Mother's Knowledge, Attitude and Practice toward Safe Water Usage in Baleendah, Bandung District, West Java from September–October 2012

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Abstract

Background: Poor environmental conditions contribute to the high incidence of diarrhea, most of those caused by unsecure water and poor health knowledge. This study was conducted to evaluate the mother's knowledge, attitude, and practice toward safe water usage in Baleendah, Bandung.
Methods: A cross sectional descriptive study was conducted in Baleendah during September–October 2012, participated by 210 mothers with 12–59 months children, and using rapid survey method. This study used a questionnaire to measure the three domains, which consists of 8 questions of knowledge, 10 questions of attitudes, 16 questions of practice, and 7 questions of diarrhea. The collected data were analyzed and presented in table.
Results: As much as 168 (80%) of mothers were in moderate knowledge status, 126 (60%) of mothers were in moderate attitude status. Practically, 127 (54.7%) of mothers used water from borehole/tube well. Most of the mothers (54.6%) use drinking water from refillable water store.
Conclusions: Most mothers who participated have varied moderate knowledge and attitude status, and practice toward safe water usage. [**AMJ**.2015;2(3):375–81]

Keywords: Attitude, knowledge, practices, safe water usage

Introduction

Diarrhea is still one of the health problems in developing countries, such as in Indonesia. An outbreak of diarrhea occurred in 11 provinces in 2010, including West Java.[1] Some districts have tendency of high incidence of diarrhea, such as Sukabumi, Garut, Bandung, and Kuningan. In Baleendah, Bandung, more than eight thousand cases of diarrhea occur in 2011.[2] According to a preliminary survey in 2011 there were 224,323 people living in Baleendah. Based on the data obtained from Jelekong Public Health Centre in Baleendah in 2011, the incidence of diarrhea in children aged 12–59 months, were about 100 cases of diarrhea every month.[3] Diarrhea was commonly found in salmonellosis, shigellosis, amoebiasis, protozoal and viral intestinal diseases.

Poor environmental conditions contribute to the high incidence of diarrhea. About 88% of diarrhea cases in the world are caused by unsecured water use, lack of sanitation and lack of health knowledge.[4,5] Globally, improving water sanitation, hygiene and medical knowledge prevent at least 9.1% of disability, or 6.3% of mortality.[6] The problem related to drinking water, hygiene and sanitation still being the main issues. The results of the WHO study in 2007, the incidence of diarrhea decreased 39% with the behavior management of drinking water in the household, 32% by improving people's access to sanitary excreta, and 45% with the behavior of washing hands with soap, while integrating all factors, the incidence of diarrhea decreased by 94% .[7]

In society, health problems are determined by two factors: behavioral factors and non-behavioral factors (social, political, economic, etc.). Behavioral factors are developed into knowledge, attitude and practice. Health behavior also refers to knowledge, attitude and practice.

Many Indonesians use water from the

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Table 1 Characteristics of Mothers and Children in Baleendah District

Characteristics	Frequency	Percentage (%)
Mother's Characteristic		
Family income per month		
< Rp. 1.223.800,00	127	60.5
>= Rp. 1.223.800,00	83	39.5
Education Level		
Elementary School (unfinished)	1	0.5
Graduated from Elementary School	47	22.4
Graduated from Junior High School	92	43.8
Graduated from Senior High School	63	30.0
Graduated from College	7	3.3
Father's occupation		
Labors	82	39.0
Farmer	1	0.5
Merchants street market	3	1.4
Entrepreneurs	65	31.0
Civil Servants	5	2.4
Private Employees	33	15.7
TNI/POLRI	2	1.0
Others	19	9.0
Child's Characteristics		
Sex		
Male	113	53.8
Female	97	46.2
Age		
12–23 months	97	46.2
24–35 months	50	23.8
36–47 months	37	17.6
48–59 months	26	12.4

river for their daily needs. Citarum River is the longest river in West Java and about 25 million people from nine suburbs and three cities rely on this river while about 15 million people live on the bank of this river. Citarum River is still inflood regularly every rainy season. Baleendah is geographically located in Bandung. This region is often flooded when the rainy season arrives, since two major rivers namely Citarum and Cisangkuy River cross in Baleendah.

So far, there are no studies on the relationship of mother's knowledge, attitudes and practices toward safe water usage with the incidence of diarrhea in children in Baleendah, Bandung. Therefore, this study concerned about mother's knowledge, attitudes and practices toward safe water usage and the incidence of diarrhea in children in Baleendah, Bandung.

Methods

A cross sectional descriptive study was carried out during the period of September–October 2012 on 210 mothers with 12–59 months

Table 2 Mother's Knowledge toward Safe Water Usage

Level of knowledge	Frequency (N)	Percentage (%)
Good	19	9
Moderate	168	80
Poor	23	11

children in Baleendah, Bandung. The study was approved by the Health Research Ethics Committee of Faculty of Medicine Univeristas Padjadjaran, Bandung.

