CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Water is a basic need of human being including food, housing, clothes etc. We can't live without water. There is 65 percent water in human body of whole amount. If there is lack of water in human body, it causes dehydration. We need safe drinking water.

Health is a very important part of human life. So it is said that health is wealth. But the level of the health of people is determined by various ways of treatment against different diseases, mental disorder etc. So we should be very careful to keep our body healthy.

Water is a very useful thing. It is used for many areas like irrigation, domestic use, industrial use, fishery, electricity, public use, drinking, cleaning etc.

Many diseases are caused by contaminated water in developing countries like Nepal. They are diarrhoea, dysentery, jaundice, cholera, typhoid, hepatitis A and hepatitis E.

For drinking water people use several sources of water. They are taps, tube-wells, wells, ponds, streams etc. and people drink water directly from these sources of water.

In recent years the water supply and sanitation division/ subdivision offices have been playing vital role in the Open Defecation Free (ODF) program in coordination with the district water supply sanitation coordination committee. Several water and sanitation related programmes were conducted for people. They are World / Global Hand Wash Day – October 15th, World Environment Day – June 5th, World Health Day – April 7th, World Water Day - February 22nd, World Toilet Day, Nepal Water and Hygiene Campaign etc.

Water quality is affected by both point and non-point sources of pollution. These include sewage discharge, discharge from industries, run-off from agricultural fields and urban run-off. Water quality is also affected by floods and droughts and can also arise from lack of awareness and education among users. The need for users' involvement in maintaining water quality and looking at other aspects like hygiene, environment sanitation, storage and disposal are critical elements to maintain the quality of water resources.

While ‘traditional diseases’ such as Diarrhoea continue to take a heavy toll, 66 million Indians are at risk due to excess fluoride and 10 million due to excess arsenic in groundwater.

The health burden of poor water quality is enormous. It is estimated that around 37.7 million Indians are affected by waterborne diseases annually, 1.5 million children are estimated to die of Diarrhoea alone and 73 million working days are lost due to waterborne disease each year. The resulting economic burden is estimated at $600 million a year. The problems of chemical contamination is also prevalent in India with 1,95,813 habitations in the country are affected by poor water quality. The major chemical parameters of concern are fluoride and arsenic. Iron is also emerging as a major problem with many habitations showing excess iron in the water samples.

The average availability of water is reducing steadily with the growing population and it is estimated that by 2020 India will become a water stressed nation. Groundwater is the major source of water in India with 85 percent of the population dependent on it.

The 2001 Census reported that 68.2 percent of households in India have access to safe drinking water. According to latest estimates, 94 percent of the rural population and 91 percent of the people living in urban areas have access to safe drinking water.

Diseases related to inadequate water, sanitation and hygiene are a huge burden in developing countries. It is estimated that 88 percent of diarrhoeal disease is caused by unsafe water supply, and inadequate sanitation and hygiene (WHO, 2004). Many schools serve communities that have a high prevalence of diseases related to inadequate water supply, sanitation and hygiene, and where child malnutrition and other underlying health problems are common.

Schools, particularly those in ruralareas, often completely lack drinking-water and sanitation and hand washing facilities; alternatively, where such facilities do exist they are often inadequate in both quality and quantity. Schools with poor water, sanitation and hygiene conditions, and intense levels of person-to-person contact, are high-risk environments for children and staff, and exacerbate children’s particular susceptibility to environmental health hazards.

Children’s ability to learn may be affected by inadequate water, sanitation and hygiene conditions in several ways. These include Helminth infections (which affect hundreds of millions of school-age children), long-term exposure to chemical contaminants in water (e.g. lead and arsenic), diarrhoeal diseases and malaria infections, all of which force many schoolchildren to be absent from school. Poor

environmental conditions in the classroom can also make both teaching and learning very difficult.

Girls and boys are likely to be affected in different ways by inadequate water, sanitation and hygiene conditions in schools, and this may contribute to unequal learning opportunities. Sometimes, girls and female teachers are more affected than boys because the lack of sanitary facilities means that they cannot attend school during menstruation.

The international policy environment increasingly reflects these issues. Providing adequate levels of water supply, sanitation and hygiene in schools is of direct relevance to the United Nations (UN) Millennium Development Goals of achieving universal primary education, promoting gender equality and reducing child mortality. It is also supportive of other goals, especially those on major diseases and infant mortality.

According to the United Nations Economics and Social Council (ECOSOC 2009) the lack of safe drinking water and poor sanitation practices are the leading causes of poor health in many developing countries. It also reports that 470,000 deaths could be prevented annually by providing access to safe water for half the population currently without such access. Studies undertaken in developing countries have shown that the provision of safe drinking water and sanitation contributes to significant reduction in the incidence of child mortality and diseases such as Ascariasis, Diarrhoea, Schistosomiasis and Trachoma among the population. Along with guinea worms and Cholera, these conditions are highly prevalent in West Africa and other places that lack access to safe water and sanitation.

Dracunculiasis, hookworm infection Schistosomiasis and Trachoma tend to be more locally restricted, yet common in the developing word. Dralunculiasis, however, occurs only in parts of Africa and Asia. It is particularly prevalent in poor, isolated rural areas that have a high dependency on stagnant water and ponds. It is reported to be the leading cause of ill health in places that use water from unsafe sources like streams, usually leaving those afflicted too weak to work or attend school. This illustrates the correlation between lack of access to safe water, poverty and school absenteeism (Esrey et al. 1991, 609, Hunter 1997, 105; Tay 2005, 2; Harvey 2008; VOA July 2009; ECOSOC 2009).

There is a global crisis in water and sanitation, with diarrhea killing at least 1,200,000 under-5 each year.

1.2 Statement of the Problem

Water is the one of the basic needs for human life. We need safe drinking water. Water is used in several areas like domestic use, irrigation, public use, industrial use, personal use etc. The use of water in any area, the water should be safe. Impure water contains many pathogenic germs which cause many communicable diseases like Diarrhoea, Cholera, Typhoid, Dysentery, Jaundice, Hepatitis A and hepatitis E etc.

Nepal is one of the underdeveloped countres in the world. Due to poverty and lack of awareness people are suffering from more diseases directly or indirectly in the underdeveloped countries. Because of carelessness of health and hygiene people have to face more health related problems. Because of poor health of people, the nation could not expect development.

Sunsari is one of seventyfive districts in Nepal. There are living aadibasi Janajati living more than others. Because of lack of awareness of drinking water, waste management, use of toilet and poor sanitation, people are suffering from different communicable diseases.

