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Provision of Clean Water Facilities with the Insidence of Diarrhea in the Ujung Pandang Baru Health Center Working Area

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ABSTRAK

The quality of fresh water found in several areas varies greatly depending on the geographical conditions of the region, in mountainous areas most of it contains limestone, in lowland or coastal areas generally the total dissolved solids (TDS) exceeds 500 mg/l while according to Minister of Health Decree no. : 416 of 1990 the maximum limit for TDS in clean water is 500 mg/l so this can be a health problem for residents living in the surrounding area. The aim is to determine the relationship between the provision of clean water facilities and the incidence of diarrhea in the work area of the Health Center. This type of research is analytical observational research, namely to determine the factors related to the provision of clean water and the incidence of diarrhea in the Puskesmas Work Area. Based on the results of the analysis using the chi-square formula, it was found that the value of $P = 0.000 < \alpha = 0.05$ so it can be concluded that there is a relationship between water quality conditions from a physical aspect and the incidence of diarrhea in the work area of the Health Center. The conclusion is that there is a relationship between the physical quality of water and the incidence of diarrhea in the work area of the Health Center.

Keywords: Clean Water Facilities, Diarrhea Incidents, Ujung Pandang Baru Health Center

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1. Introduction

Water is one of the most important substances in life after air and other basic needs. Water resources as a basic need need attention and must be maintained so

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that human needs can be met. It is estimated that in 2025 more than 2.5 million people in the world or approximately one third of the world's population will face a shortage of clean water. It is estimated that around 12,000 km2 of the world's water sources are currently polluted and if nothing changes in the next 50 years, the damage to water sources will reach 18,000 km2 (UNESCO, 2010).

Globally, around 19% of deaths are caused by infectious diseases related to water, sanitation and risk factors for hygiene/unhygienic behavior. There are around 3.4 million deaths each year, of which two thirds are caused by diarrhea and lack of access to clean water. (Global Water Supply and Sanitation, 2011).

The behavior of people, especially in lowland areas, has different characteristics from highland and mountain communities. In lowland areas, they always defecate or defecate on the beach so that they can easily clean themselves in the sea after defecating. This has been passed down from generation to generation to posterity. , because of their ignorance of the dangers that threaten their lives and bad habits that can cause diarrhea.

The relationship between disease and geographical conditions shows that there are factors that have an important meaning as causes of the emergence of several environmental-based diseases such as diarrhea, dengue hemorrhagic fever, typhus, malaria, ARI and pulmonary TB. This disease is greatly influenced by several environmental conditions which can trigger the emergence of several diseases such as: temperature, humidity, rainfall, height above sea level, soil conditions and environmental health problems which have dimensions of group, geographic and time variability, so that the impact of environmental components for one group is not necessarily the same as for another group (Kusno Putranto, 2002).

Diarrhea disease is still a public health problem, although in general the morbidity rate is still fluctuating, and diarrhea deaths reported by service facilities and health cadres have decreased, diarrheal disease still often causes quite a lot of outbreaks and even causes death. In 2009, Indonesia recorded 27.25% of diarrhea sufferers per 1000 population (Indonesian Health Profile, 2010).

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Regency/city in South Sulawesi shows the highest diarrhea morbidity rate (36.87-55.13 per 1000 population). Based on the district/city health profile in 2008, diarrhea cases were 209,153 cases, the highest was still in Makassar City (45,929 cases) and the lowest in Enrekang Regency (400 cases). Meanwhile in 2009 there were 226,961 cases, the highest in Makassar City (45,014 cases) and the lowest in Kab. Selayar. (South Sulawesi Health Profile, 2011).

2. Research Method

This type of research is analytical observational research, namely to determine the factors related to the provision of clean water and the incidence of diarrhea in the Puskesmas Work Area. The research design is a cross sectional study which examines the dynamics and observes the relationship to the consequences that occur in the form of disease or certain health conditions/status at the same time (point time approach).

3. Results And Discussions

a. Result

Respondent Characteristics.

Respondent characteristics are the characteristics of the respondent which include age, occupation and education, then the distribution of variables consists of clean water sources, physical water quality and the incidence of diarrhea. The research results are made in tabular form accompanied by an explanation of the table. The table is explained as follows:

1. Respondent Characteristics

   The distribution of respondents according to respondent characteristics can be seen in the following tables:

   a) Age

   Age is the length of life of a respondent which is calculated based on the last birthday and expressed in years. The distribution of respondents according to age can be seen in the following table:

Table 1

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Distribution of respondents based on age in work areas
Ujung Pandang Baru Health Center

Age	n	%
20-30	5	5,2
31-40	32	33,0
41-50	31	32,0
> 50	29	29,9
Amount	97	100

Source: Primary data

Table 1 shows that the distribution of respondents based on age shows that the age with the highest number is between 31-40 years, namely 32 (33.0%) respondents, while the age with the lowest number is between 20-30 years, namely 5 (5.2%) respondents.

