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**ASSESSMENT OF WATER BORNE DISEASES BURDEN AND POTENTIALLY
BIOHAZARDOUS AGENTS IN DRINKING WATER OF DISTRICT SHAHEED
BENZAEEERABAD**

**ALI AKBAR RAHU¹, ALLAH BUX GHANGHRO^{*2}, AFSHEEN MUSHTAQUE SHAH²,
IRSHAD HUSSAIN GHANGHRO³, MAHVISH JABEEN CHANNA⁴**

¹Peoples University of Medical & Health Sciences for Women, Shaheed Benazirabad,

²University of Sindh, Jamshoro

³Water testing & surveillance laboratory, LUMHS Jamshoro,

⁴Faculty of community medicine & public health sciences, LUMHS Jamshoro

***Correspondence: Prof. Dr. Allah Bux Ghanghro: Institute of Biochemistry, University of
Sindh, Jamshoro; E-mail. allah.bux@usindh.edu.pk; mahvishj.channa@gmail.com;**

Contact Number: +923003049628

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ABSTRACT

Biohazard agents figure in drinking water concern for different waterborne-illnesses (viral, bacterial and protozoan infections) internationally reported, poor quality (physical, chemical and biological contamination) of drinking water increasing water pollution not only deteriorates water quality, but also contributes to public health problems, economic stress and social disprosperity. Potential biohazards Agents can cause sporadic waterborne disease or outbreaks, Different Physico-chemical parameters (pH, Electric conductance (EC) , Salinity , TDS (Total Dissolved Salts) , Cl, Co, Ni, Zn, Mn, Fe, Cd and As), Bacteriological contamination according to PSQCA (Pakistan Standard Quality Control Authority)/WHO models were examined. The outcomes suggests that biohazards may be resulted in outbreak of water borne diseases and it was observed that quality of drinking water of the study area is unsafe for human consumption.

Keywords: Biohazard, water borne, disease burden

INTRODUCTION

The Nawabshah region is situated at the focal point of the Sindh area and Nawabshah city is the correct focal point of the Sindh region and is the regulatory head quarter of the region and in addition taluka. The general population in the towns for the most part utilize groundwater for drinking reason, yet in Nawabshah city, the groundwater and surface water careful water supply plan is utilized for drinking reason. The atmosphere of the region is hot and dry however tumbles to - 4 0C in December to February (1). The physical, chemical and biological quality of drinking water is controlled by natural and anthropogenic factors (domestic, industrial activities and agricultural run-off). Increasing water pollution not only deteriorates water quality, but also contributes to public health problems, economic stress and social disprosperity (4,5,6,7). Exposure to waterborne pathogens can occur via ingestion, inhalation, and/or direct contact with contaminated water. Waterborne diseases vary in severity from mild self-limiting gastroenteritis to fatal diarrhoea. The different types of waterborne pathogens identified to-date broadly fit under three categories: bacterial, viral, and protozoal pathogens. Agents in all three pathogen categories can be introduced to water sources

via animal and/or human faeces, and then once ingested, grow and reproduce in the animal or human gastrointestinal tract (1). These pathogens can cause sporadic waterborne disease or outbreaks, depending on a variety of factors, such as pathogen type, pathogen virulence, infectious dose, geographical distribution, host factors, and ecosystem factors.

The Water Quality Report (2004) of the Pakistan Council for Research on Water Resources (PCRWR) shows that in Pakistan around 30 percent and 40 percent of all reported diseases and deaths are attributed to poor water quality respectively. Moreover, the leading cause of deaths in infant and children up to age 10 years age as well as mortality rate of 136 per 1000 live births due to diarrhoea is reported while every fifth citizen suffers from illness and disease caused by polluted water. Moreover, in Karachi alone, more than 10000 people annually of renal infection due to polluted drinking water.

