Publisher
Singh Publication
www.singhpublication.com

E-ISSN:2583-0074

Social Science Journal for Advanced Research

2025 Volume 5 Number 4 July

Research Article

Water Pollution

Effect of Water Pollution on Public Health, in Bassin Bleu a small community in the Northwest of Haiti

Guerrier OL[1], Lima W[2*], Gyles P[3]

DOI:10.5281/zenodo.16741871

[1] Omulda Lima Guerrier, MPH RN, Department of Public Health, Haiti.

[2*] Willy Lima, PhD, Department of Leadership and Development, Haitian Union of Seventh-day Adventist Church, Haiti.

[3] Paul Gyles, PhD, Office of Graduate Studies, Northern Caribbean University, Jamaica.

The study attempted to determine the level of water pollution and to examine how Water Pollution affects Public Health in Bassin Bleu, a small community in the northwest of Haiti because Water pollution is a significant problem that requires special attention to deal with the emerging water crisis. This study aims to determine the effect of water pollution on public health in Bassin Bleu. A total of 35 questionnaires were distributed, 20 were collected. The results revealed that the participants are not satisfied with the quality of water provided in their community; they stated sediments, trash, and chemicals contaminate the drinking water. By given the importance of potable water for health, which is essential in providing the best quality of the community, several suggestions are made.

This investigation aimed to determine the level of vulnerability of the inhabitants of Bassin Bleu to the effects of water pollution. Data were collected in the area setting through a questionnaire.

We can realize that none of the participants are satisfied with the quality of water provided in their community. The polluted water has led to the spread of certain dangerous infectious diseases such as diarrhea, dysentery, typhoid, kidney problem in the area. Therefore, it is necessary to make interventions with the participation of the population to bring lasting solutions for the wellbeing of the community.

Keywords: water pollution, public health, water quality, waterborne diseases, drinking water, water

Corresponding Author

Willy Lima, PhD, Department of Leadership and Development, Haitian Union of Seventh-day Adventist Church, Haiti.
Email: lima.willy37@gmail.com

How to Cite this Article

Guerrier OL, Lima W, Gyles P, Effect of Water Pollution on Public Health, in Bassin Bleu a small community in the Northwest of Haiti. Soc Sci J Adv Res. 2025;5(4):79-89.
Available From
https://ssjar.singhpublication.com/index.php/ojs/article/view/276

To Browse

Manuscript Received	Review Round 1	Review Round 2	Review Round 3	Accepted
2025-06-14	2025-07-02			2025-07-22

Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
None	Nil	Yes	2.61	

1. Introduction

The research examined the impact of Water Pollution on Public health in Bassin Bleu, a small community in the Northwest of Haiti. This chapter will cover the study's background, where it will try to elaborate more on the historical, conceptual, and contextual perspective of the study. The chapter will also look at the problem statement, purpose, objectives, research questions, and research hypothesis. The chapter concludes by looking at the scope and significance of the study.

Background

Water is one of the most important things on earth. Every living thing needs water for its survival. Without water, plants, animals, everything would perish. Our bodies are made up of about 75% water. In the last century, the availability and quality of surface or ground waters have been changed, mainly due to urbanization, industrialization.

The researcher chose to do this study in this area because the researcher notices serious water problems in the area. The inhabitants in the area buy water for the usual services or conserve rainwater. Some people drink the national water; others buy gallons of water treats to drink. The Bassin Bleu inhabitants have the water of the city once per week; sometimes, they can pass two weeks without water. However, water is a unique resource natural; in this sense; it can be renewed but not replaced. We have many substitutes for different energy sources and most raw materials, but there is no substitute for water. Once the part or degraded due to excessive use or pollution, another element cannot be replaced. (Pierre Louis et Al., 2010).

Even in areas rich in water, if it is polluted locally and there is no economically viable alternative, water is, de facto, inaccessible. More than one billion people on the planet have limited access to safe water sources. About two million individuals die each year from diarrhea caused by diseases infectious waterborne; approximately 70% (1.4 million) of them are children (World Program for Water Resources Assessment, 2009).

Countries worldwide are concerned with the effects of unclean drinking water because waterborne diseases are a significant cause of morbidity and mortality (c.f. Clasen et al. 2007).

