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Research Article

The Sources of Drinkable Water Used and Its Related Diseases among Barangay Capual Residents Omar, Sulu

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ABSTRACT

The goal of this study is to determine the sources of drinking water and identify ailments among the respondents that are related to water consumption. The study was undertaken to ascertain the sources of drinking water used and its impact on health on Capual Island. The research will also determine whether the respondents' water-related illnesses are significantly impacted by their sources of drinking water. Residents of Capual Island will gain knowledge about local sources of drinking water and illnesses associated with water from the study. Male and female respondents from 287 households were polled. Regarding the data analysis and interpretation, a statistician was consulted. Frequency tables were used to present the data. For the study, the researchers utilized a descriptive-predictive research methodology. The entire population of Barangay Capual had been used by the researchers.

The Rural Health Unit-Omar can help communities improve their drinking water by educating them on proper cleaning of their sources of drinking water, installing covers on their deep wells, making sure there are no animals in their water sources, and sanitizing their drinking water. Typhoid fever and diarrhea were the most common water-related diseases among respondents, topping the survey with 84.7% and 85.0%, respectively.

Students pursuing a Bachelor of Science in Nursing degree should provide lectures on waterborne illnesses and inform residents of additional methods for sanitizing their drinking water. It is important to inform the people of Barangay Capual that their homes should have backup water sources. Additionally, according to the experts, filtering and boiling the drinking water before use is important and will lower

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the risk of contracting waterborne illnesses and their fatal consequences. Future researchers may use it as a backbone for further study by taking on other variables that were not tested in this study.

Keywords: *Barangay residents, Related diseases, Sources of drinkable water*

Introduction

For all life on earth, water is one of the most important natural resources. According to new research from the World Health Organization and UNICEF, around 3 in 10 people worldwide—2.1 billion people—lack access to safe drinking water at home, and 6 in 10—4.4 billion people—lack securely managed sanitation. Water availability and quality have always been crucial factors in deciding not only where people might live but also how happy those lives will be. Since humans can get several waterborne diseases as a result of consuming contaminated water, it is imperative that the quality of drinking water is regularly assessed and that public health planners should make all efforts (Narain, 2016).

The highest rates of sickness, which disproportionately affect children under the age of five, are found in areas lacking access to appropriate fresh water supplies and basic sanitation. Waste disposal also contributes to health issues, especially on improper practices of waste disposal among the residents (Aming-Hayudini et al., 2022) Lack of this fundamental requirement also affects workload, safety, education, and equity. While access to safe drinking water and sanitation has been significantly hampered by poverty in many developing countries, clean water access and availability are essential for the long-term growth and development of all communities (World Health Organization, 2012). Drinking water quality is a relative term that connects the makeup of water with the results of both natural and human processes. Drinking water quality declines as a result of leaks and the entry of foreign chemicals into the water delivery system. Dr. Gundo Weiler states for the past few decades, immigration detention has become increasingly used as a way to manage migration flows Over the past few decades, immigration detention

has become increasingly used as a way to manage migration flows, 1 despite international law clearly stating that it should only be used as a last resort^{2–4} and that children should never be detained. 3, 5 As a fundamental human right, health is important for everyone, including refugees and migrants. Immigration detention has negative impacts on physical and mental health and families and communities as a whole. (Weiler et al., 2022), The WHO representative in the Philippines, stated that water is an extremely important resource that we cannot live without. But there are Filipinos who are still being left behind in terms of access to improved water sources, especially in rural communities.

The Philippines is a developing nation with insufficient water supplies. One of the islands in Muslim Mindanao's Bangsamoro Autonomous Region that suffers from a lack of water is Capual Island, Omar, Sulu. Large problems lead to the province's bad health.

