CONDITION OF DRINKING WATER IN KALARI, CHAUTARA AND DHALPA-5, KRITIPUR, A COMPARATIVE CASE STUDY REPORT

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ABSTRACT

Introduction: Access to safe drinking water is a critical public health concern in Nepal, where both rural and urban communities face challenges in water quality and distribution. In rural areas like Kalari, Chautara, natural water sources are often impacted by pollution from human and livestock activities, while in urban areas such as Dhalpa-5, Kritipur, rapid urbanization and aging infrastructure contribute to water scarcity and potential contamination. Limited access to safe water increases the risk of waterborne diseases, with contaminants like bacteria, pathogens, and sediments affecting community health. Despite government initiatives and localized efforts to provide clean drinking water, infrastructural constraints and environmental challenges persist. This study provides a comparative assessment of the drinking water conditions in Kalari and Dhalpa, focusing on water source reliability, distribution frequency, treatment practices, and health impacts on the local population.

Methods: A mixed-method approach was used, incorporating both quantitative and qualitative data collection. Surveys and interviews were conducted with 35 households from each area to assess water source, consumption patterns, and satisfaction levels. Secondary data from governmental reports supplemented the findings.

Results: In Kalari, most households receive water twice daily from government or community sources, whereas Dhalpa relies on government supply with limited distribution, sometimes supplemented by bottled or tanker water. A higher percentage of residents in Kalari use untreated tap water directly, whereas more Dhalpa residents use filtration methods. Health concerns were slightly higher in Dhalpa, with a few respondents reporting mild gastrointestinal issues from unfiltered tap water.

Conclusion: While both areas benefit from drinking water facilities, water security is limited by supply frequency and infrastructure. The study highlights the need for regular water treatment and increased awareness on safe water handling to reduce health risks.

Keywords: *Drinking water quality, water supply, rural-urban comparison, water safety, Nepal*

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INTRODUCTION

Drinking water is water that is used in drink or food preparation; potable water is water that is safe to be used as drinking water. The amount of drinking water required to maintain good health varies, and depends on physical activity level, age, health-related issues, and environmental conditions (Djekic & Tomasevic, 2022). Water, a substance composed of the chemical element's hydrogen and oxygen and existing in gaseous, liquid, and solid states (Chakraborty, 2021). It is one of the most plentiful and essential of compounds. A tasteless and odorless liquid at room temperature, it has the important ability to dissolve many other substances. Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes (Bhagwat, 2019). Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and contribute greatly to poverty reduction (Cosgrove & Loucks, 2015). Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production, or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and contribute greatly to poverty reduction (Ahmed et al., 2022).

In 2010, the UN General Assembly explicitly recognized the human right to water and sanitation. Everyone has the right to sufficient, continuous, safe, acceptable, physically accessible and affordable water for personal and domestic use (Salman, 2014). Water is the most important matter of life, getting safe drinking water is considered as aright essential to all humans. Although the necessity of water for the welfare of humans and sustainable development, sometimes water-borne diseases caused death in some parts of the world. The causes of water pollution include a wide range of chemicals and pathogens as well as physical parameters. Contaminants may include organic and inorganic substances (Aran & Aran, 2014). The presence of contaminants in water can lead to adverse health effects, including gastrointestinal illness, reproductive problems, and neurological disorders in infants, young children, pregnant women, the elderly and people whose immune systems are compromised (Shetty et al., 2023).

Sources of drinking water are subject to contamination and require appropriate treatment to remove disease-causing contaminants. Contamination of drinking water supplies can occur in the source water as well as in the distribution system after water treatment has already occurred. There are many sources of water infection, containing naturally occurring chemicals and reserves (for example, arsenic, radon, uranium), local land use performs (fertilizers, pesticides, focused feeding processes), manufacturing processes, and sewer overflows or wastewater releases (Grujović et al., 2022).

Globally, by 2015, 89% of people had access to water from a source that is suitable for drinking – called an improved water source. In sub-Saharan Africa, access to potable water ranged from 40% to 80% of the population (Supply & Programme, 2015). Third-world countries are most affected by a lack of water, flooding, and poor water quality. Up to 80 percent of illnesses in developing countries are the direct result of inadequate water and sanitation (Palaniappan et al., 2012).