Clean drinking water is essential for overall health and plays a substantial role in infant and child health and survival (Anderson et al. 2002; Fewtrell et al. 2005).

Contaminated water and poor sanitation are linked to the transmission of diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid, and polio (WHO, 2019). Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production, or recreational purposes (WHO, 2019). Nearly 1,000 children under age 5 die every day from diarrhea caused by contaminated water (World Vision, 2020). Though previous studies suggest that consuming rainwater does not pose a large risk for contracting gastrointestinal illness (Dean et al., 2012).

The proceeding ones from different waste sites demonstrate significant damage and colossal negligence to the environment and the high risk it poses to the public, which depends on survival. These open landfills of solid and liquid waste, including human and animal daily wastes, impact the environment and the ecological systems surrounding all significant towns and cities in the entire city. Even though the city is not heavily industrialized, the uncontrolled municipal and biomedical wastes are scattered everywhere, and every space is available. These wastes are often directly washed or flooded into the rivers and deep into the local drinking water. Most people and their livestock drink from hand-dig, shallow water wells or directly from the rivers, and other water catchments, especially during the rainy seasons. There are no practical environmental assessments regarding whether the potential toxic exposure from these open waste sites finds their ways into the public food chain and the breathing air.

Statement of the Problem

Water in its fluid form is an essential element that makes possible the life of all living beings. For most humans and industrial use, the quality of water is as important as its quantity. The water must be permanently free from dissolved salts, plant and animal waste, and bacterial contamination suitable for human consumption. The Bassin Bleu community is growing very rapidly, and populations are increasing exponentially.

As a result, this community faces considerable challenges in the drinking water and sanitation sector: in particular, access to the public service is very low, its quality is questionable, and public institutions remain very weak despite external aid and the government's declared desire to strengthen the sector's institutions, but despite all the problem is not resolved.

In Bassin Bleu, access to drinking water is a daily struggle for most of the population. Most of the population does not have access to drinking water, and more than half of the inhabitants of this place must walk for more than half an hour to get this water because they have city water once a week, and sometimes they can go more than two weeks without city water. These conditions are difficult for the inhabitants of this community. In Bassin Bleu, the water issue is taking hold in a demographic context, characterized by a population that is at the same time dense, poor, malnourished, and educated. In such a social dynamic, water should be seen not only in terms of availability per capita, but also in terms of quality for the different needs and, finally, under that of the economy, i.e., the country's capacity to develop or develop new resources based on the results of technologies already in use by other countries. For several years, Bassin Bleu has been one of the poorest areas of wastewater treatment infrastructure or access to protected sources. The water and sanitation crisis claims many more lives than many disasters. Every year water-borne diseases kill many people, and many more suffer from them. The population must know that cholera is not the only disease to be caught by this route; the list is long. We can cite, for example, typhoid, amebiasis, hepatitis A and E, malaria, cholera. God only knows how many victims in Bassin Bleu who escape this major problem of the potable water. As a professional citizen, we could not remain contemplative in front of this event. The question of water is vital because it concerns life. Indeed, water is not important for nothing; without it, there would be no life on earth. More than half of the human body is made up of water, and all living organisms need it to survive.

A minority of the population receives running water, and almost none of them receives chlorinated water; with all these issues, water pollution on public health in Bassin Bleu is a topic of concern.

Purpose of the Study

The purpose of this study is to investigate the effects of Water pollution on public health in Bassin Bleu, a small community in Northwest Haiti.

This section follows the purpose of the study:
1. To generate new information based on the findings of this study.
2. To bridge the gaps identified in the related studies.
3. To explore the different ways that water pollution will be reduced.

Objectives Questions

General Objective

This study's main objective was to correlate the Water pollution on public health in Bassin Bleu, a small community in Northwest Haiti.

Specific Objectives
1. To determine the level of water pollution in Bassin Bleu.
2. To examine how Water Pollution affect Public Health in Bassin Bleu.

Research Questions

What is the level of vulnerability of the inhabitants of Bassin Bleu to the effects of water pollution?

Hypothesis

The researcher thinks that there is a significance relationship between water pollution and public health in Bassin Bleu.