A recent study by Ahmed and Sattar (2007) shows that the quality of drinking water is highly significant with formal education and media exposure. Lack of awareness through formal education or through media can be regarded as the main function contributing

waterborne diseases and associated health hazards. Contamination of water assets with overwhelming metals, particularly Pb and Cd is a wellbeing related issue in many parts of Asia and rest of the world. It centered the consideration of the ecological researchers to concentrate the contaminated locales in detail and propose the measures for their remediation. Substantial metals like Zn and Cu in drinking water are fundamental in low focus, however most of the overwhelming metals introduce in the drinking water might be poisonous and hurtful for the wellbeing. Substantial metals are the components with sub-atomic weight more prominent than 53, thickness more noteworthy than 6 gm/cm³ and nuclear number more prominent than 20 (9). Characteristic wellsprings of the overwhelming metals are weathering of minerals and soils. Couple of substantial metals like, Fe, Mn, Mo, Cu and Zn are essential in low fixations for every living life form, while the greater part of them present danger risks at high focuses, then again As, Hg, Cd and Pb have no any natural significance and are exceptionally dangerous to wellbeing (10). Various endeavors have been made to look at water nature of surface and groundwater from various parts of the nation including Sindh area (11-16). The reviews are additionally completed to decide

the metal substance in the water bodies. We prior detailed the arsenic fixation in groundwater of Khairpur and Matiari regions of Sindh area and nature of ground water as for substantial metals and physico-compound parameters of a few sections of the locale Nawabshah (17).

MATERIALS AND METHODS

Ponder Area the specimens were gathered from various villages of District Shaheed Benazeerabad former name Nawabshah. 37 ground water samples were collected randomly from the study area into clean 1.5L plastic bottle washed twice with sample at the sampling point. All the reagents used were of analytical grade and all the glassware used, was washed properly with double distilled water before use. Odor and color were determined by sensing and visual organ. Turbidity was measured with digital turbidity meter (PCCHECKIT, Germany), Electrical Conductivity (EC) Salinity, Total Dissolved Salts (TDS) and pH were measured with conductivity meter (Model no: sanso-direct con 200). The metal standard solutions were prepared by dilution from 1000 mg/L stock solution of each metal. Co, Ni, Zn, Mn, Fe, Cd metal concentrations were determined using Perkin-Elmer atomic absorption spectrometer (AAS-PEA-700) (available at Institute of Advanced Research Studies in

Chemical Sciences, university of Sindh, Jamshoro) with standard burner head and air acetylene flame at the conditions recommended by the manufacturer. The analysis was carried out in triplicate with integration time 3 sec and delay time 3 sec. (18,19,20) The Arsenic was determined by Arsenic kit method MERCK the detection range 0.005mg/L to 0.5mg/L (21). The bacteriological examination of water samples was assessed for total coliforms count (TCC) and Total Faecal coliforms (TFC). The samples were processed in a laminar flow hood using sterilized culture media. The bacterial load of water samples was estimated by Most Probable Number (MPN) technique as per Standard Methods for the Examination of Water and Wastewater (30) The SPSS-18 was used for statistical analysis.

RESULTS:

In the present study, all water samples were colorless and odorless due to the ground nature of water samples and depth of boring. The physical parameters observed in this present study are in conformity with the data reported in previous research works in which (22). According to the WHO standards for drinking water the drinking water for human consumption should be colorless, odorless and tasteless. The turbidity of all

samples is <5 NTU, pH value of all water samples was found within the WHO permissible limit i.e 6.5 to 8.5. The maximum and minimum values of Electric conductance (EC) (223 μ S/cm to 2570 μ S/cm) whereas the normal WHO value of electric conductance is 1562 μ S/cm, Salinity (0.2 % to 1.4%), TDS (Total Dissolved Salts) (580 mg/L to 1682mg/L) and Chloride (Cl⁻) is major inorganic components, which may destroy the quality of water for drinking purpose Chlorides (136 mg/L to 399 mg/L) were determined from the collected water samples, WHO limits set by 250mg/L for chlorides. The similar results were described by (16) that ground water samples from Bahawalpur City, Pakistan. Total dissolved solids Total Dissolved solids (TDS) refer to the amount of inorganic substances suspended or dissolved in water. The normal permissible value for TDS in drinking water is 500 mg/L to 1000 mg/L. These results were in accordance with the results formerly stated for ground water sources from district Matiari, Sindh (23).