The lack of access to clean drinking water is a common issue in rural areas, especially for those who live on Capal Island. This is considered a daily battle for Capal Island residents, and it hurts their health. The only sources of water are deep wells, surface water, and rainwater, according to the researchers' observations. Therefore, if common symptoms like nausea, vomiting, headaches, diarrhea, and chills are not cured by boiling, some people may experience them. The following questions, which aim to determine the sources of water utilized and the health impacts of water used on the residents of Barangay Capual in Omar, are being asked by the researchers as a result of the scenario.

Methods

Descriptive method served as the research design of the study, (Hayudini et al., 2022). A descriptive-predictive research de-

sign was used in this study. Based on the variance of another variable, descriptive-predictive studies make predictions about the variance of one or more variables. There are two types of study variables: independent (predictor) and dependent (outcome). These variables, however, are not altered; rather, they arise naturally (Sousa, Driessnack, et al.). As a result, this method was very helpful in identifying the sources of drinking water and how they affected the residents of Barangay Capual Omar in Sulu.

A self-structured survey questionnaire was the tool used in the investigation (Hayudini et al., 2023). The barangay Capual Island residents of Omar, Sulu, were subjected to a survey to determine their sources of drinking water and their exposure to diseases associated with water health. Part I covers the respondents' demographic information, which includes their name (optional), sex, and address. Part II asks about the respondents' sources of drinking water, and Barangay Capual respondents were asked to respond with a yes or no. Part III asks about diseases associated with drinking water, and respondents are asked to respond with yes or no. In-depth research for this study was done in Barangay Capual Omar, Sulu. A small island called Barangay Capual is located 70 kilometers (km) from Jolo and takes two to three hours to get there. It is part of the municipality of Omar in the Sulu province. Tanduh Gusuh, Kasanyangan, Lablab, Bulaghaw, Storages, C'kulay, Sillangan, Taluktaluk, Kabalian, Sani-Sani, Luklugus, Bitinan, and Duhul Bayah are among the thirteen sitios that make up the barangay. Hadj Jul-Arab Asmawil serves as the barangay's chief.

Residents of Barangay Capual Omar in Sulu participated in the survey. For the year 2021, barangay Capual would have a total population of 7,069 people and an average of 1,109 homes. The overall sample size of the respondents is shown below:

$$287.h = \frac{\frac{z^2 \times p(1-p)}{e^2}}{\left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}$$

$$= 287(\text{Sample size})$$

Convenience sampling was the method of sampling used in this research study. The subjects closest to and available to engage in the research study are used in a convenience sample, a non-probability sampling technique (Crossman, 2019). Due to a lack of resources (money, time, and access), the researchers adopted convenience sampling to preserve the COVID-19 methodology. 287 homes are being used by the researchers from Capual, Omar, and Sulu.

In this study the following procedure was done:

All survey questions were examined by the validators, who gave them ratings of 4, 3, 2, and 1. Highly relevant is denoted by a score of 4 (3.50–4), extremely relevant by a score of 3, somewhat relevant by a score of 2 (1.50–2.49), and not relevant by a score of 1 (1.50–1.49). The questionnaire's content validity index (CVI) was determined to be 0.94 for Part II, which indicates that it is very relevant, and 1 for Part III, which indicates that it is prepared for a reliability test.

The reliability test was administered to ten respondents on August 4, 2022, to students who currently live in Capual and are staying temporarily in a dorm here in Jolo. A statistician interprets the reliability test's outcome. The Cronbach's alpha was 725, and the outcome was considered acceptable.

The barangay captain of Capual, Omar Sulu, has been asked for permission to undertake a study on the sources of drinking water and their impact on the people of Capual Island. From Jolo to Barangay Lahing-Lahing, the trip took 3 hours. From barangay Lahing-Lahing, the researchers rode a ferryboat, also known as a "bangkiro" to Capual, where they stayed for nearly 5 days to collect data. Transporting the researchers to every sitio in barangay Capual presents a significant challenge, and some respondents choose not to participate out of concern that the survey may be meant for COVID-19 patients.