Scope of the Study

The study carried out on Bassin Bleu. Targeted locations, the entire Bassin Bleu community and its surrounding areas and two communal sections of Bassin Bleu. The goal of this research is the effect of water pollution on the population of Bassin Bleu. The study used a study on the impact of water pollution on the health of the lamp population.

Time Scopes the Study

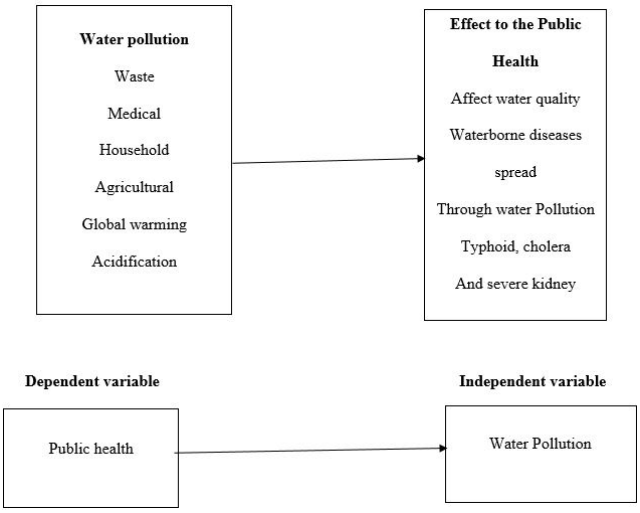
This sturdy taken, three months it is mainly to give the researcher ample time to conduct the study.

Significance of the Study

The study will be beneficial to all stakeholders on the Effect of water pollution on public health.

It will be beneficial for the entire population of Bassin Bleu and its surrounding areas because the Ministry of Public Health and Population will benefit from the results and the conclusion of the study to take appropriate measures to resolve the problem. Local authorities and non-governmental organizations will also benefit from the results and the study's conclusion to use it to improve the success of projects for the well-being of the population. International Organizations will use the study as baseline data for their environmental health projects, and donors to fund and implement other studies and carry out mitigation and adaptation projects and programs on the Effect of water pollution. The government, policymakers, and implementers, political leaders will use the findings to assess the effect of water pollution on the health of the people of Bassin Bleu. The findings of this study will also help academics and future researchers to continue the study.

2. Conceptual Framework



3. Literature Review

Water Pollution

The global water crisis also involves water pollution. For water to be useful for drinking and irrigation, it must not be polluted beyond certain thresholds (Fisher, 2019). In addition to the global waterborne disease crisis, chemical pollution from agriculture, industry, cities, and mining threatens global water quality. Some chemical pollutants have serious and well-known health effects, whereas many others have poorly known long-term health effects. (Fisher, 2019).

Water pollution is a major global problem that requires ongoing evaluation and revision of water resource policy at all levels (from international down to individual aquifers and wells). It has been suggested that it is the leading worldwide cause of deaths and diseases and that it accounts for more than 14,000 people daily. (Balkis, 2012). Many countries in the world are concerned about the effects of unclean water on health. Waterborne diseases are significant causes of morbidity and mortality (Clasen, et al. 2007). According to (Henaut, 2011). Polluted by water can be chemicals and infectious agents.

According to (Akers et al., 2015; Master et al., 2016; Ab Razak et al.,2016). Water contamination can be caused by heavy metals, plumbing materials such as lead-galvanized iron pipes, copper pipes, steel pipes, brass fittings, and faucets. All can be sources of water contamination and can lead to health problems.

Over 2 million people worldwide die each year from diseases such as cholera, typhoid, and dysentery that spread through the use of contaminated or untreated water. (World Program for Water Resources Assessment, 2009).

Disease-causing pathogens commonly associated with faecal contamination of water include Shigella dysenteries, Salmonella typhi, Salmonella Para typhi, Vibrio cholera, Entamoeba histolytica and poliomyelitis virus responsible for causing bacterial dysentery, typhoid fever, paratyphoid fever, cholera, amoebic dysentery, and infantile paralysis, respectively. Also, the consumption of microbe-contaminated seafood, especially shellfish, could lead to outbreaks of food poisoning. (Philander, 2008). Diseases related to contamination of drinking-water constitute a major burden on human health. (WHO,2011). Chemical contamination of water continues to pose a health burden, whether natural in origins such as arsenic and fluoride, or anthropogenic such as nitrate (WHO 2020).