Furthermore arsenic is known as a potent carcinogen and poses a serious public health issues in many countries like Bangladesh, India, China, Vietnam, Nepal and Myanmar (24). Cobalt, Nickel, Zinc, Manganese, Iron, Cadmium, and Arsenic is an essential

element for humans and plays a beneficial role in normal growth and reproduction (25). The concentration of Cobalt (9.6ppb to 101 ppb), Nickel (11.2 ppb to 1348 ppb), Zinc (14.4 ppb to 60.0 ppb), Manganese (25 ppb to 251ppb), Iron (0.0 ppb to 2.7 ppb) and Cadmium (64.5 ppb to 462 ppb), Arsenic (0.005 mg/L to 0.025mg/L) were shown in table 01.

Total number of subjects (male and female) of some common water borne disease were diagnosed and recorded at taluka hospital administration, district Shaheed benazeerabad during 2014, Water Borne

Diseases i.e; Typhoid Fever, Shigellosis (BasillaryDysentary), Amoebiasis, Acute Poliomyelitis Viral Hepatitis (A & E), Ascariasis. Burden of diseases was found to distributed in different age group of male and female at taluka Hospital Sakrand during 2015(table 02). Deaths ratio was also recorded during the study year at study area due to Typhoid, Shigellosis (BasillaryDysentary), Viral Hepatitis(A& E) , 29, 01 and 17 respectively, was reported at casualties and were not diagnosed properly due to non-availability of such laboratory at remote areas.

