

Research Article

Students' Perception towards the Drinking Water Facility at Janapriya Multiple Campus, Pokhara

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Abstract

The study entitled " Students' perception towards the drinking water facility at JMC Pokhara" is carried out to find out the perception of drinking water and examine the impact of drinking water on student's health in Janapriya Multiple Campus of Kaski district. The descriptive method was applied to meet the objectives and the survey technique was used to collect necessary information. All the students in JMC(4350) were the population of this study. The sample size was 160 through lottery method. The questionnaire and observation schedule were the major tool of data collection. Campus has its own boring system from 2071/ 0/ 17 B.S. The water was lab tested in the beginning by the microbiology department and recommended that it was safe. Most of the respondents felt that it was needed to test the water time to time and notified to concern people. Nearly 80 percent students said that the water was safe and pure but only eleven students complained. Only 6 students bought it and other 5 brought boiled water from their homes. Thirty one students felt water born diseases during their JMC period but they weren't ensure either from their college water or residential water. Students' perception on water availability in JMC was satisfactory.

Key words: Lab test, notified, quantity, water. waterborne diseases

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Introduction

Water is one of the most basic elements for all living beings on this earth. About 70 percent of the human body is made up of water. Human being can live without food for sometime but not without water. Water is used for various purposes such as drinking, cooking food, washing clothes, bathing, growing crops, construction work and for generating hydro-electricity etc. Water plays vital role in the development of the country if it is used wisely. If pure drinking water is supplied, citizen will be healthy and they can contribute to their country as a result development of a country will be rapid.

Various United Nation (UN) agencies reported roughly 780 million people around the world lack access to clean drinking water. The World Health Organization (WHO) estimates 6.3 percent of all deaths are caused by limited access to safe drinking water. The Millennium Development Goals, one of which includes a target to halve the proportion of people without access to safe drinking water and basic sanitation by 2015. According to the (U.N.), more than 14,000 people die daily from water-borne illnesses. The world is on-track to meet the Millennium Development Goal (MDG) water target based on the indicator "use of an improved drinking water source but, at the current rate of progress, this still will leave 672 million people without access to improved drinking water sources in 2015, and possibly many hundreds of millions more without sustainable access to safe drinking water (WHO & UNICEF 2012).

The government of Nepal has not given much more attention for drinking water supply at higher education. No doubt, this is a rich country around the world for water resources. Drinking water quality varies from place to place, depending on the condition of the source water from which it is drawn and the treatment it receives. Drinking water or potable water is water safe enough to be consumed by humans or used with low risk of immediate or long term harm. In most developed countries, the water supplied to households, commerce and industry meets drinking water standards. Over large parts of the world, humans have inadequate access to potable water and use sources contaminated with disease vectors, pathogens or unacceptable levels of toxins or suspended solids (Leggett, Brown, Stanfield, Brewer, & Holliday 2001).

The City University of New York, campuses are all connected to the New York City water system which is considered to be one of highest quality municipal water system in the united stated. The New York City Department of Environmental Protection regulates and protects reservoirs and the water is tested more than half a million times a year at various points throughout the system. Additionally Department of environmental protection adjusts the (PH) of the water to minimize corrosion and adds phosphoric acid to create a protective film on pipes to prevent the release of lead and other metals.

According to Kantipur television (11 August 2016) about the title Polluted drinking water in Kathmandu concluded that water from the tap was mixed with drainage. Similarly water of jar and mineral water were not safe because of coli form, the germ found in faeces. Water from underground was with the mix of Arsenic so the government said that it wasn't safe water for drinking purpose. NAST collected water samples from different places of Kathmandu which was provided to public by Water Supply Corporation and those samples were lab tested. It was found that 50 percent samples had germs Ecoli so such water shouldn't provide to public. Food Technology And Quality Control Division (FTAQCD) collected 79 samples of Mineral water and they were lab tested and concluded that 23 percent water found low quality and aware to the company . Consumers compelled to drink such water as a result there were so many water borne diseases. The government should control to all concerned

companies and the Water Supply Corporation (WSC) in time and makes them provide safe and pure drinking water (You Tube Video Translated on 13th February, 2018).