Drinking Water Quality and Public Health

Safe drinking water, sanitation, and hygiene are crucial to human health and well-being. Safe WASH is a prerequisite to health and contributes to livelihoods, school attendance, and dignity and helps create resilient communities living in healthy environments (WHO 2020).

Drinking unsafe water impairs health through illnesses such as diarrhea, and untreated excreta contaminates groundwaters and surface waters used for drinking water, irrigation, bathing, and household purposes (WHO, 2020). All people must have access to safe drinking water to survive. A significant lack of drinking water can cause serious health problems (WHO, 2011).

Although many people have access to safe drinking water, many others do not have access, especially in developing countries. According to (WHO / UNICEF, 2005c) Joint Monitoring Program, there are about 663 million people who do not have access to safe drinking water in the world. According to (Anderson et al., 2002; Fewtrell et al., 2005). Drinking water is necessary for human health and has a crucial role in infants' and children's health and survival.

(WHO, 2005) estimates that 1.8 million people die each year from diarrheal diseases worldwide. People with Immune system failing, such as people living with HIV, are vulnerable to waterborne infections. people who consume unclean water are also vulnerable to waterborne diseases. (Kgalushi, Smits, and Eales (2004). According to (WHO, 2019). there are about 2.1 billion people or 30% of the world's population who, until July 2017, have no access to drinking water. Access to clean water is a fundamental human right, but more than 2.0 billion people worldwide still lack clean water (WHO, 2019).

Ingestion of unsafe drinking water is a leading cause of sickness and death in the developing world (Abraham et al., 2015). In rural areas, only one in two Haitians takes less than thirty minutes to access a drinking water point. A large part of the population must travel great distances to hope to reach a drinking water point. Across the country, only 12% of households have access to drinking water in their place of residence (The World Bank, 2019).

Sometimes the rotten egg smell may be caused by a chemical reaction inside a water heater. This is the case when the smell is detected when only the hot water tap is used. If present in the water supply, hydrogen sulphide can corrode different metal pipes (Tucker,2016). Evidence suggests that improving service levels towards safely managed drinking-water or sanitation, such as regulated piped water or connections to sewers with wastewater treatment, can dramatically improve health by reducing diarrheal disease deaths (WHO 2020).

Increasing access to clean water and improved sanitation is key to preventing waterborne and diarrheal disease. CDC supports the National Directorate of Potable Water and Sanitation (known by its French acronym DINEPA) to improve waterborne disease prevention and build the national water and sanitation workforce's capacity, both at the central and local levels (CDC, 2018).

4. Research Methodology

The purpose of this quantitative research is to explore the level of water pollution at Bassin Bleu, a small community in the Northwest of Haiti. The goal is not to generate a specific theory but to understand how water pollution affects the inhabitants of Bassin Bleu and the level of vulnerability of the inhabitants of this area to the effect of water pollution. The researcher chose a survey design, and data collected using a questionnaire of 35 participants to fill a questionnaire but unfortunately only 20 participants completed the questionnaire. The others refused to fill it out. Since we cannot force them to complete the questionnaire, we were obliged to do the research with the 20 participants who completed the questionnaire.

Study Design

To achieve the objectives, a survey research design using the questionnaire as an instrument applied to measure the level of water pollution and how water pollution affects the Bassin Bleu population's health.

Sampling and Sample Size

A sample size of N=20 participants (4 males and 16 females) was volunteer to take part in this study by completing a questionnaire.

This survey's sample size was calculated as the minimum sample size based on the effect of water pollution on Public Health in Bassin Bleu.

$n0 > Z2\ p\ (1- p) / d2$

where;

Z = 1.96 (0.05 level)

P = known or estimated previous prevalence/proportion

d = margin of error (typically will be designated by researcher up to 5%).

5. Data Collection Strategies

Questionnaires of 19 questions were conducted with 20 residents of Bassin Bleu, and a survey plan was analysed to obtain some information regarding the effect of water pollution on Public Health in Bassin Bleu residencies.

The study aims to achieve fixed objectives. A survey research design using the instrument questionnaire was applied to measure the Vulnerability level of Bassin Bleu residents, the pollution effect of the water, and its consequences on their health.