School is the formal place where students learn more. Students come from several areas like, several castes, religions, geographical areas, languages, traditions, cultures, economic status etc. The water available in school should be pure. Impure water causes several diseases.

Generally the condition of water supply in community schools is not systematic. So the present problem is stated as **"Use of Drinking Water and its Impacts on the health of Students"**

1.3 Objectives of the Study

The objectives of this research as follows:

1.3.1 To find out the condition of drinking water in community schools.

1.3.2 To find out the impacts of drinking water on the health of students.

1.4 Research Question

1.4.1 Is the management of drinking water well in Community schools?

1.4.2 What are the impacts of drinking water on students of community schools?

1.5 Significance of the Study

This study mainly focuses a study of use of drinking water and its impact on students of community schools. The significances of the study are as follows:

- This study will be helpful for teachers, students to develop awareness on use of drinking water and its impacts on students and formulating good practice.
- The study will be useful for the community, schools, government and NGO'S support management and practice water supply and safe drinking water.
- The study will be helpful for other researchers, students and educationists for further study on water supply and safe drinking water.

1.6 Delimitation of the Study

Each research work has delimitation. Being concerned to time, financial resource and material, the present research has some delimitations which are as follows:

- The study was limited to the two community schools viz. Pakali Higher Secondary School and Bha.Shi Higher Secondary School of Sunsari.
- The study covered only current health condition, use of drinking water and awareness about health.
- The study was concerned on the use of drinking water and its impact on students of the community school.

1.7 Operational Definition of Used Terms

Arsenic **:** Poisonous mineral element that harms skin and human health.

Ascariasis : A disease of humans caused by the parasitic roundworm.

Awareness : Make consciousness of well information.

Community : Community is social group within the same degree of social coherence and living given area.

Community School : Regularly granted, permitted or accepted by Nepal Government are called Community Schools.

Dracunculiasis : An infection caused by an infestation of the parasite Dracuncuus medinensis.

Exacerbate : To make worse (pain, anger etc.)

Facility : To competence the safe drinking water used.

Fishery **:** A fishery is a place were fishes are bred and reared.

Health : Health is state of complete physical, mental and social well being not merely the absence of disease or infirmity.

Helminth : A parasitic roundworm or flatworm.

Knowledge : Information, understanding and skill gained through learning or experience.

Pathogenic Agent : An organism causes the disease.

Safe : Free from any pathogenic agent. (WHO)

Schistosomiasis : Any of various diseases of humans caused by parasitic blood flukes of the genus schistosoma.

Supply : Distribution of water.

Stream : A small river

Trachoma **:** An infectious disease of the eyelid caused by the eyelid

: caused by the bacterium chlamydia trachomatis.

CHAPTER – II

REVIEW OF RELATED LITERATURE AND CONCEPTUAL FRAMEWORK

The literature review is a very significant step in the research process. It gives general guidelines to the researcher. It helps the researcher to investigate new matters. A literature review is presentation, classification and evaluation of previous research. The literature studies on use of drinking water have been reviewed on the various grounds to provide its relevant concepts and its significance in Nepal in village context. The overall purpose of this chapter is to review brief information about different existing views of experts in this field and to lay out a framework for the study.

2.1 Review of Theoretical Literature

Water is the fundamental element of human life. Water is used for several purposes like domestic use, public use, use in irrigation, industrial use, personal use etc. But the water which we use should be clean and absence of pathogenic agents. Spring water is the most fresh in natural source of water. Rain water is the purest form of water in natural source of water. But initial water of rain is impure because there are many gases, dust particles, smoke etc. and later water is pure. Sources of water of ponds, lakes, seas, rivers is impure. Because the water of these sources contains virus, bacteria, dust particles, arsenic etc.

Raymajhi, Top Bahadur (2069) wrote the newspaper articles about "water supply and sanitation", education and awareness is a must to improve water and sanitation in the country. If we failed to deploy all state mechanisms for infrastructure development, education awareness and other programs, we would not be able to achive Millenium Development Goals on water and sanitation by 2015.

Now a days, water supply and sanitation division/sub division offices have been playing a vital role in the ODF initiative in coordination with the district water supply and sanitation co-ordination committee. Water and sanitation related several campaigns have been selected to improve awareness on the occasion of national and international days.

They are global hand wash day - October-15th, World water day - February 22nd,

World environment day-June-5th world toilet day, World health day- April- 7th, Nepal water, sanitation and hygiene campaign.

According to Education rule 2059, safe drinking water should be well manage in school, safe boundary, surrounding to the school, appropriate infrastructure and above to primary schools toilets should be separate for boys, girls and teacher staffs. One toilet for every fifty students and enough urinal should be managed.

The average availability of water is reducing steadily with the growing population and it is estimated that by 2020 India will become a water stressed nation. Groundwater is the major source of water in our country with 85 percent of the population dependent on it.

The 2001 Census reported that 68.2 per cent of households in India have access to safe drinking water. According to latest estimates, 94 per cent of the rural population and 91 per cent of the people living in urban areas have access to safe drinking water.

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Children's ability to learn may be affected by inadequate water, sanitation and hygiene conditions in several ways. These include helminth infections (which affect hundreds of millions of school-age children), long-term exposure to chemical contaminants in water (e.g. lead and arsenic), diarrhoeal diseases and malaria infections, all of which force many schoolchildren to be absent from school. Poor environmental conditions in the classroom can also make both teaching and learning very difficult.

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learning opportunities. Sometimes, girls and female teachers are more affected than boys because the lack of sanitary facilities means that they cannot attend school during menstruation.

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There is a globle crises in water and sanitation, with diarrhea killing at least 1,200,000 under-5 year child each year. Plan works with communities to improve access to safe drinking water and basic sanitation and to raise awareness of the importance of hand washing and waste management.

2.2 Review of Empirical Literature

Water is the essential element for human life. Water which we use should be pure. Water covers 65 percent of our whole body.

In the world, two third part is water and one third part is land. Brazil is the richest country for water resources in the world and Nepal is the second richest country in the world for water resources.

According to World Health Organization, forty percent of world population are deprived of basic health services.

Eighty percent diseases transmit from impure water. There are fewer persons in Nepal who use safe drinking water. Open defecation is a major current problem. More people do not have toilet in their home. Due to water sources everywhere, open defecation is increasing.

According to UNICEF (1996), the major causes of illness and death of developing countries of the world are lacked access to clean drinking water and water borne diseases. In Nepal alone, some 44,000 children under age five die every year from water borne diseases. (Department of civil and Environment Engineering, DCEE, 1996).