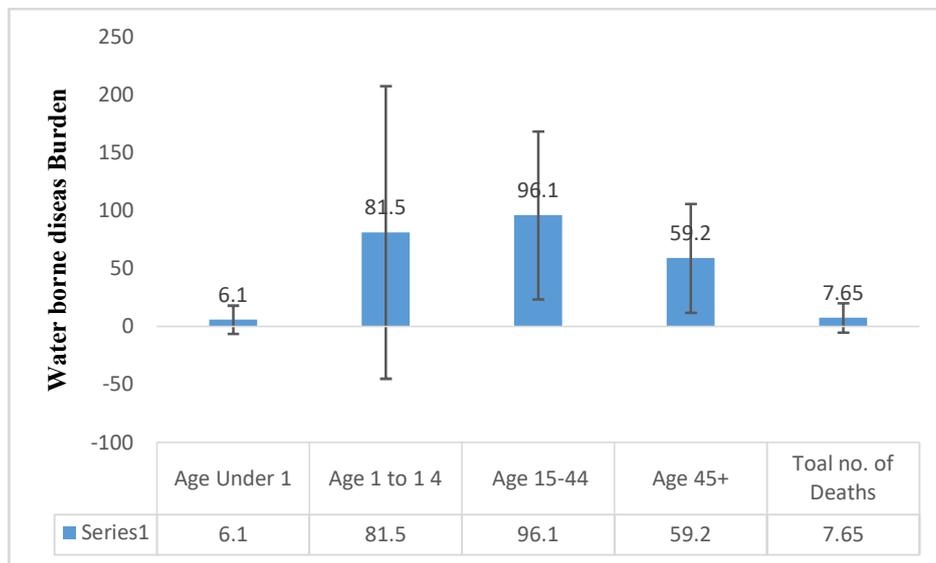


Figure 1: Water borne disease burden of patients

Table1: Physical, Chemical and Bacteriological Analysis

Sample Code	Source	Turb. (NTU)	Physico Chemical Analysis Ta												Bacteriological Analysis MPN Method		
			EC μ S	Sal . %	TDS mg/l	pH	Cl mg/l	Co ppm	Ni ppm	Zn ppm	Mn ppb	Fe ppm	Cd ppb	As mg/L	E-Coli	Fecal Coliform	Total Coliform
S-01	HP	B5	1743	0.9	1130	8.2	289	90.6	62.7	23.5	25.64	0.782	179.8	0.025	-ve	-ve	-ve
S-02	HP	B5	1931	1.0	1310	7.9	298	98.3	65.1	29.2	26.08	0.845	170	0.005	-ve	-ve	-ve
S-03	HP	B5	1668	0.8	1080	7.6	316	68.8	11.25	30.8	107	0.595	182	0.005	-ve	-ve	-ve
S-04	HP	B5	1889	0.9	1208	7.5	259	31.2	136.3	36.45	25	0.512	119.6	0.005	-ve	-ve	-ve
S-05	HP	B5	2280	1.2	1480	7.4	365	101	58.8	15.13	150	0.722	462	0.005	-ve	-ve	-ve
S-06	HP	B5	1966	0.5	1330	7.9	285	61.1	106.8	22.19	110.8	0.272	156	0.01	-ve	-ve	-ve
S-07	TW	B5	1317	0.7	960	7.82	153	42.1	77.8	16.89	43.36	BD	139.8	0.005	-ve	-ve	-ve
S-08	HP	B5	1992	1.0	1300	8.14	314	50.4	98.36	14.8	30.03	0.472	201	0.005	-ve	-ve	-ve
QA-09	HP	B5	1202	0.7	670	7.66	212	47.9	45.67	14.4	50.72	0.502	216	0.01	-ve	-ve	-ve
QA -10	HP	B5	1159	0.7	640	7.4	289	61.8	81.13	27.7	126.1	2.037	212.2	0.01	-ve	-ve	-ve
QA -11	MP	B5	1350	0.8	770	7.8	348	56.5	46.6	33.94	54.18	0.736	175.8	0.005	-ve	-ve	-ve
QA -12	MP	B5	1384	0.6	687	7.9	176	54.8	82.6	31.98	BD	0.522	106	0.005	-ve	-ve	-ve
QA -13	MP	B5	1319	0.2	623	7.6	251	9.65	233	26.7	34.58	0.324	72.8	0.005	-ve	-ve	-ve
QA -14	HP	B5	1570	0.9	852	7.9	272	79.5	348.4	24.97	57.37	0.713	194	0.01	-ve	-ve	-ve
QA-15	HP	B5	1916	1.0	1339	7.8	284	60.5	346.4	34.6	83.06	0.018	143.6	0.005	-ve	-ve	-ve
QA-16	HP	B5	1320	0.7	922	7.7	136	11.9	252.6	33.5	66.13	BD	177	0.005	-ve	-ve	-ve
QA -17	HP	B5	1662	0.9	1163	7.8	299	43.9	304.2	41.54	86.82	BD	206.7	0.025	-ve	-ve	-ve
QA -18	HP	B5	1733	0.9	1130	8.2	289	55.6	221.5	35.69	130	0.004	137	0.01	-ve	-ve	-ve
DP-19	HP	B5	1931	1.0	1610	7.9	368	78.7	312.3	46.14	97.24	1.17	129.8	0.005	-ve	-ve	-ve
DP-20	HP	B5	1668	0.8	1080	7.6	216	72.8	308.4	48.09	83.4	0.928	145.4	0.005	-ve	-ve	-ve
DP-21	HP	B5	889	0.4	580	7.5	159	20.6	206.3	42.59	98.23	0.382	86.6	0.025	-ve	-ve	-ve
DP-22	HP	B5	2280	1.2	1480	7.4	365	55.3	241.8	48.61	105.7	0.879	143.3	0.01	-ve	-ve	-ve
DP-23	HP	B5	1966	1.0	1330	7.9	285	17.9	182.7	29.2	94.5	0.58	69.1	0.005	-ve	-ve	-ve
DP-24	TW	B5	1317	0.7	860	7.82	153	28.9	243.2	43	95.7	0.53	103.7	0.005	-ve	-ve	-ve
S-25	HP	B5	1992	1.0	1300	8.14	314	16.7	178.5	47.48	251.9	0.52	112.8	0.025	-ve	-ve	-ve
NS-26	HP	B5	1802	0.9	1120	7.66	212	14.6	131.9	46.14	132.4	0.562	95.4	0.01	-ve	-ve	-ve
NS -27	HP	B5	1759	0.9	1140	7.4	289	70.9	214.8	60.41	202	0	136.6	0.005	-ve	-ve	-ve
NS -28	MP	B5	1650	0.8	1070	7.8	348	86.1	230.3	60.19	201	0.121	170.8	0.005	-ve	-ve	-ve
NS -29	MP	B5	1984	1.0	1387	7.9	276	26.9	208.8	51.43	158.3	0	112	0.025	-ve	-ve	-ve
NS -30	MP	B5	1319	0.7	827	7.6	258	64.2	194.5	56.24	173	0.734	129.8	0.01	-ve	-ve	-ve
NS -31	HP	B5	2570	1.3	1652	7.9	272	33.6	160.7	48.98	150.3	0.397	113.1	0.005	-ve	-ve	-ve
NS -32	HP	B5	1916	1.0	1339	7.8	204	43.7	120.9	45.64	153.1	BD	64.5	0.005	-ve	-ve	-ve
NS -33	HP	B5	1320	0.7	922	7.7	136	32.8	131.8	49.62	152.8	BD	83.2	0.01	-ve	-ve	-ve
NS -34	HP	B5	1662	0.9	1163	7.8	399	35.4	124	44.3	134	BD	103.7	0.01	-ve	-ve	-ve
NS-35	HP	B5	1319	0.7	823	7.6	256	64.2	194.5	56.24	173	0.734	129.8	0.01	-ve	-ve	-ve
NS-36	HP	B5	2370	1.4	1682	7.9	272	33.6	160.7	48.98	150.3	0.397	113.1	0.005	-ve	-ve	-ve
NS-37	HP	B5	1916	1.0	1339	7.8	288	43.7	120.9	45.64	153.1	BD	64.5	0.005	-ve	-ve	-ve