The questionnaire was divided into three sections. The first section, consisting of a total of five questions, examining demographic data such as gender, age, marital status, educational level, and occupations of participants. The second section, consisting of seven questions on the current status of Water pollution. The third section consists of seven questions examining the level of impact of Water Pollution on Public Health.

Questionnaire

The researcher was developed the questionnaire and be tested by the facilitator of Applied Research, Professor Dr. Paul Gyles, and reviewed by the facilitator before administered for the investigation.

Ethical Issues

The Researcher has an ethical and, often, legal responsibility to protect the information about respondents in a study.

The Researcher gave a consent form to each participant, and the Researcher told them they are free to taking part; feel free to decline at any time. Also, the Researcher reminded them that their confidentiality will always be preserved. The questionnaire is anonymous, and their answers will be coded for transcription in SPSS version 27 and analysis.

6. Data Entry

The researcher does not ask in the questionnaires the names and the address of the participants. Also, the data have been presented not to enable participants to be identified as individuals. Survey participants were assured confidentiality and anonymity using pre-coded questionnaires, which were entered directly into SPSS to prepare the data set for storage.

Each questionnaire was assigned a number and not a name to protect the participants' anonymity and confidentiality.

7. Data Analysis

The data collected from the participants were analysed using SPSS (the Statistical Package for the social sciences) with a significant analysis looking at frequencies to produces frequency tables and to show frequency counts and percentages of the values of individual variables. Also, the descriptive statistic shows the maximum, minimum, mean, and standard deviation of the variables.

8. Results Interpretations and Discussions

The fourth chapter will cover the Results, the interpretation, and the Discussions of the study.

Part One: Demography of the Respondents

Table 2: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	7	35.0	35.0	35.0
	Female	13	65.0	65.0	100.0
	Total	20	100.0	100.0	

Thirty-five (35) Questionnaires were administered over three weeks, twenty (20) were collected. From the data obtained, 35% were male and 65% were female. See Table 1

Table 3: Age

		Frequency	Percent	Valid Percent	Cumulative percent
Valid	20-25 years	1	5.0	5.0	5.0
	26-35 years	5	25.0	25.0	30.0
	over 36-45 years	7	35.0	35.0	65.0
	over 45 years	7	35.0	35.0	100.0
	Total	20	100.0	100.0	

In regard by table 2, 35% were over 36-45 years, 25% were 26-35 years, 35% were over 45 years and only 5% were 20-25 years of age.

Table 4: Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	11	55.0	55.0	55.0
	Single	3	15.0	15.0	70.0
	Divorced	2	10.0	10.0	80.0
	Widowed	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

Considered the table 4, majority of the participants (55%) respondent were married, 15% single, 20% widowed and 10% divorced.

Table 5: Education Level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	7	35.0	35.0	35.0
	University	10	50.0	50.0	85.0
	Others Skill	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

For their education level: most of the participants 50% were university level, 35% were secondary level, while only 15% were others skills level. See table 5

Table 6: Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public Employ	5	25.0	25.0	25.0
	Private Employ	5	25.0	25.0	50.0
	Self - Employ	4	20.0	20.0	70.0
	Other Occupation	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

By this table, 25% were Public employ, 25% were private employ, 30% others occupation and the rest 20% were self-employed. Table 6.

Part Two: Current Status of Water Pollution

Table 7: Knowledge about water pollution					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	15	75.0	75.0	75.0
	No	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

About water pollution, (75%) of the participants respondent they have idea toward water pollution and the rest (25%) have not any idea about water pollution. See table 7.

Table 8: Quality of Water in Your community					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	6	30.0	30.0	30.0
	Fair	10	50.0	50.0	80.0
	Poor	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

By the following table (table 8), 30% of the respondents were replied the water that they drink is good Quality, 50% answered the present quality of water is fair, and 20% of the respondent replied it is poor.

Table 9: Disease Related to Water Pollution					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Cholera	2	10.0	10.0	10.0
	Typhoid	11	55.0	55.0	65.0
	Dysentery	5	25.0	25.0	90.0
	Dengue	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

According by the table 10, 10% of the participants responded cholera is the most common disease related to the water borne disease in Cedar Grove, (55%) were answered it is typhoid (25%) responded Dysentery and, and the only (10%) stated Dengue is the Common Disease of their community.

