diarrhea?**

More than half of the respondents reported giving extra fluid to children with diarrhea, and about a quarter gave special food. The most commonly given fluid was water, either plain (47 percent) or boiled (six percent) followed by tea (21 percent), herbal decoctions (21 percent), and softdrinks (19 percent). Rice water (six percent) and Pedialyte (five percent) were used by many fewer respondents.

Special foods given were primarily lugao (63 percent), fruit (23 percent), soda crackers (19 percent), eggs (14 percent), and broiled fish (14 percent). It is interesting that 15 percent of respondents said that they avoided giving fruit (unfortunately we don't have details about the kinds of fruit that are given and avoided). However, the foods that the greatest proportions of respondents reported avoiding were milk (22 percent), oily foods (20 percent), and rice (11 percent). About one-third said that they did not avoid any particular type of food.

## **Where Did Mothers Go For Treatment and What Treatment or Advice Did They Get?**

Although up to 50 percent of episodes are treated only at home, mothers consult with people outside the home for the remainder of cases. Thus, it is important to understand the kinds of treatment recommended or provided by different sources so that a realistic decision can be made about the need to educate providers.

Five hundred and sixty-one respondents reported that they went outside the home to get advice or obtain treatment for the most recent episode of diarrhea among young children in the household. They were asked to list up to three places they went and to tell up to three things that each source recommended they do or use (see Table 7). While most only sought advice from one source, 121 (22 percent) reported going to two sources, and 14 (3 percent) reported going to three. The most commonly reported source was the private medical sector (40 percent of contacts), followed by health center personnel (20 percent), government hospitals (12 percent), friends, neighbors, and relatives (12 percent), and traditional healers (9 percent). Barangay health workers accounted for only five percent of all contacts, and pharmacies for three percent.

An examination of the advice/treatment received from each source reveals that about one-third of all contacts with government hospitals, the private medical sector, or

people in the community, and one-fifth of all contacts with a health center involved a recommendation for antibiotics (see Table 7). About one-third of health center, government hospital, and private sector visits, and about one-fourth of community contacts involved a recommendation for antidiarrheals or similar drugs. Oresol was recommended in more than 40 percent of the contacts with health centers and about 20 percent of those with government hospitals; other rehydration solutions were recommended about 20 percent of the time by government hospitals and the private sector.

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**Table 7**

**Type of advice/treatment received from each type of source  
(most recent episode)**

Antibiotics	33.8	3.3	18.1	31.4	38.5
Antidiarrheals	25.0	3.3	36.2	29.1	38.5
Liquids	6.3	3.3	4.3	2.3	6.8
Herbal preps.	32.5	53.3	6.5	1.2	.7
Oresol	6.3	0.0	42.0	18.6	5.8
Other ORS	2.5	6.7	4.3	20.9	18.0
Other spec. remds.	20.0	36.7	8.0	8.1	14.7
Don't know	0.0	0.0	8.7	14.0	11.5
N of contacts	80	60	138	86	278
% of contacts	11.5	8.6	19.8	12.4	39.9

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**WHAT ARE POSSIBLE CONTACT POINTS  
FOR EDUCATION ABOUT ORAL REHYDRATION?**

Two possible ways to reach mothers with new information about diarrhea treatment are through health care providers and through the mass media.

**Which Health Care Providers are Good Sources of Information?**

Information about the last case of diarrhea in the household can be used with caution to predict the efficiency of any particular kind of health care provider for dissemination of new information about diarrhea treatment. Information about the sources people have ever contacted can be used to determine if frequency of contact with some sources is so low that those sources are of no practical value.

What is most striking about this information, no doubt due to the large proportion of mild episodes among recent cases, is that about 40 percent of respondents did not seek outside help. It is also clear that the private medical sector is a significant source of information about diarrhea treatment. In urban areas people are about two to three times as likely to go to a source in the private sector as to a health center. The overall pattern in rural areas is less clear (see Table 8).

Table 8

Percent of respondents mentioning various sources of treatment or advice about the last case of diarrhea

	Total	Urban			Rural		
		6	7	10	6	7	10
Private dr/clinic/hospital	28.4	28.7	29.6	29.0	22.3	32.5	27.9
Health center staff	14.1	12.2	10.7	16.8	22.9	9.8	12.8
Government hospital	8.8	10.4	11.2	8.4	8.3	5.5	8.7
Traditional healer	6.1	3.6	4.7	3.9	5.0	11.7	7.5
Pharmacy	2.2	3.0	0.6	0.6	5.1	0.6	3.5
Barangay health worker	3.3	1.8	1.2	0.6	7.6	3.1	5.2
Did not go	42.7	43.3	45.0	49.4	35.7	42.9	40.1
Respondents	1200	200	200	200	200	200	200

(Respondents were asked for up to three sources, so percents in each column add up to more than 100%.)