Contaminated water can cause epidemics, interrupt economic life and create massive panic. Water distribution systems (WDSS) are complex systems consisting of pipes, pumps, valves, storage tanks, fittings, meters, etc., most of them buried underground, of different kinds of materials and diameters, with a length up to several hundreds of kilometres (Kanakoudis & Tsitsifli, 2017).

Failures in WDSS operations, such as water contamination after network repairs or inadequate disinfection, pose significant risks. Contaminants may enter the network during maintenance activities or from sewage infiltration, particularly when sewage pipes are positioned above water supply lines. In such cases, any failure in the sewage system alongside a fault in the water distribution network could result in severe contamination of drinking water (Kanakoudis & Tsitsifli, 2011). Despite the importance of disinfection for public health, there are concerns regarding the health effects of chlorine and its by-products. Increased chlorine levels can lead to the formation of by-products, such as trihalomethanes (THMs), due to reactions with organic compounds like humic and fulvic acids, hydrophilic acids, amino acids, and carbohydrates (Richardson et al., 2007). These by-products are associated with health risks, including infertility, teratogenic effects, kidney and liver impacts, and damage to the nervous and hematopoietic systems. Numerous epidemiological studies link chlorine by-products, such as THMs, to an elevated risk of various cancers, and even exposure through routes other than ingestion (e.g., skin contact) may pose health hazards (Villanueva et al., 2004). In recent years, water companies have aimed to manage their networks more effectively to reduce water losses. Pressure-reducing valves are commonly installed to control water losses by lowering pressure. However, this can increase water residence time, which may worsen water quality due to prolonged interaction with pipe materials and self-reactions in the water (Clark, 2015). Water quality can be influenced by factors such as flow rate, water composition, pipe material, and deposits within the pipes, affecting chemical, physical, and aesthetic properties (LeChevallier, 2003).

Sindhupalchowk is a lofty area that receives a substantial amount of rainfall every year which has resulted in a heavy food in the region. The region is a lofty area and thus the major sources of livelihoods are livestock rearing, basket weaving and limited subsistence farming. Due to the heavy flood and soil erosion each year clean water shortage is rampant in the region (Pariyar, 2022). The major sources of water are streams, water from these sources is dirty and most of the times contaminated and causing diseases such as cholera. The research therefore seeks to identify the major sources of drinking water of Kalara village and aims at identifying and resolving the problems faced by the locals. Provision of clean treated water will also help cub the occurrence or spread of waterborne diseases as the water will be keep clean.

Water is the source for life and its security and safety is of paramount importance. Water quality is affected by many factors, it is a challenge to safeguard drinking water safety. EWSs are necessary, as they can help to identify contamination events early enough to permit an effective response. An EWS should consist of monitoring and modelling tools in cooperation with optimization techniques. In this paper a literature review regarding on-line continuous monitoring systems, drinking water quality modelling and optimization techniques is performed.

For the control of the quality of drinking water, an institutional framework has been established at both European and national levels. Worldwide, the World Health Organization provides guidance (Organization, 2008). At the same time, it is suggested that risk assessment tools (HACCP, Water Safety Plans) need be developed to identify possible risks. At European level, in addition to the Water Framework Directive 2000/60/EC, the Water Directive has been in place regarding quality of water intended for human consumption (Hering et al., 2010). At national level, the existing institutional framework for drinking water quality includes health provisions relating to water disinfection, provisions on monitoring the drinking water quality, including the frequency of monitoring, as well as provisions on the definition of responsibilities for drinking water quality. The current institutional framework is included in circular that incorporates the Drinking Water Directive to the Greek legislation (Paranychianakis et al., 2015). The current legislation on monitoring quality of drinking water defines competent authorities and water managers, defines the responsibilities of the competent authorities as well as their obligations. These obligations include the frequency of drinking water sampling, monitoring parameters and the maximum parametric values. The implementation and development of an ISO22000 system in WDSs on the one hand is a particularly complex process and on the other hand it is differentiated according to the particular characteristics of each system (Kanakoudis & Tsitsifli, 2017). The development of a HACCP plan includes the identification of physical, chemical and biological hazards in the whole water supply chain, from the source to the water treatment plant, the storage tanks and the distribution network; the identification of critical control points (CCP), the monitoring system and corrective actions. HACCP is a systematic approach that helps water companies to identify on time potential risks and develop preventive and corrective actions aimed at preventing or reducing the consequences of the perceived risk (El Attaoui et al., 2023). In recent years, several water companies in various countries around the world have adopted HACCP systems to ensure the quality of drinking water . Indicatively European countries such as Belgium, Germany, Italy, and the UK etc. have incorporated HACCP in day-to-day operations of water utilities.