Table 10: Highest Quality of Water					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	From Wells	6	30.0	30.0	30.0
	Bottled Water	8	40.0	40.0	70.0
	From Water taps	6	30.0	30.0	100.0
	Total	20	100.0	100.0	

The Question about where the water of the Highest Quality is found, (30%) were confirmed water from wells are the Highest Quality, The Most (40%) were said bottled water is the highest quality, while (30%) think tap water is the highest quality. Table 10.

Table 11: Satisfaction with Water Quality					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Could be better	12	60.0	60.0	60.0
	No	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

By this table, (table 11), majority of the participants (60%) responded their satisfaction with the quality of drinking water in the community could be better and 40 % answered non satisfied with the quality of drinking water. Notice that none of the participants are satisfied with the quality of water provided in their community.

Table 12: Quality of Water is important

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	20	100.0	100.0	100.0

By this statement,100% of the participants believe that water is important for the health of the family. Table 12.

Table 13: Kidney Problem in the last 12 months					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	30.0	30.0	30.0
	No	14	70.0	70.0	100.0
	Total	20	100.0	100.0	

According to this statement (70%) of the respondents were confirmed that there is no Kidney Problem in the last 12 months, while the rest (30%) were stated the cases of the kidney problems. Table13.

Part Three: Level of Impact of Water Pollution on Public Health.

Table 14: Type of Water do you prefer					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tap Water	2	10.0	10.0	10.0
	Mineral Water	13	65.0	65.0	75.0
	Water tanker	1	5.0	5.0	80.0
	Other	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

Considered the table about which water do you prefer (10%) answered Tap water,(65%) Were preferred mineral water/Bottled water, (5%) were preferred water from water tankers and (20 %) preferred other. See table 14.

Table 15: Quality of your Drinking Water					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, Good	3	15.0	15.0	15.0
	Average/ Normal	14	70.0	70.0	85.0
	No, Bad	2	10.0	10.0	95.0
	No, very Bad	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

By this statement, (5%) were responded that their quality of water is not very Bad, (10%) were replied no bad, (70%) were answered normal, while (15%) were answered the water they drink is of good quality. Table 15.

Table 16: Biggest Pollution of water in your community					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Too much trash	5	25.0	25.0	25.0
	Toxic chemicals	9	45.0	45.0	70.0
	Excess sediment	5	25.0	25.0	95.0
	Others	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

By this table, (25%) were stated too much trash is the biggest Pollution, (45%) stated toxic Chemicals is the Problem of their community, while (25%) were replied excess sediment is the Biggest pollution and the Rest (5%) stated other pollution problem is concern of their community. See table 16.

Table 17: Routine of cleaning your drinking water container					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-3 times per week	9	45.0	45.0	45.0
	once per week	9	45.0	45.0	90.0
	More than a week	1	5.0	5.0	95.0
	Never until it becomes dirty	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

By the table, (45%) of the respondents answered they cleaned 2-3 times per week, (45%) said they cleaned once per week, (5%) cleaned more than a week and (5%) cleaned until it becomes dirty. Table 17.

Table 18: Water sometimes smells like rotten eggs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	80.0	80.0	80.0
	Sometimes it smells another type	4	20.0	20.0	100.0
	Total	20	100.0	100.0	

Considered table 18, majority of the participants (80%) responded no water does not smell like rotten eggs and (20%) said sometimes the water smells another type.

Table 19: Wastewater is running freely					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	20	100.0	100.0	100.0

About the following table, 100% of the participants answered no, they do not have any wastewater running freely in their community. Table 19.

Table 20: Mean to Deliver Water to your Home					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PVC Pipe	4	20.0	20.0	20.0
	Lead Pipe	8	40.0	40.0	60.0
	Do not know	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

By this table, (40%) of the participant stated lead pipe is the on using to deliver water to their houses, (40%) responded they do not know what is used to deliver water in their houses and (20%) answered PVC pipe. Table 20.

The researcher correlated Kidney disease according to the result obtained in the community with the quality of water to see if there is a relationship between the kidney disease with the quality of the water consumed by the inhabitants of the area.