In our country, 27 percent of the total population only care about sanitation. In 2065 BS. in Rukum, Jajarkot and Dailekh, hundreds of people died due to dirty water and Diarrhoea.

National census 2068 main source of drinking water: Among them total family of country 47.78 percentage used to sources tap and 35 percent of family as used to supply water of tube-well. (NCR 2068)

The drinking water and sanitation division Itahari had tested the water of five places of Sunsari District in 2062 BS. The places were Inaruwa, Jhumka, Itahari, Duhabi and Adarsha. In that test the arsenic in water was less than 0.01 mg/l which is low and water is acceptable to drink.

Reviewing the above literature it is found that water supply causes disease problem in the world especially in the developing countries like Nepal. Lack of required amount of water is a problem in the one hand and purity of water is another problem, impure water has caused many diseases. In such situations study on this topic is required.

Water on the earth exists in space called hydrosphere at the crust of the earth, which extends about 15 km up into the atmosphere and about 1 km down into the lithosphere.

Over 97 percent of the world's water is contained in the oceans. It is salty and not suitable for drinking (Singh and Singh, 2001 P.S.) Out of the available fresh water on the and ice caps (ibid, p. 9)

2.3 Implications of the Review for the Study

The study of review of related literature is a vital work. Without reviewing the literature the thesis can be repeated on the same problem. Review study helps the researcher to find out new problems. A good researcher should review the related literature. Review of the thesis provides guidelines for new researchers. Some implications of review for the study are as follows:

2.3.1 Review helps to find out new problems

If a researcher reviewed a thesis, he/she could find out new problems. One thesis cannot find out all the problems and it gives suggestions to new researchers on other problem.

2.3.2 It helps new researcher for further study

New researcher studies the thesis. He/she finds out which helps him/her for further study.

2.3.3 Review helps to researcher on unsolved problems

Some problems may not be solved. This type of problem can be a topic for researchers.

2.3.4 It helps to avoid the topic for repeating

Several researchers have researched on several problems/topics. Review for the study helps to new researchers to select new topics and avoid repetitions.

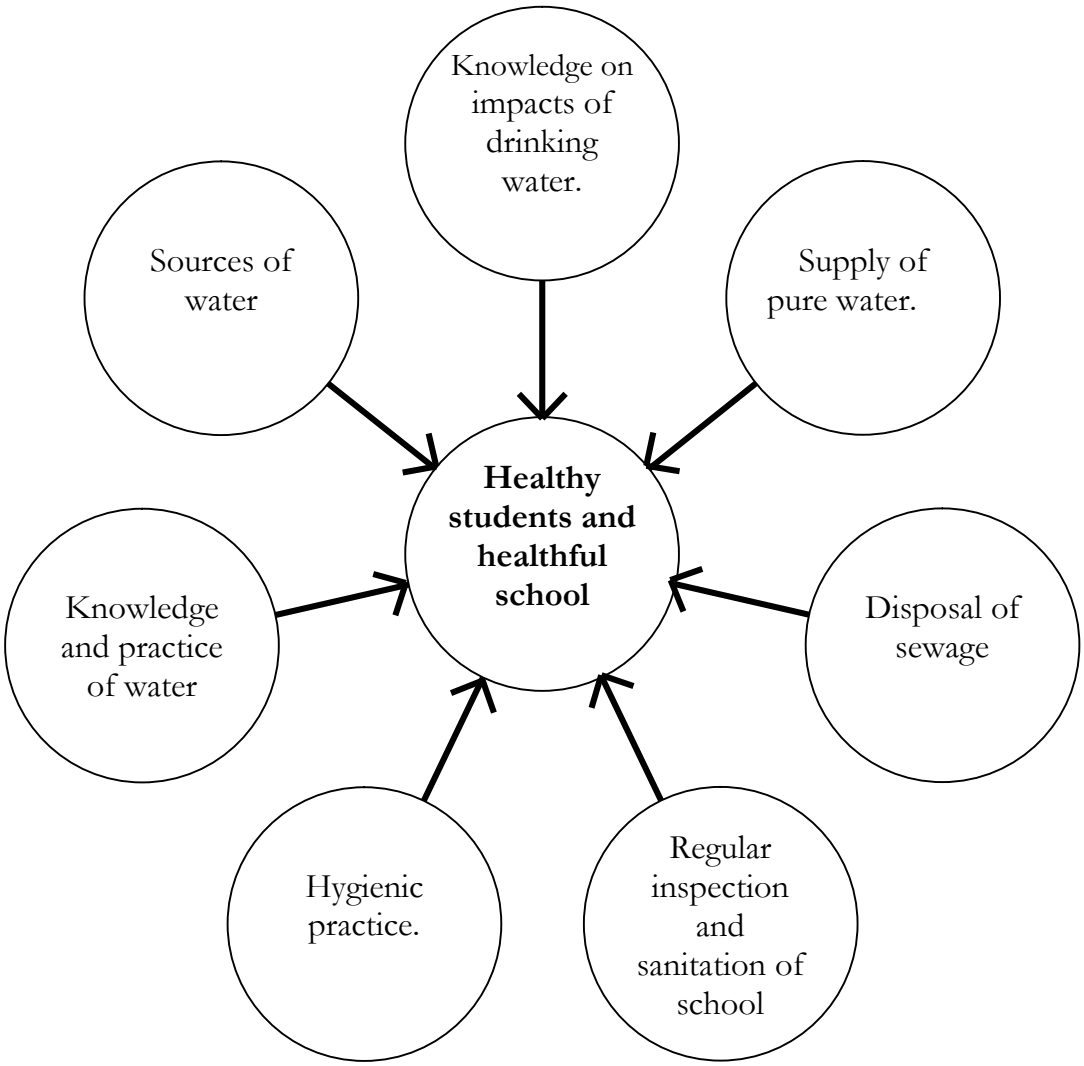
2.3.5 Review helps to synthesize of prior works

Review makes researchers capable to synthesize prior studies with present studies.

2.4 Conceptual Framework

Water is a basic need for human life. Drinking water should be pure. Pure water makes us healthy. Impure water makes us ill. Impure water contains many pathogenic agents, dust particles etc. Impure water causes many infectious diseases like Diarrhea, Dysentery, Jaundice, Cholera, Hepatitis A and Hepatitis E etc. Water is used in general domestic, public, irrigation, industrial personal uses etc. For healthy environment safe drinking water may be one of the important factors. So, for healthy environment and healthy students of the schools, water supply and use of safe drinking water related conceptual framework has built as follows.