b) Work

The distribution of research results obtained based on the respondent's type of work can be seen in the distribution table as follows:

Table 2
Distribution of respondents based on work in work areas
Ujung Pandang Baru Health Center

Work	n	%
Buruh	12	12,4
Tani	67	69,1
Swasta	14	14,4
PNS	4	4,1
Amount	97	100

Sumber : Data primer

Table 2 shows that the distribution of respondents based on the type of work with the highest number is farmer work with 67 (69.1%) respondents, while the lowest number of work is civil servant work with 4 (4.1%) respondents.

c) Education

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The distribution of research results obtained based on the respondent's education level can be seen in the distribution table as follows:

Table 3
Distribution of respondents based on education in work areas
Ujung Pandang Baru Health Center

Education	N	%
No school	13	13,4
elementary school	30	30,9
Junior High School	29	29,9
high school	22	22,7
College	3	3,1
Amount	97	100

Source: Primary data

Table 3 shows that the distribution of respondents based on education has the highest number, namely elementary school education with 30 (30.9%) respondents, while the education with the lowest number is tertiary education with 3 (3.1%) respondents.

d) Univariate Analysis

Based on the variables in this research, it consists of research on water sources and physical water quality.

1) Clean water source

The distribution of research results obtained based on the clean water sources used by respondents can be seen in the distribution table as follows:

Table 4
Distribution of respondents based on water sources in the work area
Ujung Pandang Baru Health Center

Water sources	n	%
Dig Well	12	12,4
Piping	85	87,6
Amount	97	100

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Source: Primary data

Table 4 shows that the distribution of respondents based on the use of water sources shows that piped water sources supplied from mountain springs dominate with 85 (87.6%) respondents, while the use of water sources from dug wells is 12 (12.4%) respondents.

2) Physical quality of water

The distribution of research results obtained based on the physical quality of the water used by respondents can be seen in the distribution table as follows:

Table 5
Distribution of respondents based on physical water quality
in the working area of the Ujung Pandang Baru Health Center

Physical Quality of Water	n	%
Qualify	91	93,8
Not eligible	6	6,2
Amount	97	100

Source: Primary data

Table 5 shows that the distribution of respondents based on the physical quality of the water used is that there are 91 (93.8%) respondents who use water that meets the requirements from a physical aspect, while there are still 6 (6.2%) respondents who use water whose physical condition does not meet the requirements. condition.

This condition provides a great opportunity for health problems to occur in the in the Cenrana Health Center working area, especially in cases of diarrhea.

3) Occurrence of diarrhea

The distribution of research results obtained based on the incidence of diarrhea in the Ujung Pandang Baru Health Center working area can be seen in the distribution table as follows:

Table 6
Distribution of respondents based on diarrhea incidence
in the working area of the Ujung Pandang Baru Health Center

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Occurrence of diarrhea	n	%
Diarrhea	7	7,2
No diarrhea	90	92,8
Amount	97	100

Source: Primary data

Table 6 shows that in the distribution of diarrhea incidents there were 7 (7.2%) respondents who suffered from diarrhea, while 90 (92.8%) respondents did not suffer from diarrhea.

2. Bivariate Analysis

Based on the analysis between independent variables and dependent variables, the analysis is between the relationship between clean water sources and the physical quality of water and the incidence of diarrhea in the working area of the Ujung Pandang Baru Health Center.

a. Analysis of the relationship between clean water sources and the incidence of diarrhea.

The distribution of analysis results between clean water sources and diarrhea incidence can be seen in the following table:

Table 7

Distribution of respondents based on the relationship between clean water sources and the incidence of diarrhea in the work area Ujung Pandang Baru Health Center

Clean Water Source	Diarrhea Occurrence				Total		*P*
	Diarrhea		Diarrhea Not				
	n	%	n	%	n	%	
Dig Well	0	0	12	100	12	100	0,302
Piping	7	8,2	78	91,8	85	100	
Amount	7	7,2	90	92,8	97	100	

Source: Primary data

Table 7 shows that the distribution analysis of the relationship between the use of water sources and the incidence of diarrhea, namely that of the 12 respondents who used clean water sources from dug wells, overall did not suffer from diarrhea, while of the 85 respondents who used piped water sources, there were 7 (8.2%)

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respondents who suffered from diarrhea and there were 78 (91.8%) respondents who did not suffer from diarrhea.

Based on the results of the analysis using the chi-square formula, it was found that the value of P = 0.302 > α = 0.05 so it can be concluded that there is no relationship between the source of clean water and the incidence of diarrhea in the working area of the Ujung Pandang Baru Health Center, meaning that it is the source of water used by The does not have a problem with diarrhea.

b. Analysis of the relationship between the physical quality of water and the incidence of diarrhea.