S: Sakrand, QA: Qazi Ahmed, DP: DolatPur, NS: Nawabshah *BELOW 5 NTU nephelometric unit, μ S : micro Siemen , EC: Electrical Conductance, mg/L : Miligram per liter , TDS : Total Dissolved salts , MPN : Most Probable Number ppm: Parts per Million, ppb : Parts per Billion , HP: Hand Pump, MP: Motor Pump, TW: tube Well.

Table 2: Water Borne Diseases Burden during 2015

S.No:	Name of Disease	No: of Cases			Age Group (years)				No: of Deaths (n=3)
		M (n=3)	F (n=3)	Total (n=3)	Under 1 M/F (n=3)	1-14 M/F (n=3)	15-44 M/F (n=3)	45+ M/F (n=3)	
01	Cholera	-	-	-	-	-	-	-	-
02	Typhoid Fever	446	292	738	7/5	270/146	89/87	80/54	29
03	Shigellosis (Basillary Dysentery)	150	159	309	20/21	60/63	41/41	29/34	01
04	Amoebiasis	84	80	164	0/0	12/11	39/39	33/30	00
05	Acute Poliomyelitis	06	09	15	0/0	6/9	00	00	00
06	Viral Hepatitis (A & E)	176	159	335	6/2	54/30	67/52	49/75	17
07	Ascariasis	108	86	194	0/0	0/0	73/58	35/28	00
F- Statistics at df= 20		4.8	5.1	8.6	4.9	34.1	71.0	80.7	122.3

DISCUSSION

Water, an essential element for all living beings, has acquired growing concern from researchers worldwide. Water pollution from different sources is threatening public health in Pakistan. Drinking water is contaminated with heavy metals and microbes throughout the country. World Health Organization (WHO) set the standards regarding water quality are failing to comply and are the main factors responsible exclusively or in a combination of the various health issues. In the past few decades, water pollution from toxic metals has received greater attention of scientific community, as it poses threat to public health as well as aquatic life (25). The physical parameters observed in this study were in conformity with the results of a

previous study in which ground water samples were observed colorless, odorless but were slightly saline (22). The occurrence of turbidity of surface water may be permanent or seasonal. The normal WHO turbidity limit in drinking water is 5 NTU. The high turbidity is usually associated with higher levels of disease-causing microbes and indirectly constitutes a health issue (08). Electric conductance (EC) of water is a measurement of the amount of salts dissolved in water and thus EC indicates concentration of total dissolved solids that makes water conductor of heat. The normal WHO value of electric conductance is 1562 $\mu\text{S}/\text{cm}$ and the results indicate that drinking water samples were highly ionized due to excessive dissolved solids and other impurities. The similar