Figure No. -1


Knowledge on impacts of drinking water.
Sources of water
Supply of pure water.
Healthy students and healthful school
Knowledge and practice of water
Disposal of sewage
Hygienic practice.
Regular inspection and sanitation of school

CHAPTER – III

METHODS AND PROCEDURE OF STUDY

This chapter dealed with the research methods and techniques to be used in the study. This chapter has included the following methods and procedure: design of the study, population and sample, sampling procedure, data collection tools, data collection procedures and data analysis and interpretation procedures.

3.1 Design and Method of the Study

This study is based on the descriptive research design. This study is based on quantitative data. The researcher described the collected data with the help of tables, pie-charts and histograms.

3.2 Population Sample and Sampling Strategy

The study has covered two community schools of Sunsari District. They are Pakali Higher Secondary School and Bhashi Higher Secondary School. These two schools are selected by purposive sampling method. The total number of students of Sunsari district was 28,011 in class 9 to 12 (DEO 2071 B.S.). The number of students in the secondary level of Pakali HSS was 298 and in Bha.Si. HSS was 146. 165 students from Pakali HSS and 85 students from Bha.Si. HSS were selected from the secondary level as respondents by purposive sampling method. In total 250 respondents were selected, 55.37 percent respondents has selected from Pakali HSS from the Secondary level as and 58.22 percent respondents from Bha.Si. HSS from the secondary level, were selected. The study was descriptive research design. The data collection tools of this study were questionnaire and observation checklist.

3.3 Study Area/Field

The study area was two community schools of Sunsari districts. They are Pakali Higher Secondary School and Bha.Si. Higher Secondary School.

3.4 Data Collection Tools and Techniques

This study was based on primary data. Data was collected by using questionnaire and observation checklist. The questions contained some closed and some open types. Before collecting the data, questionnaire and interview schedule were verified by the supervisor .Questionnaire and observation checklist are included in appendix I and II respectively.

3.5 Data Collection Procedures

At first the researcher received the approval letter from the health education department. The questionnaire was accepted by the guidance of supervisor after pretest of data. The researcher visited the related schools. Then he informed the school authorities about the purpose of visiting and he got permission from the headmasters. The researcher introduced about him and his research work to the students. The researcher gave the questionnaire to the students to fill up. The questions of questionnaire were translated in Nepali. The researcher observed drinking water, source of drinking water and water supply related mechanism and filled up observation form.

3.6 Data Analysis and Interpretation Procedures

At first collecting data was checked and verified on the field manually to reduce errors. Data analysis was done with the help of the computer. The researcher tabulated and developed the table of data. The collected data are shown in tables, graphs and figures for analysis and interpretation. The data were described in frequency, percentage and histographs. Pie-chart were used for further clarity.

CHAPTER- IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data. Pakali HSS and Bha.Si. HSS have been selected from Sunsari district for data collection. Questionnaire and observation checklist have been used for data collection. The analysis and interpretation of data are grouped under the following headings.

4.1 Demographic condition of respondents.

4.2 Condition of sanitation of water pot

4.3 Source and condition of drinking water.

4.4 Methods apply to purify drinking water.

4.5 Understanding about drinking water.

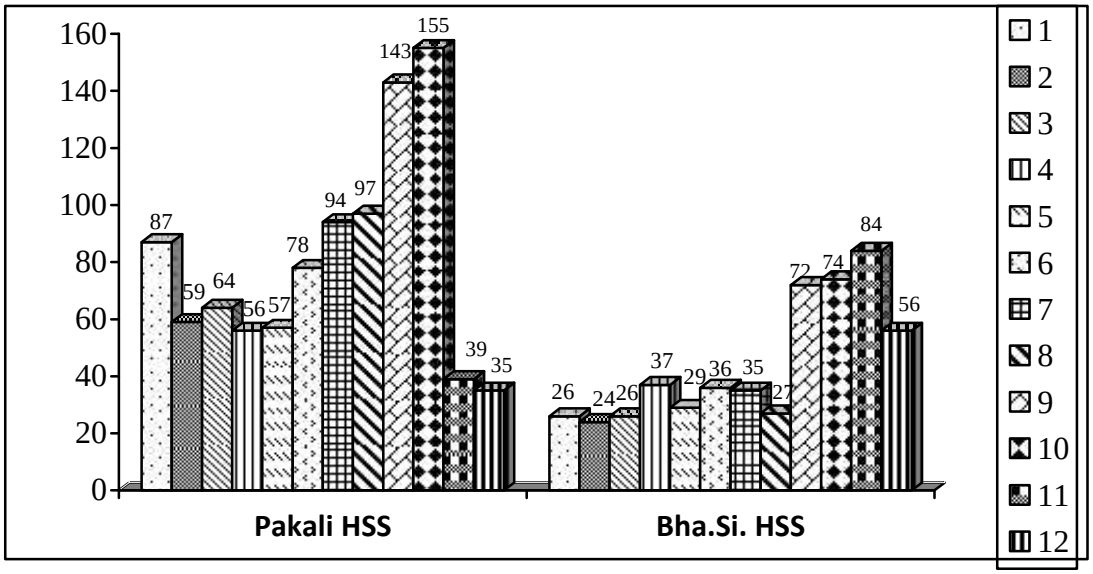
4.6 Impacts of drinking water.

4.1 Demographic condition of respondents

Students are the target group of education. Healthy students learn well. The education Rule 2059 has determined the number of students in the Terai, Hills and Himal as 50, 45 and 40 respectively in every class. The number of students of the selected schools for the study are shown in figure 2.

Figure – 2

Students' Description



Source: School Record-2071

Above figure 2 shows that the students admission rate of Pakali HSS in the Primary level was enough, in the lower secondary level high and in the secondary level was higher and in the higher secondary level was low admission rate. In Bha.Si. higher Secondary School, the admission rate of students in the primary and the lower secondary level was low and in the secondary level and the higher secondary level was enough. There are several reasons of students' reduction in community schools like lack of awareness in education, poverty, popularity of private schools etc. So the Nepal government should be alert about these problems.

4.1.1 Practice of brushing teeth

The respondents, who brushed and washed their teeth daily is good habit. Generally people who brushed teeth two time in a day is very good habit. Strong and clean teeth shows strong and healthy body. The respondents who brush and wash or don't brush and wash their teeth daily are shown in Table no.1.