METHODS

Field location: Chautara, Sindhupalchowk district

Figure 1.: *Map of Chautara, Sindhupalchowk*

Chautara Sangachowkgadi is a municipality in Sindhupalchowk District in Bagmati Province of central Nepal. The municipality was established on 18 May 2014 by merging Pipaldanda, Chautara, Kubhinde, Sanusiruwari Village Development Committees as Chautara Municipality. Later on 2017 it was expanded again merging Sangachok, Thulo Sirubari, Kadambas, Irkhu, Batase and Syaule Village Development Committees to form Chautara Sangachowkgadi Municipality. It is now divided into 14 wards. This is the district headquarters of the Sindhupalchowk District. The municipality stands at an elevation of approximately 1,600 m above sea level. Religious and cultural festivities form a major part of the lives of people residing in Chautara. There are people of various religious beliefs, Hinduism, Buddhism and Christianity as well, giving Chautara a cosmopolitan culture. Nepali is the most commonly spoken language in the municipality. Likewise, Newari and other languages such as Tamang are also spoken as the Newars and Tamangs dominate the settlement in population. Chautara is located in the northern part of Nepal and covers an area of around 50 square kilometers. The average elevation is 1,600 meters above sea level. Chautara is in the Deciduous Monsoon Forest Zone, one of five vegetation zones defined for Nepal.

The dominant language is Nepali (55.31%) followed by Tamang (31.26%), Newari (6.71%), Sherpa (2.86%), Hyolmo (2.11%), Thami (0.99%) and others (0.76%). The headquarter Chautara is linked with a strategic road from Araniko highway at

Bandeau/Dolalghat. The largest ethnic groups are Sherpa, Newar, Brahmin, Chhetri,Gurung, Magars, Tamang, etc. The major languages are Newar, Tamang, Nepali, Nepal Bhasa and English is understood by majority of people. The major religions are Hinduism, Buddhism and Christianity.

DHALPA, KRITIPUR, KATHMANDU DISTRICT

Kirtipur is an ancient city of Nepal. Dhalpa is located in Kritipur, Kathmandu. The Newars are the natives of Kipoo (Kirtipur) that is believed to be derived from Kirati King Yalamber. It is located in the Kathmandu Valley 5 km south-west of the city of Kathmandu. It is one of the five municipalities in the valley, the others being Kathmandu, Lalitpur, Bhaktapur and Madhyapur Thimi. It is one of the most famous and religious places to visit. Many people visit this place not only for its natural environment but also to visit temples. The city was listed as a UNESCO tentative site in 2008.