results were previously reported for ground water samples from Bahawalpur City, Pakistan (16). Total dissolved solids Total Dissolved solids (TDS) refer to the amount of inorganic substances suspended or dissolved in water. The normal permissible value for TDS in drinking water is 500 mg/L to 1000 mg/L. These results were in accordance with the results previously reported for ground water sources from district Matiari, Sindh where the EC, TDS concentration was above the permissible value and elevated TDS concentration which make the water unsuitable for human drinking. In addition, increased TDS concentration also affects the individuals suffering from heart and kidney problems. High TDS values also affect skin and cause rashes, and disturb body hair as well. TDS did not play a direct role in health risks, but high salt contained water's extended utilization (above 500 ppm) can cause stiffness of the joints, kidney stones, gallstones, and hardening of arteries. The elevated level of TDS decreases the tastiness and causes gastrointestinal irritations in human and laxative effect mainly upon transits (26). Elevated chloride level was found to cause corrosion of pipes which can lead to increased concentration of metals in the water supply. Arsenic is known as a

potent carcinogen poses major public health issues in many countries like Bangladesh, India, China, Vietnam, Nepal and Myanmar (26). It occurs in water in the form of arsenite, arsenate, and organic arsenicals. The concentration of arsenic in drinking water of many regions of Pakistan exceeds the WHO standard of 10 ppb ($\mu\text{g/L}$). A study conducted previously reported that drinking water available to eleven cities of Punjab showed an excess of arsenic (15). Overexposure to arsenic in drinking water causes several health concerns including nausea, vomiting, lower white and red blood cells production, damage blood vessels, disrupt the heart rhythm and cause uncomfortable tingling in hands and feet. Long-term exposure to arsenic can also cause several kinds of melanosis and cancer. Zinc (Zn) is an essential element for humans and plays a beneficial role in normal growth and reproduction, with the permissible of 3 mg/L level. In most cases, Zn concentration in drinking water is found within the normal range in Pakistan. However, published data that Zn concentration in drinking water varied between 0.040 to 0.046 mg/L in pre-monsoon and post-monsoon seasons of district Thatta, Sindh. Cadmium Cadmium (Cd) has no positive role in health causing both acute and chronic problems in humans

whereas the range for Cd concentration in drinking water set at 0.003 mg/L by WHO. Intake of Cd may cause acute gastrointestinal problems, such as nausea and diarrhea, while chronic exposure may causing kidney damage , reproductive problems , bone damage and cancer. Manganese (Mn) is a normal constituent of human diet and postures a small problem in some parts of Pakistan where it exceeds the WHO standard limits (0.5 mg/L). Previous research work showed that the concentration of Mn (2.56 mg/L) was high in groundwater samples of Khyber Pakhtoonkhwa (14). The excess concentration of different salts like sodium (Na), calcium (Ca),magnesium (Mg), potassium (K) and chlorides (Cl) were found from sewerage water of Fullali Canal, Hyderabad (27). Over exposure of manganese Mn through drinking water causes permanent neurological disorders similar in symptoms to idiopathic Parkinson disease. Iron (Fe) is an essential element for the normal physiology of humans and its deficiency and overexposure both can cause severe health linked problems. In drinking water, the permissible limit of Iron set by WHO is 0.3 mg/L. In Pakistan it was reported that Fe concentration was overloaded in 28% of ground water samples and 40% of surface water samples (28).

Iron overexposure is a less common condition in comparison to its deficiency, but it can lead to several serious health problems like cancer, diabetes liver and heart diseases as well as neurodegenerative disorders (13,14). Cobalt is relatively low in drinking water, it stimulates the production of red blood cells thus, used to treat anemia in pregnant women, so the water samples of both phases were suitable for drinking purpose with respect to cobalt contents. Nickel (Ni) is known to be a compound causing cancer in humans. The maximum admissible concentration set by WHO for nickel in drinking water is 0.02 mg/L. The high concentration of nickel was reported in ground water samples (0.01–2.19 mg/L) and 75% of surface water samples from Karachi which is exceeded the US EPA limit for Nickel. Nickel is also recognized to causes variety of adverse health effects, including dermatitis, cardiovascular diseases, lung fibrosis, kidney problems and cancer of the respiratory tract (22).

The water sources usually contain low concentration of heavy metals as they dissolved these substances while moving downwards as hydrological cycle. The heavy metals are essential for metabolic activities in the body but their over exposure can lead to

adverse effects on living organism including humans (21).