Table No. -1

Practicing of brushing

Description	Number	Percentage
Not brushing teeth daily	2	0.80
Brushing teeth daily	248	99.2
Total	250	100

The above table 1 shows that 99.2 percent respondents washed their teeth daily and 0.8 percent respondents didn't brush their teeth daily.

The above information shows that more respondents (99.2 percent) brushed their teeth daily and a few respondents (0.8 percent) did not brush their teeth daily. So these respondents require health education about brushing teeth.

4.2 Condition of sanitation of water pot

The pot in which drinking water is kept should be clean. People always should clean their water pot regularly. If the water pot is kept clean, there will be no harmful pathogenic agents left and water should be also clean which comes from the source of drinking water. The water pot should be washed two or three times as needed in a day. The respondents who have kept their water pot clean daily is shown in table 2.

Table No. -2

Condition of sanitation of water pot

Description	Number	Percentage
Washing water pot daily	250	100
Not washing water pot daily	0	0
Total	250	100

The above table 2 shows that cent percent respondents washed their water pot daily. The above information shows that cent percent respondents washed their water pot daily. It is a very good habit for good health.

4.3 Source and condition of drinking water

The source from where the drinking water is obtained is called the source of drinking water. The respondents may obtain drinking water from several sources of drinking water.

4.3.1 Main source of drinking water

The main source of drinking water may be different. The main sources of drinking water which are used by the respondents is shown in table 3.

Table No.-3

Main source of drinking water

Source	Number	Percentage
Tube-well	229	91.6
Tap	9	3.6
Other	12	4.8
Total	250	100

The above table 3 indicates that 91.6 percent respondents used drinking water from tube-well, 3.6 percent respondents used tap and 4.8 percent used from other sources.

The above information shows that most of the respondents (91.6 percent) used tube-well and some respondents used tap and some used other sources of drinking water.

4.3.2 The management of drinking water in every class

The management of drinking water in every class helps the class for maintaining discipline. It avoids the respondents' repetition for going out to

drink water. The respondents who replied about the management of drinking water in every class has shown in table 4.

Table No. -4

Management of drinking water in every classes

Description	Number	Percentage
Yes	11	4.4
No	239	95.6
Total	250	100

The above table 4 shows that 4.4 percent respondents replied that drinking water was managed in every class and 95.6 percent respondents replied that it wasn't.

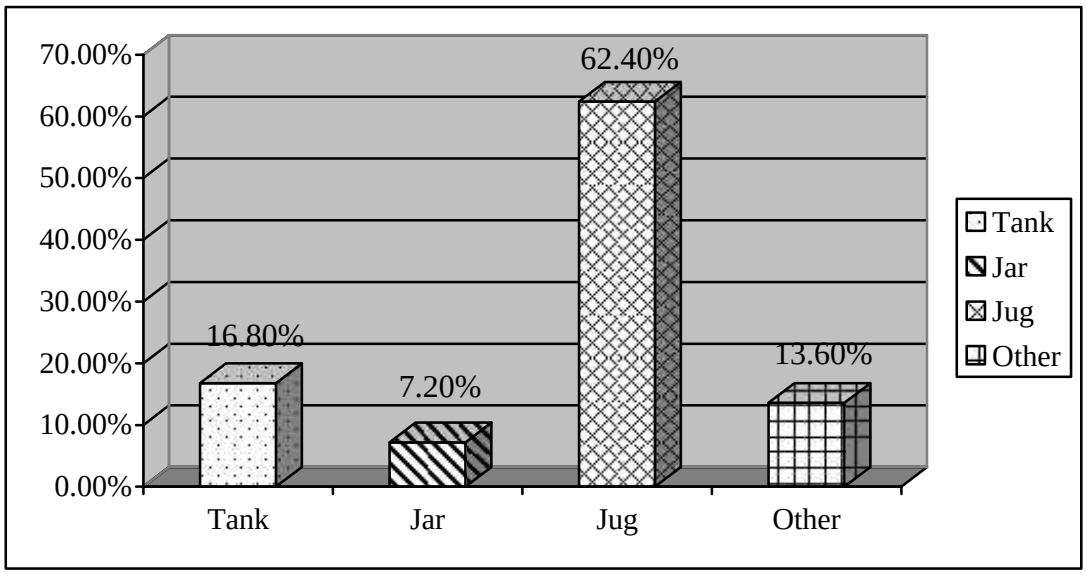
The above information shows that drinking water was not managed in every class. So the respondents got trouble in learning.

4.3.3 The things which are used for storing water

The respondents used different things to store drinking water. But, these things should be clean. The things, which were used for storing drinking water by the respondents have been shown in figure 3.

Figure No. - 3

The things which were used for storing drinking water



The above figure 3 shows that the 16.8 percent respondents replied that they used tanks for storing drinking water, 7.2 percent used jars, 62.4 percent used jugs and 13.6 percent used other things to store drinking water.

The above information shows that most of the respondents used jugs to store drinking water.

4.3.4 Number of tube-well (Source of drinking water)

Tube-well is generally the main source of drinking water in Terai region of Nepal. The number of tube-wells is different in the schools. There are a large of students in the schools but the number of tube-wells is few. It creates problems. Because of it, health of the respondents may be affected. The number of tube-wells in the schools is shown in table 5.

Table No. -5

Number of tube-well in schools

Schools	Number of tube-well	Number of Students
Pakali HSS	1	964
Bha.Si. HSS	2	526

The above table 5 shows that the number of tube-wells as source of drinking water in Pakali HSS was 1 and Bha.Si. HSS had 2. The number of students in Pakali HSS was 964 and Bha.Si. HSS had 526.

The above information shows that Pakali HSS had 1 tube-well which was used for 964 students. The ratio of tube-well and students was very different. Nearly one thousand students couldn't use one tube-well properly. So the health of them was affected. So, there should be increase in the number of source of drinking water; similarly, in Bha.Si. HSS, two tube-well wouldn't sufficient for 526 students. So there should be increase in the number of tube-well.

4.3.5 Smell in source of drinking water

The sources of drinking water are different in the Terai, Hill and Himal of Nepal. In the Terai, streams generally tube-wells and taps are available. In the hill and Himal, there are streams, taps, dhungedharas etc. available. There may be smell in the sources of drinking water. It may affect their health. The students' view has been presented in table 6.

Table No. - 6

Smell in source of drinking water.

Description	Number	Percentage
Not smell in drinking water	130	52
Smell in drinking water	120	48
Total	250	100

The above table 6 shows that 48 percent respondents felt smell in the source of drinking water and 52 percent respondents did not fell smell there.