The tables below show that there is no relation between the kidney disease found in the results of the questionnaire and the quality of the water consumed by the inhabitants of Bassin Bleu. Despite this result, the researcher cannot confirm if there is not really a relation between the kidney disease suffered by some of the inhabitants and the pollution of the water because he had outliers and these outliers can modify the result.

Therefore, further study is needed to verify if the kidney disease suffered by some of the inhabitants of the Basin Bleu is related to the quality of the water they consume.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.476a	.227	.020	.46536

a. Predictors: (Constant), Water sometimes smells like rotten eggs, Cleaning your drinking water container, Biggest Pollution of water in your community, Quality of your Drinking Water

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.952	4	.238	1.098	.393b
	Residual	3.248	15	.217		
	Total	4.200	19			

a. Dependent Variable: Kidney Problem in the last 12 months

b. Predictors: (Constant), Water sometimes smells like rotten eggs, Cleaning your drinking water container, Biggest Pollution of water in your community, Quality of your Drinking Water

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	2.011	.802		2.508	.024	.302	3.720
	Quality of your Drinking Water	-.130	.115	-.267	-1.129	.276	-.375	.115
	Biggest Pollution of water in your communnity	.163	.128	.296	1.278	.221	-.109	.436
	Cleaning your drinking water container	.075	.137	.128	.545	.593	-.218	.367
	Water some times smells like rotten eggs	-.218	.261	-.190	-.836	.416	-.774	.338

a. Dependent Variable: Kidney Problem in the last 12 months

9. Discussion

Water pollution is defined by the fact that natural water bodies are contaminated with microbial chemical, physical, radioactive, or pathogenic substances. Unfavorable deterioration in water quality can cause large-scale disease and death. Over 2 million people worldwide die each year from diseases such as cholera, typhoid, and dysentery that spread through the use of contaminated or untreated water. (World Program for Water Resources Assessment, 2009).

Drinking-Water Preferences may vary by community, Cultural background, taste, costs, health benefits, and Environmental concerns and depending on the water quality. In the context of this community, the preference goes to the mineral water, the population believed could be better than any other bottle or community water they are provided.

The quality of drinking water is necessary for the protection of public health. Water is essential for life, and an adequate supply (adequate, safe) must be accessible to all. Improving access to clean water can be reduced by the prevalence of water-related mortality rates worldwide.

Access to clean water is a basic human right, but more than 2.0 billion people worldwide still lack access to clean water (WHO, 2019). It represents more than two-thirds of the weight of the human body, and it is essential to the life of humanity. The body cannot function without it, just as a car cannot run without gas and oil. In fact, all the cellular and organic functions formed throughout our anatomy and physiology depend on water for their functioning. Like all other vital organs in the human body, the kidney is one of the most important. Like all internal organs, it can be affected by some of the chemicals and heavy metals found in water and air. Many new cases of kidney cancer are reported worldwide each year, and many people suffer from kidney disease worldwide in various forms and kill large numbers of people. The causes of kidney cancer, like most types of cancer, are common and diverse. However, lately, the disease has been connected to certain forms of pollution of drinking water. These include arsenic and radon.

Drinking water is clean water without germs for health. In recent times, consumers have increasingly preferred bottled water to tap/city water. One of the reasons is due to the convenience of being able to transport bottled water and the concern of the population with regard to the quality of city water that is given once a week with that said.

Quality drinking water is essential for the health and well-being of the community.

Water pollution occurs due to contamination of the water by chemicals and other substances harmful to health and can cause serious health problems.

It is essential to clean the sediments and disinfect the water storage tanks at least once a week, even if the water delivered by pipeline or tanker has been treated, to ensure the health of the family. importance of water for family health.

Implications

Depending on the literature, drinking water can cause much damage to the human body.

The participants of this survey mention that they have not satisfied the quality of drinking water in their community, therefore, those responsible must investigate the quality of water to address the problem of portability of the water especially there are people in the community who suffer from kidney disease, for this, follow-ups must be done to be able to better information about the cause of this disease.

It is necessary to dress to organize sessions of education for the inhabitants of the community on the conservation of water because the contamination can be due to the lousy conservation of water.

10. Conclusion and Recommendation

Water pollution is a global problem, and the global community is facing the worst results of polluted water. The primary sources of water pollution are discharges of household and agricultural waste, population growth, excessive use of pesticides, and fertilizers, and urbanization. Bacterial, viral, and parasitic diseases spread in polluted waters and affect human health.