Arsenic (As) a potentially toxic element can exist in organic and inorganic form. Arsenic in drinking water can impact human, exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells while ingesting high levels of inorganic arsenic can cause cancer. The concentration of Arsenic (As) ranged between 0.0045 to 0.0055 mg/L-1 in both seasons respectively. These values are much lower than the tolerance limit of 10 µg/L-1 WHO (2011) for drinking water. Our finding is not in agreement with (9). Cadmium (Cd) is an element of great concern from a toxicity point of view. The safe standard for Cd concentration in drinking water set by WHO is 0.003 mg/L-1. The concentration of Cd in water ranged between 0.15-0.22 mg/L during study period. In both seasons the Cd concentrations are above the safe limit set by WHO (2011). Cadmium is a toxic metal causing both acute and chronic toxicity in animal and humans. Over exposure to high concentration of Cd may cause gastrointestinal disorder like diarrhea, vomiting and kidney damage (13,26,27). Zinc (Zn) is very essential for human health but over exposure can lead to adverse health consequences. For water WHO (2011) set the

maximum acceptance concentration of 3 mg/L. The Zn concentration of water ranged between 0.040 to 0.046 mg/L-1 is found well below the WHO limit in both seasons, respectively. The main source of Zn in water could be use of fertilizers and pesticides in the agriculture farms. Lead (Pb) in trace amounts occur naturally in soil and water. The permissible limit for lead in water is 0.001 mg/L. Even at low concentration it may cause developmental delay, miscarriages and low birth weight, chronic exposure could adversely affect major organs and body systems i.e immunological, digestive as well as skeleton and kidneys. In the present study, the concentration of Pb ranged between 1.40-1.49 mg/L-1 during pre-monsoon and post-monsoon season which is above acceptance limit. The higher concentration during post-monsoon season could be result of high flux of organic waste from agricultural runoff. The concentrations of Pb observed are in conformity with the results (04,15,17)

Copper (Cu) is an essential metal for all living organisms, plays an important role in many enzymatic reactions. Copper content present in the samples ranges from 0.001-0.87 mg/L are within the permissible limit set (29). The seasonal variation in copper content is not significant; however a trend has been recorded with maximum

concentration observed in pre-monsoon season. A few chemicals and dangerous metals polluted the drinking water sources and connected with human wellbeing and that sullyng prompts to gastrointestinal, liver, kidney, cardiovascular, and neurological infections and malignancy(27), in present review Total subjects (male and female) of some normal water borne illness were analyzed and recorded at taluka clinic organization, area Shaheed benazeerabad amid 2014, Water Borne Diseases i.e.; Typhoid Fever, Shigellosis (BasillaryDysentary), Amoebiasis, Acute Poliomyelitis Viral Hepatitis (A and E) , Ascariasis Burden appropriated in various age gathering of male and female at taluka Hospital Sakrand amid 2014 appeared in table 02. Rashes of skin, ear torment and different irresistible infections are across the board protests after the surge. Long haul mortality can be specifically ascribed to the flooding, for example, increments in diarrheal passings in low-wage countries (25). Deaths occur during the study year at study area and wellbeing office recorded the setback because of Typhoid, Shigellosis (BasillaryDysentary), Viral Hepatitis (A and E), 08, 18 and 60 individually, detailed losses were not analyzed legitimately and no any such research facility office accessible at

remote regions. Quality and Quantity of water hugy affects diarrheal sickness. Accessibility of safe water lessens the diarrheal sickness. In the study, quality and amount of water be evaluated. Thus, relationship between the quality and amount of water with waterborne infections trouble record were introduced/incorporated into this research.

CONCLUSION

The Present research work revealed that the significant results regarding water quality the potentially biohazards agent contaminated the drinking water sources of taluka Sakrand District Shaheed Benazeerabad. several chemicals and toxic metals contaminated the drinking water sources and associated with human health and that contamination leads to gastrointestinal, liver, kidney, cardiovascular, and neurological diseases and cancer, some common water borne disease were diagnosed and recorded, Deaths occur during the study year at study area and health department recorded the casualty due to Typhoid, Shigellosis (BasillaryDysentary), Viral Hepatitis (A & E) , 08, 18 and 60 respectively, This research is part of the efforts taken to evolve and develop a community based awareness and establishing spatial and temporal prevalence of biohazards in drinking water sources of the study area.

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