After receiving the barangay captain's approval, the questionnaire was presented to the real respondents, who had ample time to respond. During the data collection, guidance and support were given in accordance with the rules and standards established by the IAFT to

ensure safety during this pandemic. The respondents completed and responded to the appropriate questions before retrieving the questionnaire. And a statistician used it and interpreted it.

Result and Discussion

The actual sex or gender of the 287 respondents is shown in Table 1, where the data reveals that 82.2% of them are female and the remaining 17.7% are male. Women are

significant household contributors because of the caring role they play in society, claim Gomez, Perdiguero, et al. (2019). In poor nations, the task of collecting water is primarily performed by women and young girls. 90% of the women who collect water and wood in Africa are female. Demie, Bekele, et al. (2016) also claim that girls and women spend roughly six hours a day fetching water in their research on how women relate to development efforts.

Table 1. Demographic Profile

Sex	N	Frequency of YES	Percentage of YES
1. Female	287	236	82.2%
2. Male	287	51	17.7%

In order to establish the sources of drinking water among the population of Barangay Capual in Omar, Sulu, Table 2 used frequency and percentage as statistical techniques. Table 2 shows the percentage of actual sources of drinking water used by our respondents. The top 3 sources of drinking water are surface water (83.3%), rainwater (97.9%), and deep wells (100%), in that order. The findings of this study conflict with those of Khitinji's (2015) study, which included surface water from rivers, rains, protected springs, and unprotected springs as sources. On average, 18.9% of the families reported using protected springs as their additional source of water. These originated in three distinct wards: 13.3%.

Rainwater was indicated by the majority of respondents (58.9% on average) as the

supplementary source of water used by the homes. In each of the three wards where the study was conducted, rainwater was the most accessible alternate source of water. In general, 75.6% of families said they used rainwater for laundry and cooking.

Many people in rural areas or towns rely on natural bodies of water as intake sources for water purification and for daily use, according to Lanfair (2018). These resources typically consist of subterranean aquifers, creeks, streams, rivers, and lakes and can be broadly categorized as surface water or groundwater. Oceans and saltwater seas are now also employed as alternate sources of water for drinking and domestic usage, thanks to recent technical breakthroughs.

Table 2. Sources of Drinking Water

Sources of Drinking water	N	Frequency of YES	Percentage of YES
1. Deep well	287	287	100.0
2. Piped water into dwelling	287	39	13.6
3. Piped water from neighborhood	287	24	8.4
4. Rainwater	287	281	97.9
5. Surface water	287	239	83.3
6. Commercial water	287	36	12.5
7. Others	287		

Table 3 used frequency and percentage as statistical tool in order to identify water

related diseases among the residents of Barangay Capual in Omar, Sulu.

	N	Frequency of YES	Percentage of YES
Ground Water			
1. Cholera	287	88	30.7
2. Diarrhea	287	241	84.0
3. Dysentery	287	35	12.2
4. Typhoid fever	287	243	84.7
5. Hepatitis A	287	7	2.4
6. Ints	287	157	54.7
7. tinal worm			
Surface water			
1. Cholera	287	85	28.7
2. Diarrhea	287	207	72.1
3. Dysentery	287	31	10.8
4. Typhoid fever	287	209	72.8
5. Hepatitis A	287	6	2.1
6. Intstinal worm	287	135	47.0

Table 3 presents the percentage of actual water related diseases among the respondents, the data shows that in ground water, typhoid fever is at 84.7%, followed by diarrhea at 84%, intestinal worm at 54.7%, cholera at 30.7%, dysentery at 12.2%, and lastly hepatitis A at 2.4%. In surface water typhoid fever at 72.8%, followed by diarrhea at 72.1%, intestinal worm at 47.0%, cholera at 29.6%, dysentery at 10.8%, and hepatitis A at 2.1%. In rain water typhoid fever and diarrhea is at 85.0%, intestinal worm at 54.0%, cholera at 30.7%, dysentery at 12.2%, and lastly hepatitis A at 2.1%. The results of the study is similar with the results of the study conducted by Gambo, Yusuf et.al (2018) that 40% of the respondents said that their family members were affected with typhoid fever, about 28% of the respondents said that their family members were affected with cholera; 20% of the respondents said that diarrhea was the most common disease caused through contamination water, while 7% of the respondents said that rashes was one of symbols that affected their family members, and the remaining 5% of the respondents said problems of kidney failure was because of use contaminated water in the study area.