Gyawali (2015) made the research on a study of drinking water accessibility at government higher secondary schools in Pokhara. The study was conducted at ten selected schools. The objectives of the research were to find out the condition of drinking water among 10 higher secondary schools in Pokhara, students from class 11 and 12 were selected through random sampling. Students of all faculties were respondents. There were 74 boys and 44 girls altogether 118 were in total. Similarly, ten head masters, ten chairmen of school management committee, ten chairmen of parent's teacher association were selected from every school for data collection period. An observation schedule was also prepared and put the remark by the researcher. It was targeted particularly to know water purification system, water distribution, water availability, and water quality status and school policy regarding to drinking water. Although, water accessibility was not a big concern in selected school but the quality of drinking water was poor. No doubt, there was euro guard, filter and tap at schools but it seemed to be insufficient. Somewhere tap was broken but the whole water distribution system was not much bad at all.

Once the researcher asked students to provide drinking water nearby Bachelor in Business Administration (BBA) building. Students replied whether it was the safe water. They showed the glass, filter pot and Euro guard. The researcher had the queries to assess the drinking water availability in Campus and the relation with the students' health. There were so many questions aroused whether the students were happy or not with the facilities of drinking water. Similarly the source of drinking water safe? Is the facility sufficient or not? What are the problems they faced with the drinking water, etc. the objectives were to find out the perception on drinking water in JMC and to examine the impact of drinking water on student's health.

Data and Methods

This study was based on descriptive design in JMC on students' perception of drinking water. Quantitative method has been followed in this research. Both primary and secondary source of data were used in the study. Students of JMC were the population of the study. The students of bachelor and Master level from Humanities and Social Science, Education, Management and Science faculties are the population. According to administration section there were 4350 students. Multi stage sampling techniques have been used. First JMC is chosen on the basis of convenience method. Forty students in each faculty were taken through quota sampling method. One hundred sixty students were taken as the respondents through random sampling method. All available students inside the campus classroom were taken and students who were absent while talking data were excluded.

The observation sheet, questionnaire with open and close type questions were the major tools of data collection. Questionnaire were pre-tested at Prithvi Narayan

Campus Pokhara to get its reliability and validity. Then the researcher prepared the tools as receiving feedbacks from the respondents and the supervisors. First of all, the researcher took authority to do the research on the topic from JRCC. Being a lecturer of such campus, the researcher took permission from the Campus Chief to meet the students and stakeholders. Afterwards, the researcher told them about the fact of the visit. Then the researcher provided questionnaire and collected filled questionnaire. The researcher observed all the related things to drinking water and filled the observation sheet. Those facts and figures were analysed in the descriptive manner. A few statistical tools such as percentage is used to analyzed data. All the data were presented in tables. Necessary comparison were done with other's finding conclusion.

Results and Discussion

Quantity of Drinking Water

Generally an adult needs at least 3 to 4 liters drinking water daily for the good health (WHO, 1993). Every day people lose water through their breath, perspiration, urine and bowel movements. To function human body properly, an individual must replenish its water supply by consuming beverages and foods that contain water. So how much fluid does the average, healthy adult living in a temperate climate need? The Institute of Medicine determined that an adequate intake (AI) for men is roughly about 13 cups (3 litres) of total beverages a day. The AI for women is about 9 cups (2.2 litres) of total beverages a day. Everyone has heard the advice, "Drink eight 8-ounce glasses of water a day." That's about 1.9 litres, which isn't that different from the Institute of Medicine recommendations. Students generally stay 5 to 6 hours in the college. They need to eat breakfast and snacks. They need to drink safe and pure drinking water. Students were asked how much water they drank while they were staying in the college.

Table 1

Quantity of Drinking Water in College

Quantity	Education	Management	Humanities	Science	Total	Percent
Half litre	5	7	11	5	28	17.50
One litre	5	7	11	10	33	20.62
Two litre	3	3	0	6	12	7.50
It depends on the situation	27	20	18	19	84	52.50
Not drinking college water	0	3	0	0	3	1.87

Total	40	40	40	40	160	100
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Source: Field Survey, 2017.

Table 1 shows that 17.50 percent students drank half litre, 20.62 percent drank one litre, 7.50 percent drank two litre and majority 52.50 percent drank water as the situation. Only 1.87 percent students didn't drink college water. They carried boiling water from their homes. According to Kerry, Larry, & Charles (n.d) the basic minimum quantity is 2 gallons per pupil per day. If the building is fully equipped, including showers and kitchen facilities.