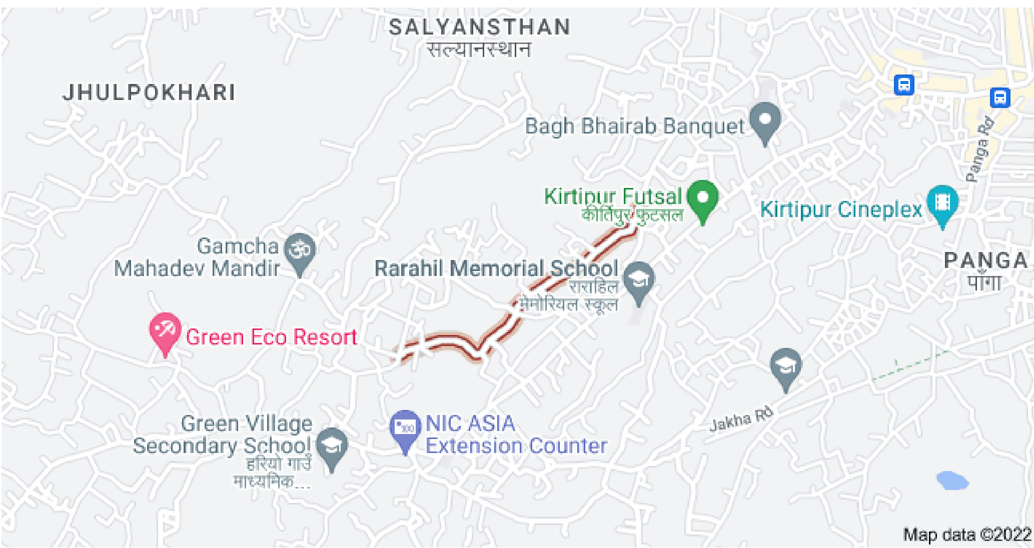

Figure 2: *Map of Dhalpa Area*

Originally a Newar foundation, Kirtipur is still a center of Newar culture. It has been merged with surrounding villages to form the municipality of Kirtipur with a population of 67,171. Southern Part of Kirtipur is surrounded by Champa Devi Hill. On Nepali New Year (Bishak 1) people around kathmandu Valley hike up to the Hill. It has many temples, gumbas (Buddhist monasteries) and churches. Due to the presence of Tribhuvan University, Kirtipur is a popular area for out-of-town students and professors to rent houses and they are major contributors to the local economy.

Kirtipur is the one of the most famous historic place in Nepal. The ethnic group in Kirtipur is Newar. The Kirtipur is dominated by Newars but there are also other ethnics like Brahmins, Chhettries, Buddhists, Hindus, Rais, and so on. The Kirtipur is situated at 1414 meters high from the sea level. From top point of Kirtipur, people can view the Kathmandu Valley clearly. On the North of Kirtipur there we can see the Langtang (7234 m.), Dorje Lhakpa (6637 m.), Gauri Shanker (7134 m.) and other Himalayas. Recently a open musuem is started by local people of Nepal where one can enjoy tipical Newari Food. There we can find many ancient arts, esstetial things used in daily life of newari people etc. There are 2 important temples Bagh Bhairab & Umamaheshwor and 1 Stupa Chilancho Bihar, 1 Mahayani Gumba and 1 Hinayani Boudh Bihar.

Research Design

While preparing the report, not only a single methodology was used. Both qualitative and quantitative research were designed as a systematic plan to achieve the set objectives and address research questions according to the research problem. In this, advanced data collection objectives and 12 research questions are aligned with the research problems. Advanced data collection in both qualitative and quantitative research was designed as a systematic plan to achieve the set methods, and its analysis will be used to minimize bias. Since the study is based on both qualitative information and quantitative data, checklists and questionnaires will be the tools to collect this information and data. Articles, government publications, international publications, magazines, newspapers, abstracts, books, journals, reports, and theses are the sources for secondary data, but the relevancy and reliability of these data will be carefully considered when using them. Collected primary quantitative data will be clearly edited, coded, and classified in MS Excel sheets for analysis. Relevant charts and graphs will be created to facilitate easy understanding. Methods and analyses were used in this proposed study. Since my study is based on both qualitative information and quantitative data, checklists and questionnaires were my tools to collect this information and data.

Population of the Study

People living in Kalari of Sindhupalchowk district and the Dhalpa area of Kirtipur are purposively selected for data collection in this research. Logically required samples will be chosen from the population to minimize error. The assessment of drinking water conditions was mainly targeted, and local people are the respondents in the study, though their community or group is also considered to collect their views as primary information in Kalari. Logically required samples were chosen from the population to minimize error.

Sample Procedure and Sample Size

The study has tried to cover about 35 respondents Non probability sampling processes is adopted to find out potential respondents.

Tools for Data Collection

Primary Data

Questionnaire: A set of questions is used for the purpose of gathering information from respondents through a survey or statistical study.

Interview: One of the tools for primary data collection in this study was the interview. The researcher asked pre-made and pre-tested questions on the relevant topic to the respondents.

Rural area Survey: The structured interview schedule was used to collect primary information from the rural area of Kalari. The researcher personally conducted the interviews with the respondents. However, local people assisted in the rapport-building process.

Secondary Data Collection

In this study, the source of secondary data was government publications, international publications, books, magazines, newspapers, bibliographies, reports, theses, articles, journals, abstracts, etc. However, the researcher was aware of the reliability of that data for the proposed research study. Data in terms of source, methods of data collection, temporal accuracy, sustainability, and adequacy of data for the proposed research study.

Method of Data Analysis and Interpretation

After the required data were collected, they were carefully processed to make them ready for the analysis. Data processing basically dealt with data editing, coding, classification, and tabulation of the collected data. Data analysis was a process of reducing/condensing the data into a logical, understandable form such that it could be studied and tested from a scientific perspective. Different statistical tools were used to analyse the data.