The rapid survey method prescribed minimum of 30 clusters with 7 subjects taken from each cluster.[8] The clusters in this study were Neighborhood Associations (RT) in the District of Baleendah. From each Neighborhood Association (RT), was selected randomly 7 houses that have children (simple random sampling). This study was conducted by first selecting a conspicuous place in the cluster, such as stalls or mosque as early benchmarks and then apply a nearby house system. Researchers assumed one house is occupied by one family which only has one child, ideally after the data retrieval will be obtained from 210 children. If there is one house occupied by more than one family and one family has more than one child, only 1 child with the youngest age in the family becomes the subject of research. Interviews were conducted in a cluster to get the 7 respondents who fit the criteria.

This study used a questionnaire to measure the three domains, which consists of 8 questions of knowledge, 10 questions of attitudes, 16 questions of practice, and 7 questions of diarrhea.

Results

The most of the subjects had a low family income and graduated from junior high school (Table 1) and mostly had moderate level of knowledge toward safe water usage (Table 2).

Table 3 showed that some respondents already knew that they should not use Citarum water for drinking, bathing, washing clothes, and washing dishes because it is polluted, and the water should not be disposed of large and small household waste in the river due to

Table 3 Mother's Attitudes toward Safe Water Usage

No	Characteristic	Frequency				Total
		Strongly Agree	Agree	Disagree	Strongly Disagree	
1	Citarum river water potable.	0	3	122	85	210
2	Citarum river water can be used to wash clothes	0	16	141	53	210
3	Defecating and urinating can be done on river	1	62	114	33	210
4	Household waste can be disposed on river	0	12	130	68	210
5	Water consumed should be clear	60	149	1	0	210
6	Before consumption, water should be boiled	94	115	1	0	210
7	Drinking water stored in closed storage	56	154	0	0	210
8	Up to 6 months, baby should only be given breast milk	82	122	6	0	210
9	Milk bottles should be washed with soap and clean running water before used	62	124	24	0	210
10	Milk bottles should be boiled with boiling water before used	85	123	2	0	210

Table 4 Mother's Practices toward Safe Water Usage

Characteristics	Frequency	Percentages(%)
Type of Water Source		
Tap water/PAM	15	6.5
Tap water retail / buying	11	4.8
Borehole/tube well	127	54.7
Dug well	75	32.3
Spring	3	1.3
Rainwater	1	0.4
Ownership of water resources		
Personal	140	66.7
Public	70	33.3
Water resource availability		
Always available	151	71.9
Difficult in dry season	59	28.1
Type of drinking water sources		
Bottled water	19	7.3
water from refreshment stand	141	54.6
Tap water/PAM	11	4.2
Tap water retail / buying	1	0.4
Borehole/tube well	47	18.2
Dug well	35	13.7
Spring	4	1.6
Location of drinking water sources		
Indoor	141	67.1
Outdoor	69	32.9
Physical quality of drinking water		
Cloudy	4	1.9
Colored	10	4.7
Smell	3	1.4
Good	195	92.0
Drinking water treatment methods		
Boiled	156	48.9
UV	136	42.6
Filtered	25	7.8
Without treatment	2	0.6
Water Shelter		
Dispenser	113	42.5
Pot/kettle/thermos/jerry	128	48.1
Pitcher	5	1.9
Bucket/covered pot	13	4.9
Others	7	2.6

water pollution can aggravate. Most mothers (47.6%) knew that the source of water for daily needs can come from rain water, surface water, and groundwater. Two mothers (1%) did not know that rain water, surface water, and ground water is the source of water that can be used for everyday needs.

Most of the mothers (94.8%) knew that the water was turbid, colorless, tasteless, foaming, and because of the smell it could not be used as drinking water sources. Most mothers knew that there are other ways besides drinking water by boiling water, by irradiation with ultraviolet light, giving chlorine, and filtering.

Based on the data obtained, 187 mothers (89%) knew that regularly mopping the floor in the house is one way to prevent diarrhea in young children, while 23 mothers (11%) did not know that mopping the floor can prevent diarrhea.

Mother's knowledge about breastfeeding for the first 6 months of life in infants is actually good. Based on the data obtained, the 203 mothers (96.7%) knew that until the age of 6 months a baby should only be given breast milk. Prior to use the milk bottle should be washed with soap and cleaned by running water and boiled. Most of mothers (83.3%) knew how to use a milk bottle properly.

Based on the data obtained, 45 mothers (21.5%) had a good attitude in this category, most of the mothers with moderate levels of attitude in this category amounted to 126 people (60%), whereas women who belong to the poor category were more than 39 people (18.5%).

None of the mothers used water from Citarum River. There were some mothers (4.8%) who still threw garbage into Citarum River. Mostly, disposal drains in the house flowed into Citarum River (69%). Based on the data obtained from the field about the practice of mothers regarding water use of 210 respondents (Table 4).