It's pretty common knowledge that drinking enough water is essential to detoxification, healthy metabolism, & overall health. The usual figure given is about 8 glasses of water (64 ounces or about 1.9 liters) for an adult, though this varies based on climate, lifestyle, physical condition, and exercise habits. This water calculator is a useful tool for getting an idea of how much water is needed per day. Drinking water at the correct time maximizes the positive effects on the human body. Everyday 2 glasses of water after waking up helps activate internal organs. It's best to sip and not chug these, and if two feels like too much, just drink one. Similarly, 1 glass of water 30 minutes before a meal (but not any closer to eating time!) helps digestion. Then 1 glass of water before taking a bath helps lower blood pressure and 1 glass of water before going to bed is also beneficial for cardiovascular health (WHO& UNICEF, 2012).

Time Spent for Drinking Water

Students came to college in the morning at 5:55 Or 10:55 after some walk either from Ratna Chowk or Airport Chowk or little further so it is better to drink a glass of water before entering the class .If they got water in hands or nearer they could drink as they like. The researcher wanted to know that how far the water and what time they got it when they wanted to drink .The responses are shown as in table.

Table 2

Time Spent for Getting Drinking Water

Time Spent for Drinking Water	Number of Respondents	Percent
Get water within a minute	71	44.37
Get water within 2 minutes	50	31.25
Get water within 5 minutes	28	17.50
Get water more than 5 minutes	11	6.87
Total	160	100

Source: Field Survey, 2017.

Table 2 reveals that how much time they spent to drink water. Generally in the same class they had to spend different time to drink water. Master students got bottle water in their own classes so they had water in their hands as a result they got water within a

minute. But other students needed to go ground floor so they took more time . As their replied many students 44.37 percent students drank water within a minute. Similarly 31.25 percent students could drink water within two minute .Nearly one quarter students 24.23 percent took 5 minute or more time to drink water. It seems good when students want water they should have it nearby them or easy access.

Students were asked whether the quantity of drinking water that they received was adequate or not . Two third students 66.25 percent replied that it was sufficient. Similarly twenty five respondents out of one hundred sixty (15.62) replied that it wasn't sufficient. Likewise 18.12 students replied that it was poor.

Water is consumed daily in large amounts by human. It is responsibility of the school districts to provide safe and pure drinking water. Ideally, the water supply should be obtained from municipal sources. When this isn't possible, well should be drilled (Kerry, Larry, Charles, n.d). Most schools and colleges obtain their water from established public water. These supplies are under the surveillance of the health department, and the school properly can accept. This supervision as adequate, some schools provide their water supplies, usually by drilling wells. A deep more than 30 feet drilled well is the recommended water sources for a school when no public supply is available (Anderson,1972).

Drinking Water Access Points

Fountains with running water fountains provide the most sanitary drinking facilities for the schools. One fountain per seventy five pupils is an acceptable standard (Anderson, 1972). Sanitary drinking fountains should be strategically placed throughout the school building. These fountains should be easily accessible to persons in wheelchairs and should be placed in such a way as to minimize safety hazards. It is better if drinking fountains are placed in wall recesses rather than projecting into hallways The fountains should be of the (Jet) type as opposed to (bubblers).Further , the drinking fountains should be designed for easy cleaning: this cleaning should be occur several times daily. (Kerry, Larry, Charles,n.d).

A drinking fountain, also called a water fountain or a bubbler, is a fountain designed to provide drinking water. It consists of a basin with either continuously running water when turn on. Modern indoor drinking fountains may incorporate filters to remove impurities from the water to reduce its temperature. Students were asked how many fountains were there in JMC.

Table 3
Fountains of Drinking Water in College

Number of Fountains	Education	Management	Humanities	Science	Total	Percent
Less than five	23	5	23	28	79	49.37
Five to ten	3	6	5	6	20	12.50
More than ten	6	11	2	4	23	14.37
Others	8	18	10	2	38	23.75
Total	40	40	40	40	160	100

Source: Field Survey, 2017.