RESULTS

We went to Kalari in Chautara, Sangachowkgadi municipality, which is located in the Sindhupalchowk district of Bagmati Pradesh, to learn more about the rural communities and their access to drinking water facilities. Ninety-eight percent of the people there had their own drinking water tap at home, while the remaining two percent shared a tap. The people stored water in tanks so that they could use it later.

Data presentation:

After the required data were collected, they were carefully processed to prepare them for analysis. Data processing basically dealt with data editing, coding, classification, and tabulation of the collected data. Data analysis was a process of reducing/condensing the data into a logical, understandable form so that it could be studied and tested from a scientific perspective. Different statistical tools were used to analyze the data.

Consumption of Drinking Water

Water is vital for all known forms of life, even though it provides neither food, energy, nor organic micronutrients. Water is an essential component of life, so we need to consume it carefully.

In the survey of Kalari village, out of 35 respondents, 20 respondents consumed water directly from the tap, 7 respondents used a filter to purify water for drinking, and 8 respondents consumed water by boiling. Similarly, from the survey of the Dhalpa area, out of 35 respondents, 4 respondents consumed water directly from the tap, 20 respondents used a filter to purify water for drinking, and 11 respondents consumed water by boiling.

	Kalari Village		**Dhalpa Area**	
	Respondents	Percentage	Respondents	Percentage
Boiled	8	23 %	11	31 %
Filtered	7	20 %	20	57 %
Without Boiling and Filtering	20	57 %	4	12 %

Table 1. Consumption of Drinking Water in Kalari village and Dhalpa area.

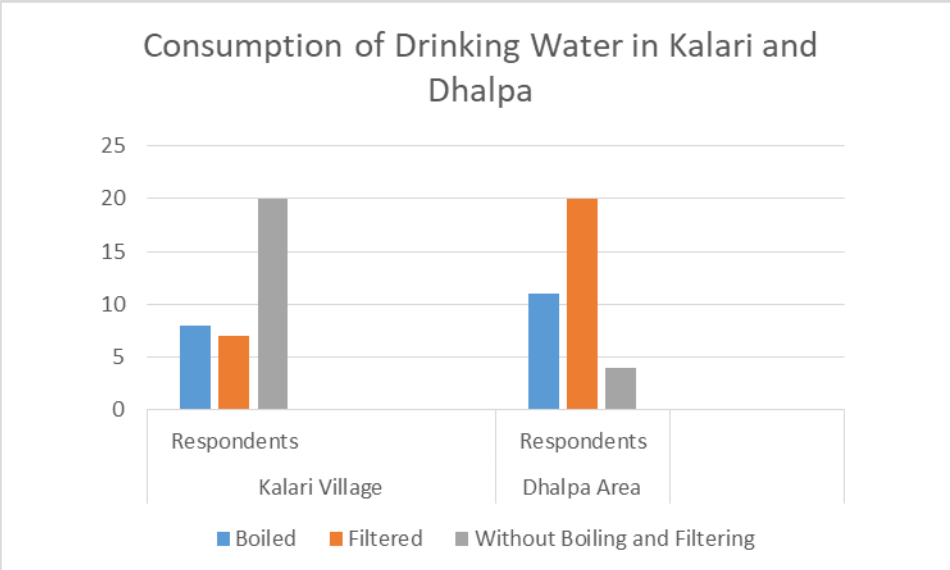

Fig. 3. Consumption Pattern of Drinking Water in Kalari Village and Dhalpa Area

Illness experience of respondents from drinking water

With the consumption of the supplied drinking water directly, out of 35 respondents, 4 respondents experienced some problems with the direct consumption of drinking water, 9 respondents sometimes experienced stomach pain and diarrhea, and 22 respondents have never experienced any diseases with the consumption of water. From the survey in the Dhalpa area, Kritipur, the government has provided drinking water services to the people of the Dhalpa area. Three respondents sometimes suffered from stomach pain due to the direct consumption of drinking water, 2 respondents experienced some illness, so they started to consume water from a mineral water jar, and 30 respondents have never experienced any diseases with the consumption of water as they consume water by boiling and use filtration for drinking and cooking.