Respondents were also asked if they had ever received advice or help from specific sources: private hospitals or clinics, health workers, traditional healers, and pharmacies. Overall, more had gone to private clinics or hospitals than to any other source, with health workers the next most important source and traditional healers and pharmacies less important--reported by fewer than 25 percent of respondents. This pattern was strongest in urban areas, where from 64 percent to 75 percent of the respondents reported having visited private clinics or hospitals, and 25 percent to 49 percent reported contact with health workers for diarrhea. In rural areas, having ever visited a health worker was reported more frequently and private clinics or hospitals less frequently than in urban areas, although contact with each type of source was reported by at least 50 percent of respondents (see Table 9).

Table 9

Percent of mothers reporting ever having contact  
with various sources of treatment/advice

	Total	Urban			Rural		
		6	7	10	6	7	10*
Private clinic/ hospital	64.7	75.7	72.8	64.0	50.0	69.7	54.8
Health worker	51.6	25.0	47.5	48.5	50.7	64.5	71.6
Hilot	15.0	13.2	11.7	16.9	21.4	13.2	14.2
Herbolario	13.2	13.9	9.9	7.4	19.3	18.4	10.3
Pharmacy	16.3	20.1	13.6	20.6	15.0	3.9	25.2

\*Health regions

Some of the differences observed for contact with health workers probably reflects a lack of health workers--or at least of active health workers--in urban areas. In response to the question "Do you have any health workers in your community?" 38 percent of the respondents in urban areas of Region 6 and 18 percent of those in rural areas said "no", in contrast to 12 percent in urban Region 10 and less than five percent in both urban and rural areas of Region 7 and rural Region 10.

**What Mass Media Channels Would be Best to Reach Mothers?**

The respondents' access to media is summarized in Table 10. More than two-thirds of the mothers listened to the radio at least once a week, making that the best means of reaching the target audience. TV, which probably reached slightly more than half the target audience in urban areas of Regions 6 and 7, and about a third in urban Region 10, is clearly a secondary medium. The high proportions of mothers reading newspapers, comics, or magazines less than once a month suggests that print media are not good channels.

Table 10

Media characteristics

	Total	Urban			Rural		
		6	7	10	6	7	10
Own TV	16.5	34.0	26.5	19.0	8.5	9.0	2.0
Watch TV							
In past week	32.2	59.0	55.0	32.5	20.5	16.5	9.5
Not at all	54.8	31.5	25.0	53.5	68.5	68.0	82.0
Own radio	53.0	59.0	68.5	56.0	51.5	39.5	43.5
Listen to radio							
In past week	67.9	73.0	84.5	65.5	62.0	68.0	54.5
Not at all	25.0	24.5	11.0	22.0	31.5	27.5	33.5
Read paper							
Nearly everyday	7.5	24.4	33.3	27.8	3.5	.5	2.5
< Once/month	72.6	60.0	48.5	68.0	80.0	90.0	89.0
Read comics							
Nearly everyday	12.5	22.0	9.5	11.5	20.0	4.0	8.0
< Once/month	65.8	51.5	62.5	63.5	58.0	80.5	78.5
Read magazines							
Once/wk or more	10.0	14.5	10.5	19.0	7.5	2.5	6.0
< Once/month	77.2	69.5	62.5	69.0	84.0	90.5	88.0

CONCLUSIONS

Based on the results of this survey, some recommendations can be made about how to reach mothers, what messages to use in promoting awareness of dehydration, ancillary groups to target, and factors besides rehydration fluids that will be important in diarrhea control.

First, it is critical that mothers be informed directly about Oresol. Respondents sought advice outside the home for only 35 percent of cases occurring in the past month. Even for children who were perceived as very sick, outside advice was sought for only 75 percent of cases. Radio will be the best medium for reaching this target audience, while TV should clearly be secondary.

When mothers sought advice, they were more likely to go to private physicians, clinics, and hospitals than government health centers or hospitals. Unfortunately, the private sources were much less likely to provide Oresol. Thus serious consideration should be given to involving the private medical sector in the diarrhea campaigns. In contrast, pharmacies were not a significant source of treatment or advice about diarrhea; thus while they will be important as distribution points, they should not be seriously considered as places where women can learn about Oresol.

Messages about dehydration will be more comprehensible if they emphasize signs that mothers already recognize and view as indications of severe diarrhea. "Weakness," in particular, should be seriously considered as a cue for treatment. Behavioral signs--weakness, loss of appetite, and playing less or not at all--are more commonly reported and more sensitive indicators of severity than the classic physical signs. In response to a question about signs of serious diarrhea, "sunken eyes" (mentioned by only 27 percent) was the only classic physical sign of dehydration mentioned by more than five percent of respondents. An additional problem is that this sign tends to appear late in the course of dehydration, when the condition may be difficult to reverse without large amounts of rehydration solution. An advantage of using weakness as an indicator is that it appears relatively early, and mothers get immediate results when they use Oresol.

In addition to emphasizing rehydration, an important focus that can be considered is continuing breastfeeding during diarrhea. About 30 percent of the respondents who were breastfeeding their children reported stopping feeding during the diarrhea episode.