Table 3 reveals that 49.37 percent students said there were less than 5 fountains. Similarly 12.50 percent told that there were five to ten fountains.. Nearly one quarter 23.75 percent students replied that they didn't know the numbers of fountains in the college. According to observation there were 2 fountains on the buckets at ground floor, 2 at first floor and one in at middle of first and second floor of main building. similarly 5 buckets and 5 steel glasses were found at BBA building. Only one jar with cold and hot water was placed on Maitri building. All together there were only 11 fountains in JMC except in the canteen. There were nearly 3094 in the morning and 1256 in day time. Nearly one quarter got bottle water in their classes as a result it seems good ratio because it is in the morning. One fountain had the load of two hundred students in the morning and only one hundred in day shift. It was inefficient in morning time in the comparison of C. L. Anderson's recommendations.

Students often expressed a desire for chilled water. While some fountains were certainly inviting and deliver clean-tasting water, this is certainly not the case in everywhere. And water fountains may not be the best way to ensure adequate access to drinking water. Imagine a busy lunchroom with a hundred students lining up to grab a sip of water from a fountain. It's pretty difficult to get a substantial drink of water for them. So the location and number of fountains were the major things to fulfil the thirst in time.

(Kerry, Larry, & Charles, n.d).wrote on their book on organization of school health programme that there should be a sufficient number of fountains throughout the facility to meet the daily demands. There should be at least one fountain per floor and at least one fountain for every one hundred students.

One quarter of respondents 25.65 percent said that those fountains were at the ground floor. Similarly 28.12 percent said that those fountains at the middle floor. Likewise

21.25 percent respondents said those fountains were in every floor. Only 12.50 percent students replied that those fountains were in the canteen. Rest of 12.50 percent students didn't know where were those fountains. MBS students got the bottle water in their own classroom so they suggested to provide the bottle water in every classes.

Diseases Due to Water

Health may be affected by the ingestion of contaminated water either directly or through food; and by the use of contaminated water for purpose of personal hygiene and recreation .The term water -related diseases includes the classical water-borne diseases. Developing countries carry a heavy burden of water-borne diseases the heaviest being the diarrhoeal diseases . Water -related diseases may be classified as follows: In the hilly areas the sources of water very far and limited, there was no sufficient water in urban areas. Diseases like dysentery, diarrhoea, typhoid and cholera spread due to unsafe and polluted water. The water of Terai suffered from skin diseases due to presence of arsenic in the tube well water. Only 31 students out of 160 felt the following health diseases due to the water.

Table 4

Diseases Due to Drinking Water

Diseases	Education	Management	Humanities	Science	Total	Percent
Diarrhoea	4	3	1	6	14	45.16
Cholera	0	1	1	1	3	9.67
Stomach pain	2	3	3	6	14	45.16
Worm	0	2	2	1	5	16.12
Dysentery	0	1	2	1	4	12.90
Gastroenteritis	0	0	0	1	1	3.22
Guardia	0	0	0	1	1	3.22
Hepatitis	0	0	0	0	0	0
Others	0	4	0	0	4	12.90
Total	7	15	9	17	48/31	100

Note: There are multiple response alternatives for this table so the sum of all categories may not be equal to the total cases or respondents.

Sources: Field Survey 2017

Table 4 shows that 31 out of 160 students felt waterborne diseases while running in JMC. Students were asked what the diseases were felt or seen . Diarrhoea and

stomach pain were the major health problems seen which were 14 in numbers. They didn't feel sure of it whether it was due to college water or out of college water. Only five respondents were found suffered from worm. Students only stayed 6 hours in the colleges and rest of the time they lived in their home and they drank water where they stayed . Above mentioned diseases were seen on students so the campus always aware whether the water was safe or not. Most of the respondents 122 out of 160 students satisfied with the water of JMC

Conclusions

The study is concluded that the drinking water is sufficient as the students ratio. Most of the students satisfied with the water of JMC. Students were aware how to handle drinking water. It was known that campus had tested and proved that the water of JMC boring was good for the health, when it was lunched. Students as well as teachers wanted to test it before and after the monsoon so they are confident about the drinking water.

According to students storing pots, glasses, jugs and storing pots were needed to wash daily. Filter of Euro guard should be changed time to time. It is better to put the buckets at every floor of each building, The bad is seen that some students dipped the jug to take water without opening the tap that is why some dust particulars insert inside the buckets . Soap, water and towel should manage near by the toilet or hand washing bin to minimize the water borne diseases. Only 31 out of 160 students felt water born disease in their college life in JMC but they didn't sure whether it might be the result of campus water or home water. According to campus administration filter of Euro guard, glasses, mugs and pots were changed time to time and wasl daily. The campus has the policy to make water corner in very floor of every building.

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