The distribution of analysis results between the physical quality of water and the incidence of diarrhea can be seen in the following table:

Table 8
Distribution of respondents based on the relationship between quality physical water and the incidence of diarrhea in the work area Ujung Pandang Baru Health Center

Physical Quality of Water	Diarrhea Occurrence				Total		*P*
	Diarrhea		Diarrhea Not				
	n	%	n	%	n	%	
Qualify	2	2,2	89	97,8	91	100	0,000
Not eligible	5	83,3	1	16,7	6	100	
Amount	7	7,2	90	92,8	97	100	

Table 8 shows that the distribution of respondents based on the relationship between the physical quality of water and the incidence of diarrhea shows that of the 91 respondents who use water that meets the requirements from a physical aspect, there are 2 (2.2%) respondents who suffer from diarrhea and there are 89 (97.8%) respondents who did not suffer from diarrhea, while of the 6 respondents who used water that did not meet the requirements from a physical aspect, there were 5

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(83.3%) respondents who suffered from diarrhea, and there was 1 (16.7%) respondent who did not suffer from diarrhea.

Based on the results of the analysis using the chi-square formula, it was found that the value of P = 0.000 < α = 0.05 so it can be concluded that there is a relationship between the condition of water quality from a physical aspect and the incidence of diarrhea in the working area of the Ujung Pandang Baru Health Center, meaning that the condition is getting worse the physical water used by the means the tendency to suffer from diarrhea is greater.

b. Discussion

1. Source of clean water

   A clean water source is a facility that functions as a place to collect water for the community for daily needs, both for washing, cooking and several necessities for human survival.

   The results of this study show that there is no relationship between the water sources used by the community and the incidence of diarrhea in the working area of the Ujung Pandang Baru Community Health Center. This is because even though the community uses water sources from dug wells, a total of 12 (100%) respondents apparently did not suffer from diarrhea because this is due to dug wells in highland areas. In general, people use deep ground water which is far from sources of pollution because they using deep dug wells so that the water in the facility actually comes from the ground and not from surface water and there is very little chance of dirty water seepage into the dug well.

   Bacterial contamination of clean water facilities, especially dug wells, can be influenced by several factors, including the construction of the facility. One of the factors that influences the quality of water in dug well water facilities is the presence of a source of pollution within a distance of less than 10 m from the facility, including the presence of rubbish, standing water, sewage (WC), damaged waste disposal channels and cracks in the floor around the well so that it is very easy for used washing water to seep into the well. In the working area of the

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Cenrana health center, the dug wells used are made with a design that is safe from factors that can cause pollution and in general the sanitary conditions of clean, clean water facilities and how to maintain the dug wells are also of great concern to the community so that maintenance is carried out to the maximum.

2. Physical quality of water

Water is a primary need for every life, especially for humans to fulfill daily life for drinking, cooking, bathing, washing, and many other needs, besides that the human body mostly consists of water, the amount in babies, 80% of body weight, neonates 70 -75% of body weight, toddlers 85% and for adults 55-56% of body weight (Azwar, 1989). Approximately 80% of our body consists of water, so water is a substance that our body really needs (Djaffar, 2000).

If the water consumed by humans does not meet the physical, chemical, biological and radioactive requirements, our bodies will experience balance disorders which ultimately lead to disease. For this reason, the provision of clean water must be carried out in such a way that the elements contained in the water do not exceed the threshold values required by the body or which can cause disease (Daud, 2001).

Based on the relationship between the physical quality of water that meets the requirements and the incidence of diarrhea, there are 2 (2.2%) respondents who suffer from diarrhea and of the 6 respondents who use water that does not meet the requirements from a physical aspect, there are 5 (83.3%) respondents who suffer from diarrhea. . This is because people consume water that comes from springs which are channeled through pipes using pipes and hoses that are old and have a lot of moss attached to them, so it is very likely that the water used is physically contaminated because this can cause a smell.

Another aspect that influences this is that sometimes the water used from springs in the mountains sometimes becomes turbid due to sudden flooding, which can affect the turbidity of the water used by the community. To anticipate if this

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happens, people also consume rainwater as a daily need if the water source from the mountains experiences turbidity.

4. Conclusion

From the results of the research and discussion that have been presented, we can conclude that:

1) There is no relationship between clean water sources and the incidence of diarrhea in the Ujung Pandang Baru Health Center working area so it can be interpreted that the water source is not a factor in the occurrence of diarrhea. The most important thing is how to ensure that the water source is not contaminated by bacteria.
2) There is a relationship between the physical quality of water and the incidence of diarrhea in the working area of the Ujung Pandang Baru Health Center so that it can be interpreted that the incidence of diarrhea really depends on the quality of the water used, both for consumption and for other purposes.

Compliance with ethical standards

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Disclosure of conflict of interest

This research collaboration is a positive thing for all researchers so that conflicts, problems and others are absolutely no problem for all writers.

Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

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