However, in the study conducted by Juneja and Chaudhary (2013), the result was that 20%

of people had symptoms of illnesses including diarrheal, vomiting, headaches, stomach aches, dizziness, fever, etc., but 80% did not. They may have built up immunity to numerous water-borne bacterial and viral infections as a result. The other reason might be that people are ignorant about these symptoms, their significance, and the significance of reporting these symptoms.

Table below is used simple linear regression as statistical tool to discern if sources of drinking water significantly affect water related diseases among the residents of Barangay Capual Omar, Sulu.

Table 4 present the actual result of regression test on the 287 respondents, $P < 0.05$ (.000), this indicates that there is significant effect of sources of drinking water to the water related diseases. Therefore, the null hypothesis stated in the study was rejected.

The results of the study is persistent with the results of the study conducted by Gambo, Yusuf et.al (2018) the chi-square analysis outcome of this study described high significant relations between the contamination of water from sources and people affected by the use of water. Therefore, null hypothesis (H_0) is rejected.

Table 4. Significant effect of sources of drinking water to the water related diseases among the residents of Barangay Capual Omar, Sulu

N	Alpha	pValue	ho1
287	0.05	.000	Rejected

Conclusion

The study ascertained the sources of drinking water used and its effects on health of the Capual Omar, Sulu residence. This study applied quantitative type of research particularly descriptive predictive correlational research method (Pangandaman et al., 2021). Self-structured survey questionnaire was launched to gather relevant data and was validated by expert validators and underwent pilot test to verify its validity. Convenience sampling was taken from two hundred eighty-seven residence of Capual Omar, Sulu (BANTAYAN¹ et al.).

The participants of the study included two hundred eighty-seven residence of Capual Omar, Sulu. Based on the result, deep-well has a higher percentage which is one hundred percent as their source of drinking water. Based on the result, in deep-well the typhoid fever has a higher percentage which is 84.7% in surface water typhoid fever is at 72.8% in rain water typhoid fever and diarrhoea at 85.0%.

Based on the results our two hundred eightyseven respondents, with the alpha less than 0.05, $P = .000$, the result of the study there is significant effect of sources of drinking water to the water related diseases. The results of the study conducted based on the questionnaire survey (Santoso et al., 2023), the sources of drinking water of the respondents the deep-well topped the survey with a one hundred percent. Followed by rain water at ninety-seven point nine percent.

Majority of the related disease of the respondents in deep-well have a typhoid fever with a 84.7%, in rain water have a typhoid fever and diarrhea at 85.0%. This study showed that there is a significant effect of sources of drinking water to the water related diseases, with $P < 0.05$ (.000). Thus the null hypothesis was rejected. A country wide implementation of Republic Act No. 9275, The Philippine Clean Water Act of 2004, aims in protecting the country's water bodies from pollution from land-

based sources (industries and commercial establishments, agriculture and community/household activities). An Implementation of Water Resources Republic Act. 1991 that deals with water supply, sets out general duties for protecting and managing quality and sufficiency of supplies.