The goal of this research was to get information on the effects of water pollution on the health of the people of Bassin Bleu. Here are the research questions that we were looking for the answers, and a sample of 20 participants participated in this survey.

In relation to our first objective, we can realize that none of the participants are satisfied with the quality of water provided in their community. Some people think that water is contaminated with sediments, trash, and chemicals.

Considering our second objective, from Table 13, which corresponds to renal disease since there are cases of kidney disease in the community, investigations must be carried out to identify if this disease is linked to drinking water.

As Recommendation:
1. water managers must ensure that the means of water distribution are safe.
2. Education and awareness programs should be organized to combat water pollution.
3. Education sessions should also be held on water conservation because drinking water can be contaminated by poor conservation.
4. It is therefore suggested that further in-depth studies could be undertaken to draw general conclusions on water pollution and the health of the population.

References

1. Ab Razak, N. H., Praveena, S. M., Aris, A. Z., & Hashim, Z. (2016). *Quality of Kelantan drinking water and knowledge, attitude, and practice among the population of Pasir Mas*. Malaysia. Public health References.

2. Abraham, J. P., Plourde, B. D., & Minkowycz, W. J. (2015). Continuous flow solar thermal pasteurization of drinking water: methods, devices, microbiology, and analysis. *Renewable Energy, 81*, 795-803. Clean Water

3. Akers, D. B., MacCarthy, M. F., Cunningham, J. A., Annis, J., & Mihelcic, J. R. (2015). Lead (Pb) Contamination of self-supply groundwater systems in coastal madagascar and predictions of blood lead levels in exposed children. *Environmental Science & Technology*.

4. Anderson, B. A., Romani, J. H., Phillips, H. E., & van Zyl, J. A. (2002). Environment, access to health care, and other factors affecting infant and child survival among the African and Coloured populations of South Africa, 1989-94. *Population and Environment*.

5. Balkis, N. (2012). *Water pollution*.

6. Control for Disease Control and Prevention. (2018). *Increasing access to improved water and sanitation*.

7. Clasen, T., Schmidt,W.P., Rabie,T., & Roberts,I.S. C. (2007). *Interventions to improve water quality for preventing diarrhea: Systematic review and meta-analysis*.

8. Colford, John M., Jr. (2005). Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis. *The Lancet Infectious Diseases*.

9. Dean, J., & Hunter, P. R. (2012). Risk of gastrointestinal illness associated with the consumption of rainwater: a systematic review. *Environmental Science & Technology, 46*(5), 2501-2507.

10. Fewtrell, Lorna, Kaufmann, Rachel B., Kay, David, Enanoria, Wayne, Haller, Laurence, & Henaut, A. (2011). *Air and water pollution*.

11. Fisher, R.M. (2019). *Environmental biology*.

12. Kgalushi, S., & Eales, K. (2004). *Informal settlements: A perpetual challenge*.

13. Masters, S., Welter, G. J., & Edwards, M. (2016). Seasonal variations in lead release to potable water. *Environmental Science & Technology*.

14. Mehtab, H., Muhammad, F., Malik, A. J, Sidra A., Nayab, A., Sharon, Z.,. & Jaweria, H. (2017). *Water Pollution and Human Health*.

15. Philander, S.G. (2008). *Encyclopdia of global warning and climate change*.

16. Pierre Louis, K., Belvaux, E., Coates, D., Blumenfeld, S., Lu, C., Grekin, J., Nooman, K., Mooney, C.H., & Khara, E. (2010). *Good practice guides, drinking water, biodiversity and development*.

17. Tucker, R. (2016). *Causes of 5 common taste and odor water issues*.

18. World Program for Water Resources Assessment. (2009).

19. WHO. (2011). *Guidelines for drinking -water quality*. (4th ed.).

20. WHO/UNICEF. (2005c). *Water, sanitation and hygiene*.

21. WHO. (2019). *Joint Monitoring Program (JMP) report*.

22. WHO. (2019). *Drinking- Water*.

23. WHO. (2020). *Water sanitation, and hygiene (WASH)*.

24. World Bank. (2019). *Haiti faced with the challenge of access to drinking water*.