Experienced any Illness ?	**Kalari Village**		**Dhalpa Area**	
	Respondents	Percentage	Respondents	Percentage
Yes	4	11 %	2	6 %
Sometimes	9	26 %	3	8 %
Not Yet	22	63 %	30	86 %

Table 2. Illness experience of respondents in Kalari village and Dhalpa area from drinking water

Provision of Drinking Water Facilities

In Kalari of Chautara, the drinking water facility is provided by the local government and the community development committee. Besides this, some people set up taps on their own. According to the respondents, out of 35 houses surveyed, it was found that 30 houses, i.e., 85%, had drinking water facilities provided by the local government, while 5 houses, i.e., 10%, had drinking water facilities provided by the community development committee.

Provision of Drinking Water Facilities	**Kalari Village**	
	Respondents	Percentage
Local Government	30	85 %
Community	5	15 %

Table 3. Provision of drinking water facilities in Kalari village

In the Dhalpa area, 100% of drinking water facilities are provided by the KUKL government (Kathmandu Upatyaka Khanepani Limited).

Provision of Drinking Water Facility	**Dhalpa Area**	
	Respondents	Percentage
KUKL Government	35	100 %

Table 4. Provision of drinking water facility in Dhalpa area.

Source of Drinking Water

The supply of drinking water is limited in Kalari village, so the people of Kalari village store water for further use. According to the respondents' point of view, their source of drinking water is from the reservoir. The water supply is limited, so they store the water in their tanks, and some share their taps to access water. However, if the reservoir's water sources are disrupted, they borrow water from the river. The majority of houses have a drinking water pipe supply, and they use direct water from the tap. Out of 35 respondents, 31 use direct water from the pipeline and reserve it in the reservoir tank, while 4 respondents consume water from the community tap.

Sources of Drinking Water	Kalari Village	
	Respondents	Percentage
Pipeline	31	88 %
Community tap	4	12 %

Table 5. Sources of drinking water in Kalari village

Similarly, regarding the source of drinking water, the people of the Dhalpa area usually use the water provided by Kathmandu Upatyaka Khanepani Limited (KUKL); some use water from mineral water jars, and some use water from tankers. Out of 35 respondents, 7 use water from mineral water jars, 2 use water from a tanker for both drinking and household purposes, and 26 respondents use water supplied by KUKL for drinking purposes.

Sources of Drinking Water	Dhalpa area	
	Respondents	Percentage
KUKL	26	74 %
Purified water Jar	7	20 %
Tanker water	2	6 %

Table 6. Sources of drinking water in Dhalpa area.

Consumption of water in units

Meters record how much water has been used. People have to pay monthly for water consumption to the government in their respective wards. It is free of cost if people have used up to 1 unit of water. It is known that 1 unit is equal to 1,000 liters. Out of the 35 respondents sampled from Kalari village, their monthly water consumption is presented below:

Consumption in units	0-10	10-20	20-30	30 above
No. of respondents	3	4	11	17

Table 7. Consumption of water in units by the people of Kalari village

Out of the 35 respondents sampled from Dhalpa, Ward No. 5, Kritipur, their monthly water consumption is presented below:

Consumption in units	**0 - 10**	**10 - 20**	**20 - 30**	**30 above**
No. of respondents	20	5	7	3

Table 8. Consumption of water in units by the people of Dhalpa Area

Level of Satisfaction

With the services provided by the government, community, or private connections, people have different levels of satisfaction regarding the quality of the water they consume. I further questioned respondents about their satisfaction with the quality of the water. Out of 35 respondents in Kalari village, 4 respondents are least satisfied with the quality of water, 28 respondents are fairly satisfied, and 3 respondents are highly satisfied. The results are presented in the table below:

Level	**Least Satisfied**	**Fairly satisfied**	**Highly satisfied**
No. of respondent	4	28	3

Table 9. Satisfaction level of respondents of Kalari village

Similarly, we further questioned the respondents of the Dhalpa area about their satisfaction with the quality of the water. Out of 35 respondents in the Dhalpa area, 5 respondents are least satisfied with the quality of water, 29 respondents are fairly satisfied, and 1 respondent is highly satisfied. The results are presented in the table below:

Level	**Least Satisfied**	**Fairly satisfied**	**Highly satisfied**
No. of respondent	5	29	1

Table 10. Satisfaction level of respondents of Dhalpa area

Major findings

We visited Kalari village in the Chautala Sangachowkgadi municipality, located in the Sindhupalchowk District of Bagmati Province, to learn more about the condition of drinking water facilities in the village area. We found that almost all houses have their own drinking water tap, while a few houses share a drinking water tap. Out of the respondents in Kalari, we gathered insights into the drinking water facilities in the village. The facilities are generally very good. There is a slogan of ‘one house, one tap,’ and people use the water for household purposes, animal use, and drinking.