The above information shows that 48 percent respondents felt smell in drinking water. Because of smelling in drinking water, the respondents might not drink enough water. So their health might be affected.

4.4 Methods apply to purify drinking water

In Terai area, people use drinking water generally from tube-wells. Some use taps. The drinking water from taps is generally purified. But drinking water from tube-wells would not be purified. So water should be purified.

4.4.1 Using methods to purify drinking water

Water is one of the fundamental needs for human beings. We use water for several purposes. The water which we use for drinking, cooking and bathing should be clean and safe from different kinds of pathogenic agents. If water is not clean and safe from pathogenic agents, it is necessary to apply the methods of purifying water. The methods which the respondents used to purify drinking water have been shown in table 7.

Table No.-7

Using the methods to purify drinking water

Description	**Number**	**Percentage**
Yes	220	88
No	30	12
Total	250	100
If yes, what method	**Number**	**Percentage**
Filtering	136	61.82
Boiling	76	34.54
Chemical	4	1.82
Other	4	1.82
Total	230	100

The above table 7 shows that 88 percent respondents replied that they used the method to purify drinking water and 12 percent respondents did not use any method to purify drinking water. Among the respondents who used some method to purify drinking water, 61.82 percent respondents used filtering method, 34.54 percent respondents used boiling, 1.82 percent used chemicals and 1.82 percent used other methods to purify drinking water.

The above information shows that 88 percent respondents used the method to purify drinking water and 12 percent respondents did not use any method. Among the respondents who used some method to purify drinking water, maximum respondents used filtering, 34.54 percent used boiling and 1.82 percent used chemical and 1.82 percent other methods.

4.5 Understanding about drinking water

The respondents may have different understanding about drinking water. They may use drinking water according to their understanding. If they have negative understanding they behave negatively and they have positive understanding they behave positively.

4.5.1 Understanding about safe drinking water

The respondents recognized water according to their understanding. Which water is drinkable? How can drinking water be kept safe? The respondents use drinking water according to their understanding.

Understanding about safe drinking water of respondents is shown in table 8.

Table No.-8

Understanding about safe drinking water

Description	Number	Percentage
Water without pathogenic agent	96	38.4
Clean water	154	61.6
Total	250	100

The above table 8 shows that 61.6 percent respondents understood that water without pathogenic agent is drinking water and 38.4 respondents understood that clean water is drinking water.

The above information shows that most of the respondents (61.6 percent) understood that water without any pathogenic agent is drinking water. If they

use such water they may save themselves from communicable diseases. Some respondents (38.4 percent) understood that clean water is drinking water.

4.5.2 Awareness about polluted water that causes communicable diseases

The respondents may get information that polluted water causes communicable diseases. Some may be unknown that whether polluted water causes communicable disease or not. The respondents sometimes make water polluted knowingly or unknowingly and they are also using dirty water. So the respondents should use safe drinking water. Awareness about polluted water which causes communicable diseases or not is shown in table 9.

Table No.-9

Awareness about polluted water causes communicable disease

Description	Number	Percentage
Yes	242	96.8
No	8	3.2
Total	250	100

The above table 9 shows that 96.8 percent respondents agreed that polluted water causes communicable diseases and 3.2 percent respondents didn't agree that polluted water causes communicable diseases.

The above information shows that maximum respondents (96.8 percent) agreed that polluted water causes communicable diseases. Some (3.2 percent) respondents didn't agree that polluted water causes communicable diseases. Such students need health education about polluted water and its effect on human health.

4.5.3 Conduction of orientation program about drinking water

Several organizations conduct drinking water related programs. UNICEF, WVI, Sanitation and Hygiene office, District Public Health Offices are such types of organizations, which conduct several water related programs. These organizations sometimes conduct water related orientation programs in schools. So, the conduction of drinking water related orientation programs is shown in table no. 10.

Table No. - 10

Conduction of orientation program of drinking water

Description	Number	Percentage
No conduction of orientation programs	116	46.4
Conduction of orientation programs	134	53.6

The above table 10 shows that 53.6 percent respondents replied that water related orientation programs had been conducted in the school and 46.4 percent respondents replied that drinking water related orientation program had not conducted.

The above information shows that more than fifty percent (53.6 percent) respondents agreed that drinking water related orientation programs had been conducted. This type of orientation program was very needed. Less than fifty percent (46.4 percent) respondents did not agree that drinking water related orientation programs had been conducted in school.

4.6 Impacts of drinking water

Drinking water saves life. It saves from dehydration. So drinking water should be safe. Management and condition of drinking water in the schools represents the condition of health of students.

4.6.1 Condition of Communicable disease

Communicable diseases transmit through contaminated water, food, soil, clothes, unsafe behaviour, air, dirty things etc. So we should prevent these sources. The number of students who suffered from water borner communicable diseases is shown in the table 11.

Table No.-11

Do you suffer from any communicable disease?

Description	Number	Percentage
Yes	219	87.6
No	31	12.4
Total	250	100
If yes, what disease	Number	Percentage
Diarrhoea	166	75.8
Dysentery	13	5.9

Other (common cold)	40	18.3
Total	219	100
In which season do you suffer	Number	Percentage
Asar, Shrawan, Bhadra	143	65.30
Asoj, Kartik, Mansir	18	8.22
Push, Magh, Falgun	22	10.04
Chaitra, Baishakh, Jeshtha	36	16.44
Total	219	100

The above table 11 shows that 87.6 percent respondents suffered from communicable diseases and 12.4 percent respondents did not suffer from any communicable disease. The respondents who suffered from communicable diseases, out of them 75.8 percent respondents suffered from diarrhea, 5.9 percent respondents suffered from dysentery and 18.3 percent respondents suffered from common cold.

Of the respondents who suffered from communicable disease, 65.30 percent respondents suffered in Asar, Shrawan and Bhadra, 8.22 percent respondents suffered in Asoj, Kartik and Mangsir, 10.04 percent respondents suffered in Push, Magh and Falgun and 16.44 percent respondents suffered in Chaitra, Baishakh and Jeshth.

The above information shows that more respondents (87.6 percent) suffered from communicable diseases and 12.4 percent respondents did not suffer. More respondents (75.8 percent) suffered from diarrhoea. Some respondents (5.9 percent) suffered from dysentery and 18.3 percent respondents suffered from common cold. More respondents(65.30 percent) suffered from communicable disease in season Asar, Shrawan, Bhadra, 8.22 percent respondents suffered in Asoj, Kartik, Mangsir, 10.04 percent in Push, Magh, Falgun and 16.44 percent Chaitra, Baishakh, Jeshth.