Discussions

In general, the mothers have realized about using clean water. This study found that subjects had a moderate knowledge (80%). A research about using river water in Ulu Pekon Krui and Pekon Laay West Lampung[9], shows the distribution of knowledge about the use of water good categories (30.6%), moderate category (16.3%), and poor category (53.1%). The difference in the level of knowledge in these two areas can be influenced by education level, hereditary habits and length of stay in the riverbank.

In general, the level of maternal attitudes towards safe water usage was moderate. It is proven from the results of research showing that the average rate of the respondents attitude were in the moderate category (60%). Most mothers agree the water used for daily needs, especially for drinking should be clean. Attitude is a reflection of various psychiatric symptoms such as desires, interests, knowledge, emotions, motivation, and willing.[10] Based on the research conducted using river water in Ulu Pekon Krui and Pekon Laay West Lampung[9], it shows the distribution of attitudes on the use of water good category (28.5%), moderate category (37%), and poor category (34.5%). Human attitude or a society of health is determined by knowledge, beliefs, and traditions of the individual.

Based on this study, there were 127 mothers (54.7%) who used water from borehole/tube well for daily needs. Water from borehole/tube well is known as ground water. Ground water comes from rain water which had absorption and filtration into the soil. Ground water is usually free of germs and contains substances mineral.[11] Based on data from Basic Health Survey (*Riset Kesehatan Dasar*, RISKESDAS) 2010, currently Indonesia has some clean water that can be classified into a number of sources, including tap water (19.5%), protected dug wells (27.9%), unprotected dug wells (10.2%), boreholes/tube well (22.2%) and the river/lake/irrigation (4.9%).[12]

Location of water sources should also be considered whether being around the house or outside the house. Based on the data obtained, the majority of drinking water is inside the house (67.1%). Based on data from RISKESDAS 2010, it shows that approximately 40% of contaminated water sources are unprotected. One form of pollution occurs due to seepage of dirty water activity which results sanitation.[12]

Based on this study, there were still many people who used public water sources for their daily needs (33.3%). Based on the observations of the current study, the limitation of many rented houses was comprised by several families who only provide a source of water. Most mothers do not complain about the lack of water because water is always available in every season (71.9%). According to RISKESDAS 2010, most Indonesian people claimed about easy access to clean water (81.7%).[12]

Based on the data obtained, no mother used water from Citarum river. Water river/lake/irrigation is the lowest level seen from the quality of the water, because these sources are

vulnerable contaminated likely condition of the water is below health standards.[12] There are 10 mothers (4.8%) who threw householdgarbage into Citarum river. Mostly, the disposal drains in the house flowed into Citarum River (69%). The disposal of household waste and water waste into Citarum River increased the number of pollution in the river.

Restrictions on source of clean and safe water are free from contamination or germs, free from hazardous substances and toxic chemicals, the water is tasteless and odorless, and can be used to meet household needs, as well as meet the minimum standards set by the WHO or Department of Health RI.[11] Based on the data obtained, the majority of women used drinking water from a water depot (54.6%). While based on data from RISKESDAS 2010 in West Java province, 27.3% of people who use non-piped water is not protected, 11.19% use piped water protected, and 61.59% using non-piped water protected. Drinking water from refreshment stand belongs to the category of non-piped water is not protected.[12] Based on the data obtained, the majority of the physical quality of drinking water is good (92%). The water which is used for drinking should be clear, colorless, odorless, and tasteless.[13]

Based on the data obtained, mostly mothers boiled the water before drink it (48.9%), it was a good way to kill some germs in the water.[11] Most of the mothers use a pot/kettle/thermos/jerry cans as storages of drinking water (48.1%). Good water reservoirs should be closed in order not to be contaminated easily.

Most mothers breastfeed exclusively to their children (81.4%). According to RISKESDAS 2010, exclusive breastfeeding is higher in rural areas than in the town.[12] According to the WHO study in Geneva in 1992, the risk of developing diarrhea was greater in infants who are not breast-fed infants compared with breast-fed exclusively. It also increases the risk of death caused by diarrhea.[14]

Some children are still using a bottle as many as 91 infants (43.3%). According to a research by the WHO in Geneva, the use of this milk bottle facilitates the transmission of germs, because it will not be perfectly cleared.[14] This study shows mothers washed milk bottles with soap and running water before using a bottle of milk (59%). Most mothers boiled the milk bottles using boiling water before using a bottle (64.3%). Washing and boiling the bottle before use is one way to prevent disease transmission.

This study provides the conclusions that the level of knowledge toward safe water usage in Baleendah is moderate (80%),the level attitudes toward safe water usage in Baleendah is moderate (60%). In practice, 127 mothers (54.7%) use for daily needs water from borehole/tube well and most mothers use drinking water from depot water (54.6%). Incidence of diarrhea in children in Baleendah in the past month was 92 cases (43.8%).

There should be another further study about the relationship of mother's knowledge, attitudes, and practices toward safe water usage and incidence of diarrhea in children in Baleendah. Mothers need to be involved in good and safe water usage, because mothers have a very important role in the family.

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