Among the 35 respondents, almost all people consume water directly, some boil the water before drinking, and a few use filters to purify it. We found that, generally, no one experienced serious illness from the direct consumption of water, though some reported occasional stomach pain, which led them to begin boiling and filtering the water. The local government provides drinking water facilities through pipelines to every household, and some people have also installed their own taps.

The water supply is limited to certain times in some areas, with water supplied for only two hours per day, so people store it in tanks to use throughout the day. In the event of supply disruptions due to natural calamities, people go to the main stream to collect water for household purposes. However, in the Dhalpa area, water supply is available only twice a week for an hour each time.

Wastewater is managed and recycled for kitchen gardens to cultivate green vegetables, while some is given to animals. Stored wastewater is also used for biogas production. According to the people surveyed, they are generally very satisfied with the current drinking water facilities. Before the 2072 earthquake, people had to travel long distances to collect water, but now each house has a drinking water tap.

We also visited Dhalpa Ward No. 5 in Kritipur municipality, located in the Kathmandu District of Bagmati Province, to learn about the condition of drinking water facilities in the city area. We found that nearly all houses have their own drinking water sources. Out of 35 respondents in Dhalpa, we gathered information about drinking water facilities in the city area, where conditions are also very good. In addition to the drinking water provided by the KUKL government in the Dhalpa area, people also use mineral water jars and tanker water. Like in Kalari village, the people of Dhalpa also consume water by boiling it, by filtering it, and some consume it directly. Compared to rural areas, fewer people in urban areas consume water directly; more use filters and boil the water. Regarding illnesses, urban residents reported experiencing more minor illnesses with the direct consumption of water provided by KUKL than rural residents.

It is similar in both rural and urban areas that people do not have to pay if their consumption remains below 1 unit.

Discussion and Conclusion

Water is the source of life, and its security and safety are of paramount importance. Since drinking water quality is affected by many factors, safeguarding its safety is a challenge. Water quality models have been developed to simulate chlorine transfer and concentration and to predict chlorine residuals. The local government provides clean, drinkable water to the people of Kalari village and the Dhalpa area.

Water is one of the basic human necessities, yet a large proportion of the Nepalese population lacks access to safe and adequate drinking water. According to the Department of Water Supply and Sewerage in Nepal, although an estimated 80% of the population has access to drinking water, it is not safe. Poor economic conditions, difficult terrain, outdated technology, and insufficient planning are causing water waste in Nepal. Sources of drinking water are becoming polluted due to garbage, sewage, improper use, and lack of awareness about the need for safe drinking water.

The purpose of this research was to gather information about the condition of drinking water in both rural and urban areas. The survey revealed that water supply is limited for people in both settings, with an affordable rate per unit for water consumption. This information was gathered through interviews and surveys with local people in both urban and rural areas.

Drinking water facilities are provided by both the government and the community development committee. In Kalari village, the condition of drinking water is better than the facility provided by KUKL in the Dhalpa area. For instance, in Kalari, water is supplied twice a day, whereas in Dhalpa, it is supplied twice a week.

Water is an essential element for life and should be pure and clean. Consuming polluted water can lead to severe health issues, including gastrointestinal illnesses, nervous system or reproductive effects, and chronic diseases such as cancer. The satisfaction level with water quality is average in both rural and urban settings.

This report discusses drinking water consumption in Kalari village and Dhalpa, Ward No. 5, and focuses on the quality of drinking water and illnesses experienced due to its consumption in both rural and urban settings. Drinking water is provided by KUKL in urban areas and by the government and community development committees in rural areas. The literature review conducted on the internet helped the researcher reach conclusions.

Suggestion and recommendation

Though drinking water facilities seemed to be good, some component seemed to be manage further. Some the basic but really important recommendation as the study in both rural and urban areas are mentioned here.

- The supply of drinking water should not be limited
- Chlorination should be make widely practiced as a method of disinfection
- Giving continuity in enhancing the supply of drinking water
- Conducting meetings time and again to address the problems.

Conflict of Interest: The authors declare no competing interests.

Data Availability Statement: The data are available from the corresponding author upon reasonable request.

Ethical Considerations: Ethical issues have been completely observed by the authors.

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