4.6.2 Condition of Sickness

Good health depends on hygienic diet, pure drinking water, regular exercise, enough rest, good habits, environmental sanitation etc. Because of using dirty water, the respondents get sick and they did not attend in classroom. The sickness of respondents has shown in table 12.

Table No.- 12

Condition of sickness

How often do you get sick?		
Description	Number	Percentage
Usually	9	3.6
Some time	210	84.0
None	31	12.4
Total	250	100

The above table 12 shows that 3.6 percent respondents got sick usually, 84 percent respondents got sick sometimes and 12.4 percent respondents never got sick due to water.

The above information shows that 3.6 percent respondents got sick usually and 84 percent respondents got sick sometimes but 12.4 percent respondents never got sick.

Table No. - 13

What treatment do you attain?

	Number	Percentage
Hospital	214	97.72
Self Healing	5	2.28
Total	219	100

The above table 13 shows that 97.72 percent respondents got hospital treatment and 2.28 percent respondents' sick had self healed.

The above information shows that Out of the sick respondents, 97.72 percent respondents got hospital treatment and 2.28 percent respondents' sick had self healed. Respondents had to get conciousness about communicable disease.

4.6.3 Problem of drinking water

The respondents may be feeling problems in drinking water of the school. Difficulties may be different for the respondents. The problem of drinking water for respondents has shown in table 14.

Table No. - 14

Problem of drinking water

Description	Number	Percentage
Yes	183	73.2
No	67	26.8
Total	250	100
If yes, what problem		
Pain in stomach	37	20.22
Nausea and Vomiting	10	5.46
Yellowing in tooth	136	74.32
Total	183	100

The above table 14 shows that 73.2 percent respondents felt difficulty in drinking water of the school's and 26.8 percent did not feel difficulty. The respondents who felt difficulty in drinking water, 20.22 percent respondents felt pain in the stomach, 5.46 percent felt nausea and vomiting and 74.32 percent respondents felt yellowing in the teeth.

The above information shows that more respondents (73.2 percent) felt difficulty in drinking water of the schools and 26.8 percent respondents did not feel any difficulty. Of the respondents who felt difficulty in drinking water, The more respondents (74.32 percent) felt yellowing in teeth, some (20.22 percent) felt pain in the stomach and some (5.46 percent) felt nausea and vomiting. So, it was necessary to purify drinking water of the schools.

4.7 Summary

This thesis entitled "Use of Drinking Water and its Impacts on the health of Students". The objectives of the study were to find out the condition of drinking water in community schools and to find out the impacts on health of students by drinking water in community schools. The research design has been based on descriptive. This study has been based on qualitative based data. The researcher had described the collected data with the help of tables. Pakali HSS and Bha.Si. HSS had been selected by purposive sampling method for the study. There were 526 students in Bha.Si. HSS and 964 students in Pakali HSS. 165 students were selected from Pakali HSS and 85 students were

selected from Bha.Si. HSS. In total 250 students were selected from both the schools from the secondary level by the purposive sampling method.

Questionnaire and observation checklist were the tools for collecting data. After collecting data from the respondents possible errors were removed. The data was proceeded manually and carefully so as to ensure its quality. The required frequency and table were generated on the basis on collected data and objectives of the data. Information was classified, categorized and sub-categorized according to the nature of the obtained data. The data analyzed through tables and percentages were used for processing, analyzing and interpreting the result.

4.8 Discussion of findings

Findings of this study are as follows:

- The total number of students in Pakali HSS was 964 and in Bha.Si. HSS was 526. 165 respondents were selected from Pakali HSS and 85 respondents were selected from Bha.Si. HSS.
- Cent percent respondents washed their water pot daily.
- For 91.6 percent respondents, tube-well was the main source of drinking water, for 3.6 percent respondents tap and for 4.8 percent respondents other source were the main sources of drinking water.
- Ninety five point six percent respondents replied that drinking water was not managed in every class but 4.4 percent respondents replied that it was managed.
- Sixteen point eight percent respondents used tanks to store drinking water, 7.2 percent used jars, 62.4 percent used jugs and 13.6 percent used other things for storing drinking water.
- The number of tubewells (source of drinking water) in Pakali HSS was 1 and Bha.Si. HSS was 2 which are not enough.
- Fourty eight percent respondents felt smell in drinking water and 52 percent did not feel it.
- Eightyeight percent respondents purified the water before drinking and 12 percent respondents did not purify. Of the people who purified water, 61.82 percent used filtering method, 34.54 percent used boiling, 1.82 percent used chemical and 1.82 percent used other methods.

- Sixtyone point six percent respondents understood that safe drinking water is the water without pathogenic agents and 38.4 percent respondents understood that clean water is the safe drinking water.
- Ninety six point eight percent respondents replied that polluted water causes communicable diseases and 3.2 percent respondents replied it doesn’t.
- Fiftythree point six percent respondents replied that orientation programs of drinking water were conducted in the school and 46.4 percent respondents replied that were not conduct.
- Eightseven point six percent respondents suffered from communicable diseases and 12.4 percent respondents did not suffer from any communicable diseases. The respondents who suffered from communicable diseases, 75.8 percent respondents suffered from diarrhea, 5.9 percent respondents suffered from dysentery and 18.3 percent respondents suffered from common cold.
- Three point six percent respondents got sick usually, 84 percent respondents got sick sometimes and 12.4 percent respondents never got sick due to water. 97.72 percent respondents got hospital treatment and 2.28 percent respondents sick were self-healed.
- Seventy three point two percent respondents felt difficulty in drinking water of the school's and 26.8 percent did not feel difficulty. Of the respondents who felt difficulty in drinking water, 20.22 percent respondents felt pain in the stomach, 5.46 percent felt nausea and vomiting and 74.32 percent the respondents felt yellowing in teeth.

CHAPTER- V
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The conclusion derived from the findings which try to answer the research questions of the study area is as follows.

Admission rate of students in lower classes in community schools was being less.

There were unhealthy understanding and unhealthy practices about personal health behaviour.

There was no enough source of drinking water in community schools.

There was no management of the water and soap in toilet and soap was not managed near the source of drinking water.

Distance between the source of drinking water and toilet was less than fifty feet. Some respondents did not use the method of purification of drinking water. Some respondents disposed the waste water at improper places.

Some health teacher did not have the background of health and physical education.

There were some healthy practices for respondents that cent percent respondents washed their water pot daily.