The Department of Health must provide technical assistance to the Local Government Unit in Capual Omar, Sulu to comply with the provisions and requirement of the sanitation in drinking water (Hayudini). The Local Government Unit in Omar must implement a plan to prevent waterborne diseases by ensuring a quality of drinking water. Thus, providing a safe drinking water supply for instance, affordable commercial water at barangay Capual Omar, Sulu. The Rural Health Unit-Omar, Sulu should empower communities to improve their drinking water by formulating and giving education on proper cleaning and storing their sources of drinking water by putting cover on their deep-well, making sure there are no animals in their water sources to prevent fecal contamination and sanitizing their drinking water before using. This will reduce illness and death from waterborne diseases, leading to improve quality of health, just like treatment default among patients receiving maintenance medicines (Kasim & Aming-Hayudini, 2022).

Barangay Captain must implement the plan that is created by the local government unit to provide safe potable water within the area of Barangay Capual Omar, Sulu.

The residents of Capual Omar, Sulu must provide alternative way to protect their sources of drinking water like covering, filtering, and boiling before used. The Bachelor of Science in Nursing (BSN) Students should conduct seminars about waterborne diseases and educate people in the communities about alternative way to sanitize their drinking water. These are the possible research agenda in the future: A study on Level of Awareness about Unsafe Drinking Water among the residence of

Capual Omar, Sulu. Research on Incidence of Water Related Diseases among the residence of Omar Municipality. A study on Effects of Community Sanitation Program on the Awareness of Environmental Sustainability in Jolo. A study on Level of Awareness, Perception and Attitude of Nursing students towards water (BANTAYAN¹ et al.).

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References

- Aming-Hayudini, M. A. E., Jaddani, M. Y. T., & Habibun, S. I. (2022). Practices on Waste Disposal and Its Environmental Effects. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(8), 1569-1576. <https://doi.org/https://doi.org/10.11594/ijmaber.03.08.19>
- Bantayan¹, J. N. I., Hayudini, M. A. A., Hussin, B. A., Aming, S. E., & Warid-Sahial, A. P. Teaching Phonemes and Consonant-vowel-Consonant Techniques: it's significance on the reading performance of grade school pupils of tandu bato elementary school.
- Hayudini, M. A. A. Preventive Health Care Measures and Health Promotion Implemented by Public Health Officials in Mainland Sulu.
- Hayudini, M. A. A., Hussin, B. A., Aming, S. E., & Pangandaman, H. K. (2023). Effects and Perceptions of the COVID-19 Pandemic on Graduate School Students. *Kepes*, 21(2), 82-87.
- Hayudini, M. A. E. A., Hussin, B. E. A., Aming, R. E., Abdurahman, J. Q., Abdurahman, A. E. A., & Ynawat, M. B. (2022). Incidence of Dengue Hemorrhagic Fever in the Selected Elementary Schools in Jolo and Its Preventive Measures Applied by Their School Principals, School Teachers, and School Nurses. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(11), 2245-2254.
- Kasim, K. S., & Aming-Hayudini, M. A. E. (2022). Factors Influencing Treatment Default among Direct Observed Treatment Short-Course Enrolled in Pulmonary Tuberculosis. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(9), 1749-1764.
- Narain, J. P. (2016). Public health challenges in India: seizing the opportunities. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, 41(2), 85.
- Pangandaman, H. K., Ortega, M. A., Hayudini, M. A. A., Mirafuentes, J. M., & Adap Jr, D. M. (2021). Family Support and Church Attendance As Predictors of Elderly'S Quality of Life At Southern Mindanao. *The Malaysian Journal of Nursing (MJN)*, 12(3), 8-15.
- Santoso, M. H., Naim, S., Suroso, S., Hayudini, M. A. A., & Shrestha, P. (2023). INFLUENCE OF WORK ENVIRONMENT AND EMPLOYEE COMPETENCE ANALYSIS ON EMPLOYEE PERFORMANCE. *Chanos Chanos*, 21(1), 31-40.
- Weiler, G., Bartovic, J., Ebbesen, B. B., Gottardo, C., & Puthooppambal, S. J. (2022). Improving health in immigration detention and promoting alternatives to detention. *The Lancet*, 399(10338), 1849-1850.