Lack of soap in toilet was found water wasn't managed in toilet, enough drinking water wasn't managed, such unhealthy understanding and practices were found. Therefore, the government should show proper attention to them.

The impacts of drinking water on health of students was not satisfactory. Students suffered from sickness, diseases and felt difficulty in drinking water.

Overall, it is concluded that, the understanding and practices of the respondents regarding the use of drinking water and their knowledge on its impacts were found to be unsatisfactory. The management of drinking water in the schools was unsatisfactory. The schools should be effortful for solving such problems so that the students would be healthy and would get chance to read in a healthy school.

5.2 Recommendations

5.2.1 Policy related recommendations

The government should make the policy that students must get safe drinking

water. They must use toilet and must get soap after using toilet. Policy related recommendations are as follows:

- Government should create policy about safe drinking water. Safe drinking water should be managed in schools.
- Schools should manage the toilet, water and soap in toilet.
- Schools make the rule that all teachers and students should use soap after using toilet otherwise they should be fined.

5.2.2 Practice related recommendations

- Students should dispose the waste water at khadal or sewage.
- Tube-wells (source of drinking water) should be at least fifty feet far from toilet and should be dipped more than 100 feet underground.
- The number of tube-wells should be increased.
- There should mange the soap in toilet and near the source of drinking water.
- The smell of drinking water should be minimised.
- Purified drinking water should be used.
- Health teachers should have the majored in the major subject of health and physical education.
- Fields of schools should be plane.

5.2.3 Further Research Related Recommendations

- Comparative research has to be done between community schools and private schools on the topic of drinking water.
- Does the drinking water influence educational out comes?
- Further research should be on factors influencing or polluting safe drinking water.
- Further research should be done on both private and government schools in wide range.
- Further research should be also based on teachers, staffs and co-workers.

APPENDIX – I

Tribhuwan University
Faculty of Education
Janta Multiple Campus
Health Education Department
Itahari Sunsari, Nepal
2072

Questionnaire

Dear respondent, this questonairre is very vital for researcher. Please fill your opinion and fact which you know without any hesitation. Your opinion will be kept confidential. Your information helps to prepare research report.

Date:- ……..

1. Name of Respondent :
2. Rank :
3. Name of School :
4. Address of School :

A) Demographic Conditon of respondents

S. N.	Class	Boys	Girls	Total
1	9			
2	10			
3	11			
4	12			
Total				

Tick (✓) the best answer.

B) Sanitation related behaviour of respondents

1. Do the students wash their hands with shop after using toilet?
   a) Yes b) No
2. Do the students wash their hands before eating food?
   a) Yes b) No
3. Do you bath daily?
   a) Yes b) No
4. Do you wash your mouth daily?
   a) Yes b) No
5. Do you wash your water pot daily?
   a) Yes b) No

6. What do you use after toilet to wash hands?
   a) Only water b) water and soap c) water and kharani
   d) Other ……..

C) Source and condition of drinking water

1. What is the main source of drinking water of this school?
   a) Tubewell b) Tap c) Other ……
2. What is the distance between source of drinking water and toilet?
   a) Below 20 ft. b) Above 20 ft. and below 50 ft. c) Above 50 ft.
3. Does the drinking water supply by pipe in every class?
   a) Yes b) No
4. What is the thing which is used for storing drinking water?
   a) Tank b) Jar c) Jug d) Other ……
5. How many tubewell does in this school have?
   a) 1 b) 2 c) 3 d) …….
6. Is arsenic of water tested in thes school ?
   a) Yes b) No
7. Is there any kind of smell in water of thes school ?
   a) Yes b) No

D) Methods apply to purify drinking water.

1. Do you use any method to purify water?
   a) Yes b) No
2. If you have, what method do you use for purifying water?
   a) Filtering b) Boiling c) Chemical use d) Other
3. If you use a method to purify water, how do you use this method? Write.

↳ ……
……...
……...

E) Attitude about drinking water.

1. What do you mean by safe drinking water? Write your view.

↳ ……
……...
……...

2. Does polluted water cause any communicable disease?
   a) Yes b) No
3. Is any orientation programe of safe drinking water conducted?
   a) Yes b) No

4. Do you think there is safe drinking water in your school ?
   a) Yes b) No
5. Is there any difference of using drinking water of teacher and students ?
   a) Yes b) No

F) Management of water and major subject of health teacher.

1. Which is the major subject of health and physical teacher of this school?
   a) Health b) Science c) Math d) Other ……
2. Do the water manage in the toilet?
   a) Yes b) No
3. Does the water keep stay in the field in rainy season?
   a) Yes b) No
4. Where has the waste water disposed?
   a) Khadal b) Sewage c) Field d) Other

G) Impact of drinking water.

1) Do you suffer from any communicable disease?
   i) Yes ii) No
2) What disease do you generally suffer from?
   i) Diarrhoea ii) Dysentery iii) Cholera iv) Other…..
3) In which season do you generally suffer from disease?
   i) Asar, Shrawan, Bhadra ii) Asoj, Kartik, Mangsir iii) Push, Magh, Phalgun iv) Chaitra, Baishakh, Jeshth
4) Do you feel any difficulty due to drinking water?
   i) Yes ii) No
5) What difficulty do you feel?
   i) Pain in Stomach ii) Nausia iii) Vomitting iv) Yellowing tooth v) Other…..
6) How often do you fall sick?
   i) Seldom ii) Sometimes iii) Often iv) No Response
7) Which form of treatment you get when you fall sick?
   i) Hospital ii) Traditional healer iii) Self medication iv) None v) Other…..

APPENDIX – I I

Observation Checklist

Name of School : ……. …… Date : …….

1. Source of drinking water and its number.
   a) Tubewell (……) b) Other ……
2. Available of soap and its number in toilet.
   a) Available (……) b) Not available
3. Sorounding condition of source of drinking water.
   a) Cemented b) Dirty c) Grass d) Other……
4. Available of soap near source of drinking water.
   a) Yes b) No
5. Water supply in toilet.
   a) Yes b) No
6. Distance between source of water and toilet.
   a) Less than 50 fit. b) 50 and more than 50 fit.
7. Things for using drinking water.
   a) Jug b) Glass c) Bottle d) Other ……
8. Things in which to store drinking water.
   a) Pot b) Jar c) Jug d) Tank
9. Condition of water sorounding school.
   a) Yes b) No
10. Available of sewage in the school.
    a) Yes b) No
11. If any student suffers from water borne diseses.
    a) Yes b) No

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